Town of Thompson,

Sullivan County, New York

Emerald Green Wastewater Treatment Plant Upgrade
Map, Plan, & Report

Prepared For:

Town of Thompson, NY

4052 State Route 42,
Monticello, NY 12701

Prepared by:

Delaware Engineering, D.P.C.

55 South Main Street
Oneonta, New York 13820
607-432-8073

August 12, 2020
Revised January 24, 2024

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1.0 Introduction

In August 2020, the Town commissioned the preparation of a Map, Plan, and Report (MPR) to assist local officials and residents in evaluating the public benefit of a project that will upgrade and expand the capacity of the wastewater treatment plant (WWTP) serving the Emerald Green-Lake Louise Marie and Rock Hill sewer districts. A comprehensive upgrade of the facility was deemed necessary to meet recently updated water quality standards, expand plant flow capacity to accommodate modest proposed growth, expand bio-solids processing capacity and to ensure the plant's long-term permit compliance and viability.

Completion of the MPR is required under New York State Town Law 202b and is necessary whenever a town resolves to undertake a project to improve or reconstruct existing facilities on behalf of a sewer district. This revised MPR has been prepared to update the public on changes to the proposed upgrade plan and project costs. It also includes an accounting of state and federal of funding commitments and an analysis of final rate impacts to system users.

1.1 Background

The Town of Thompson, Sullivan County, is located in the foothills of New York State's Catskill Mountain region. The Town owns and operates the Emerald Green wastewater treatment plant (WWTP) which is located on a 14.92 -acre parcel on the southern side of NY Route 17 and just north of Lake Louise Marie, in the hamlet of Rock Hill. A map identifying the Emerald Green WWTP site boundaries is included as **Figure 1 – Location Map**.

Historically, the facility served the Rock Hill and Emerald Green Sewer Districts. Following authorization of the August 2020 MPR, the Town dissolved those districts and approved the formation of the Consolidated Rock Hill/ Emerald Green Sewer District.

The consolidated district has ±1,448 properties. Of those, ±867 (60%) are 1-2 family homes, and ±575 properties are classified as vacant land. There are no major industrial users discharging to the WWTP, nor are there any planned or anticipated in the near future.

The WWTP is regulated by the New York State Department of Environmental Conservation (NYSDEC) under the State Pollutant Discharge Elimination System (SPDES) Permit program and operates under SPDES Permit No. NY0035645. The SPDES permit regulates the volume (capacity) and quality of water (effluent) permitted to be discharged from the facility, and details the daily and monthly water quality monitoring requirements.

Rock Hill

Neversink Lakes

EG WWTP

Lake Louis Marie Rd

Wurtsboro Mountain Rd

Adams Rd

Wanaksink Por

State Highway 17 W

Wolf Lake Rd

Rock Hill - Emerald Green Consolidated Sewer District

Town of Thompson, NY

Emerald Green Outline

Emerald Green Parcels

N

0 0.25 0.5 0.75 1 Miles

Fig.-1

Prepared By: Delaware Engineering, DPC
Date: January 2024
Source: Sullivan County, Town of Thompson Utilities

Esri, Tom

Bureau, USDA, USFWS

The SPDES permit allows for the plant to discharge up to 0.410 million gallons per day (MGD), and the plant typically operates at approximately 70% capacity. Outflows from the plant are received by McKee Brook, a class B(T) stream.

1.2 Reasons for the Project

1) Under its current process configuration, the Emerald Green WWTP has been in service for nearly 30 years and while the equipment and systems have been maintained throughout the intervening years, the plant is approaching the end of its design life.
2) While the existing disinfection system is able to meet interim SPDES permit limits for Total Residual Chlorine (2.0 mg/l), it is uncertain whether the system will be capable of consistently meeting the stricter limits (0.03 mg/l) set to go into effect in January 1, 2026. To remedy this, the Town will discontinue chemical disinfection and switch to UV disinfection eliminating the potential for Total Residual Chlorine exceedances and permit violations.
3) The plant is currently utilizing approximately 70% of its available hydraulic capacity. A request for a SPDES permit modification to increase the permitted capacity by 65,000 GPD was submitted to the NYS DEC and was approved in July 2023. The increase is needed to ensure the facility can accommodate future growth.
4) The plant does not currently have facilities for processing waste sludge, which is presently hauled to the Town's Kiamesha WWTP for processing. If the Kiamesha sludge handling and processing facilities were ever disabled, the Emerald Green facility, with its limited waste sludge storage capacity, would experience a severe operational disruption as well. By adding sludge processing facilities, the facility will be less reliant on Kiamesha plant operations.

The proposed project will upgrade the existing plant and provide new treatment facilities that will ensure continued compliance with SPDES permit requirements for the near term, as well as for the increase in loading conditions up to 0.475 MGD. The comprehensive upgrade and expansion project has an estimated capital cost of **$16,057,378.**

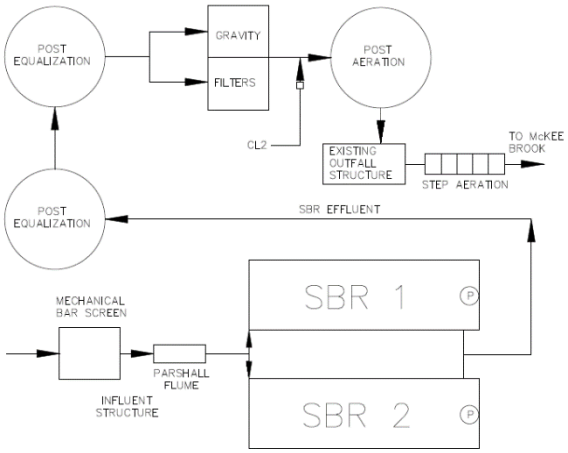
The August 2020 MPR proposed a project with an estimated cost of **$13,553,241**. This figure has been revised to reflect changes to the proposed upgrade plan necessitated in part by the request for a SPDES permit modification for the increased flow. The WWTP is not currently designed to treat the more restrictive nutrient limits as set forth in the modified SPDES permit and therefore, a fourth SBR basin will be needed.

2.0 District Boundary Description

Historically, the Emerald Green wastewater treatment plant served both the Emerald Green-Lake Louise Marie and the Rock Hill sewer districts. In 2021, the Town dissolved the two districts and created the Consolidated Rock Hill/Emerald Green Sewer District. A boundary map of the sewer district is included herein as **Figure 1**.

3.0 Description of Existing WWTP Facilities

The Emerald Green WWTP is a single stage nitrification process utilizing Sequenced Batch Reactors (SBR) to achieve ammonia and phosphorus removal. The SBR effluent flows to tertiary treatment units to meet discharge permit levels.



Process Diagram

Influent enters the facility through the influent channel structure where is passes through a mechanical bar screen and Parshall flume. Influent then flows to the influent holding tank and then on to the two SBR basins.

Treated water is removed from the SBR basins via decanters to the two Post EQ tanks then on through the sand filters. The effluent then passes through the chlorine contact tank and the post aeration tank. Finally, the effluent is dechlorinated prior to discharge to McKee Brook.

4.0 General Plan of Improvements

The comprehensive facility upgrades and improvements will encompass plant buildings, equipment, systems and site conditions. Significant improvements include installation of a new UV disinfection system, construction of two new SBR basins, and the construction of a new sludge dewatering building. All work will occur within the current property limits and within previously disturbed areas.

The proposed work will be completed in two phases. The following is a summary of the principal proposed upgrades and improvements necessary to adequately treat anticipated demand up to 0.475 MGD and provide for future needs.

PHASE 1

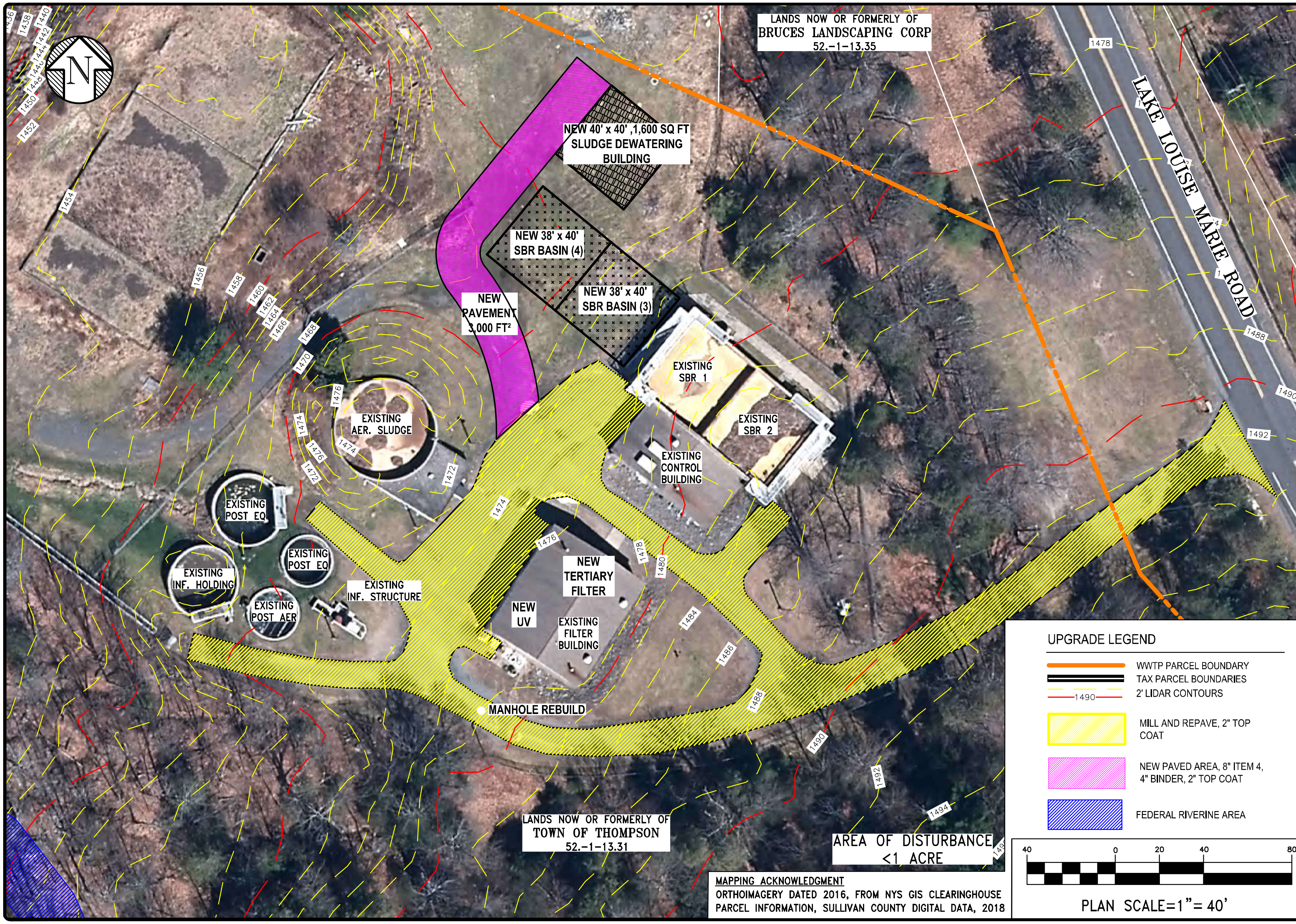
- **Tertiary Filtration (Disc Filter) System (New)**
- **UV Disinfection (New)**
- **Alkalinity Chem Feed System (New)**
- Yard Piping Improvements
- Site Work Improvements
- Minor SCADA Improvements
- Other Miscellaneous Improvements

PHASE 2

- **Headworks Improvements (New)**
- Influent Holding Tank Improvements (Upgrade)
- SBR Basin 1 & 2 Improvements (Upgrade)
- **SBR Basin 3 & 4 Construction (New)**
- Post Equalization Tank 1&2 Improvements (Upgrade)
- **Process Air Supply Blower Improvements (New)**
- Post Aeration Improvements (Upgrade)
- Sludge Holding Tank Improvements
- **Sludge Processing Construction (New)**
- Yard Piping Improvements
- Site Work Improvements
- SCADA Improvements
- Other Miscellaneous Improvements

The current proposed layout of these facilities is shown on the site plan (see **Figure 2 – Upgrade Site Plan**).

Further details on this upgrade and expansion project are included in the Preliminary Engineering Report (Original July 2, 2020, Revised January 2024) prepared by Delaware Engineering, D.P.C.



UPGRADE LEGEND

- WWTP PARCEL BOUNDARY
- TAX PARCEL BOUNDARIES
- 1490 — 2' LIDAR CONTOURS
- MILL AND REPAVE, 2" TOP COAT
- NEW PAVED AREA, 8" ITEM 4, 4" BINDER, 2" TOP COAT
- FEDERAL RIVERINE AREA

40 0 20 40 80

PLAN SCALE=1"= 40'

MAPPING ACKNOWLEDGMENT
ORTHOIMAGERY DATED 2016, FROM NYS GIS CLEARINGHOUSE
PARCEL INFORMATION, SULLIVAN COUNTY DIGITAL DATA, 2018

DELAWARE ENGINEERING, D.P.C.
CIVIL AND ENVIRONMENTAL ENGINEERING
55 SOUTH MAIN STREET, ONEONTA, NY 13820 - 607.432.8073
28 MADISON AVENUE EXTENSION, ALBANY, NY 12203 - 518.452.1290
6 TOWNSEND STREET, WALTON, NY 13856 - 607.865.92354
31 N. MAIN STREET, LIBERTY, NY 12754 - 845.747.9952
16 EAST MARKET STREET, RED HOOK, NY 12571 - 518.452.1290

DATE: 1/15/2024
DRAWN BY: MO
SCALE: 1'=40'
REVIEWED BY: DRO
PROJECT NO.: 19-1890
FILE: (T) THOMP/EM GR

REVISIONS

NO.	DATE	DESCRIPTION
.		.

EMERALD GREEN WWTP
TOWN OF THOMPSON
SULLIVAN COUNTY, NY

SITE PLAN
WITH IMPROVEMENTS

SHEET: FIG-2

5.0 Proposed District Operations

The Town of Thompson Water and Sewer Department oversees day-to-day operations, maintenance, and administration of all four of the Towns' wastewater treatment facilities. The department is managed by the superintendent and assistant superintendent with support by a foreman and account clerk. Additionally, the Emerald Green facility employs a dedicated staff consisting of one 3a-certified licensed operator and two 2a-certified operators.

It is anticipated that additional personnel will not be required to operate or maintain the upgraded facilities, and staffing is anticipated to remain at current levels.

6.0 Statement of Regulatory Review and Approvals Required Prior to Construction

The engineering report and design documents will be jointly reviewed by the NYS Department of Environmental Conservation (DEC) and the NYS Environmental Facilities Corporation (EFC).

Plans will also be submitted to the Delaware River Basin Commission (DRBC), a regional water resource management consortium made up of four states and the US Army Corps of Engineers. The DRBC coordinates with states and local governments on water and wastewater projects throughout the Delaware River Basin region. The WWTP is located in an area identified by the DRBC as "special protection waters" and DRBC review is required for any new treatment facility or expansion of an existing facility with an average daily discharge rate of 10,000 gallons a day or more during any consecutive 30-day period.

Because this action will require the discretionary approval of multiple governmental and quasi-governmental agencies, NYS requires the completion of a State Environmental Quality Review (SEQR) coordinated with all involved, and potentially involved agencies. The SEQR process was initiated at the June 2, 2020 meeting of the Thompson Town Board, at which time the Board declared their intent to serve as lead agency for the Unlisted action. At their July 7, 2020 meeting, the Town Board resolved to issue a negative declaration for the proposed action as no significant environmental impacts were identified during the SEQR process. It should be noted that while the scope of work has changed from the August 2020 MPR, the environmental review that was initially conducted encompassed the project described herein, including the permit modification for the flow increase and the construction of the new disinfection, SBR, and sludge dewatering facilities.

7.0 Maximum Amount to be Expended

The maximum amount that is planned to be expended is **$16,057,378**. A detailed project cost estimate for both Phase 1 and 2 is included herein as Appendix A.

8.0 Cost of Hook-Up Fees Charged by District, If any

The Town intends to continue with its current policy regarding hook-up fees and reserves the right to modify this in the future.

9.0 Detailed Explanation of Costs (How Costs are Computed)

The schedule of rates for debt service and operation and maintenance expenses for properties included in the Consolidated Rock Hill/Emerald Green Sewer District are computed based on the number of points assigned to each property and the budget for the coming fiscal year. Points are determined based on property use and codified in *§194-46 Schedule of Points* of the Town Code. Single-family homes are assigned 10 points for debt service and 10 rent points for operations and maintenance costs.

Costs to the typical user are calculated based on the total operations and maintenance (O&M) costs plus a unit share of any debt service owed by the sewer district. Only those properties within the district that are connected to public sewer system are responsible for a share of the O&M costs. However, all properties owners -- including vacant land not connected to the sewer system -- are and will continue to be charged for a share of the debt service.

9.1 Operations and Maintenance (O&M)

In the adopted 2024 Town of Thompson Budget, district users are charged $56.29/point for the operations & maintenance of the system and the typical single-family homeowner could expect to pay $562.90 for the O&M portion of the sewer costs.

2024 O&M Costs			
	O&M (cost per point)	**Points assigned to typical user**	**Annual Cost**
Consolidated Rock Hill/Emerald Green Sewer District	$56.29	10	$562.90

Operations and maintenance costs are not anticipated to substantially increase as a result of this project. The annual costs associated with disinfection will increase due to higher energy demand associated with the UV disinfection system and for periodic bulb replacement. The costs associated with a new sludge handling process will also add to the overall energy usage. However, hauling costs will be significantly reduced due the lower volume and higher quality of the bio-solids produced. New process motors and equipment shall be equipped with more energy efficient variable frequency drives resulting in reduced energy usage and less wear and tear on the motors.

9.2 Debt Service

The Rock Hill/Emerald Green Sewer District currently holds $2.8 million in debt from previous capital projects. In the adopted 2024 Town of Thompson Budget, district users are charged $18.10/point for the existing debt service and the typical single-family homeowner will pay $181.00 for the debt service portion of the annual sewer costs.

2024 Debt Service Costs			
	Debt Service (cost per point)	**Points assigned to typical user**	**Annual Cost**
Consolidated Rock Hill/Emerald Green Sewer District	$18.10	10	$181.00

It should be noted that by 2030, $883,184 of that debt will be retired with the remaining existing debt scheduled to be retired by 2051.

For 2024, the typical sewer user (i.e., a single-family home (SFH)) in the sewer district can expect to pay $743.90 for the combined cost of the existing debt service and O&M.

2024 Annual Sewer Costs for a Typical SFH			
	O&M	**Debt**	**Total**
Consolidated Rock Hill/Emerald Green Sewer District	$562.90	$181.00	$743.90

The total cost for the upgrade and expansion project is estimated at $16.1 million and the Town is eligible to receive hardship financing (0% - interest) for a 30-year term from the NYSEFC. The Town has also been notified that the project has been awarded $416,800 through the *Water Quality Improvement Program* (WQIP), $3,363,899 through the *Water Infrastructure*

Improvement Act (WIIA), and $6,939,000 through the *Federal Infrastructure Investment & Jobs Act* (aka Bipartisan Infrastructure Law (BIL)) resulting in a net principal balance of $5,337,679.

10.0 Cost to a Typical Single-Family Residential Property

The proposed project will result in an average annual cost increase of $233.04 for the typical single-family home. Since the Emerald Green plant will be transporting their dewatered sludge to the Kiamesha facility for further processing in the new ATAD (sludge digester) system, the cost will include a proportional share of the annual ATAD costs.

Rock Hill-Emerald Green Consolidated Sewer District Rate Impact Analysis	
Total Project Cost:	$16,057,378
Grants Secured:	$6,939,000 – BIL $3,363,899 – WIIA $416,800 – WQIP **$10,719,699**
Amount to be Financed:	$5,337,679
Annual Debt Service:	$177,922
Annual Debt Service Cost Increase for typical SFH:	$137.50
Estimated Annual O&M Cost Increase for typical SFH:	$95.50

Estimated Future Annual Sewer Costs for a Typical SFH					
	Current Costs	**Additional Debt Service**	**Additional O&M**	**Total**	**Percent Increase**
Consolidated Rock Hill/Emerald Green Sewer District	$743.90	$137.50	$95.50	$976.90	31%

The above costs and rate impacts are based on current district users and 2024 Sewer Rates. Sewer costs to individual properties would be reduced if the Town is able to secure grant funding for the proposed improvements. Future development might also lower sewer costs to individual properties by broadening the user base.

11.0 Method of Finance

At this time, the Town has a commitment from NYSEFC to provide hardship (0% interest) short and long-term financing for the project through the CWSRF Program. Principal costs will be reduced from $16.1 M to $5.34 M through $10.7M in state and federal grants, and the remainder will be financed at 0% interest for a term of 30 years.

12.0 Statement as to Benefit Assessment

The costs associated with the debt service from the bond to be secured to finance the facility upgrades, and associated increases in O&M costs will be charged on a benefit basis. Each holder of real property within the sewer district that will benefit from the project, as well as any out of district users, will be levied a share of those costs in accordance with the current Town Code and/or sewer use agreements/contracts. The full cost of the improvements will be assessed against those properties benefitted by the project. All property upon which the assessments are imposed will be benefited by the project, and no properties that are benefited by the project will be excluded.

APPENDIX A

Detailed Project Cost Estimate

Phase 1 & 2

PHASE 1

CAPITAL IMPROVEMENT COSTS

Prepared By: Delaware Engineering, DPC

Emerald Green WWTP
Sullivan County, New York

Date: 12/11/2023 | Project Number:
Design Stage: Preliminary | Calculated By: PFM
Revision: 3rd | Checked By:

Item No.	Item	Quantity	Unit	COSTS $/Unit	COSTS Total	Subtotals
	General Conditions					***$ 34,556***
1	MOB (3%)	1	LS	$ 34,555.50	$ 34,555.50	
	Disc Filter Improvements					***$ 793,850***
1	Treatment Building Renovations (HVAC, Arch, Mech, etc.)	2475	SF	$ 125.00	$ 309,375.00	
2	New Ultradisc Tertiary Filter	1	LS	$ 284,000.00	$ 284,000.00	
3	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 170,475.00	$ 170,475.00	
4	Temporary Filtration Unit	1	LS	$ 30,000.00	$ 30,000.00	
	UV Disinfection Improvements					***$ 358,000***
5	New UV System	1	LS	$ 205,000.00	$ 205,000.00	
6	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 123,000.00	$ 123,000.00	
7	Aluminum Access Grating, Steps, and Platform	1	LS	$ 30,000.00	$ 30,000.00	
	Misc Improvements					***$ 272,000***
8	New Alkalinity Chem Feed System	1	LS	$ 45,000.00	$ 45,000.00	
9	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 27,000.00	$ 27,000.00	
10	SCADA Improvements	1	LS	$ 125,000.00	$ 125,000.00	
11	Miscellaneous Site Improvements	1	LS	$ 75,000.00	$ 75,000.00	
					Subtotal Construction Costs (2023 Dollars)	$ 1,458,406
					Subtotal Construction Costs (2024 Dolllars, i=4%)	**$ 1,494,219**
					Engineering, Construction Inpsection, Legal, Administrative (16%)	**$ 235,807**
					Project Contingency (20%)	**$ 346,005**

TOTAL ESTIMATED PROJECT COSTS (2025 Dollars)	**$ 2,076,032**

PHASE 2

CAPITAL IMPROVEMENT COSTS

Prepared By: Delaware Engineering, DPC

Emerald Green WWTP
Sullivan County, New York

Date: 12/11/2023 | Project Number:
Design Stage: Preliminary | Calculated By: PFM
Revision: 3rd | Checked By:

Item No.	Item	Quantity	Unit	COSTS $/Unit	COSTS Total	Subtotals
	GENERAL CONDITIONS					***$ 276,300***
1	MOB (3%)	1	LS	$ 276,300.27	$ 276,300.27	
	Site Work					***$ 485,300***
2	Site Excavation	1	LS	$ 25,000.00	$ 25,000.00	
3	Rock Removal	1	LS	$ 50,000.00	$ 50,000.00	
4	Imported Fill	100	CY	$ 350.00	$ 35,000.00	
5	Site Fencing	1500	LF	$ 75.00	$ 112,500.00	
6	Automatic Sliding Gate	1	LS	$ 20,000.00	$ 20,000.00	
7	Misc Site Concrete (Walkways, Bollards, etc.)	25	CY	$ 2,500.00	$ 62,500.00	
8	Asphalt Paving - 2" HMA Top	210	TON	$ 300.00	$ 63,000.00	
9	Asphalt Paving - 3" HMA Binder	310	TON	$ 330.00	$ 102,300.00	
10	Erosion and Sediment Control	1	LS	$ 15,000.00	$ 15,000.00	
	Site Utilites					***$ 451,250***
11	8-inch SDR 26 PVC Piping (Gravity)	250	LF	$ 250.00	$ 62,500.00	
12	4-inch DI Piping (Forcemain)	400	LF	$ 175.00	$ 70,000.00	
13	8-inch SS Piping (Air Piping)	500	LF	$ 350.00	$ 175,000.00	
14	2-inch PE Water Service to Yard Hydrants	250	LF	$ 75.00	$ 18,750.00	
15	Yard Hydrants	2	EA	$ 2,500.00	$ 5,000.00	
16	Manhole Rehabilitation	1	LS	$ 45,000.00	$ 45,000.00	
17	Site Lighting and Ancillary Work	1	LS	$ 75,000.00	$ 75,000.00	
	Headworks and Influent Holding Tank Improvements					***$ 659,670***
18	New Mechanical Bar Screen (1/4" Opening)	1	EA	$ 118,000.00	$ 118,000.00	
19	New Washer/Compactor	1	EA	$ 55,200.00	$ 55,200.00	
20	New Manual Bar Screen	1	EA	$ 15,000.00	$ 15,000.00	
21	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 112,920.00	$ 112,920.00	
22	Structural Repairs	1	LS	$ 15,000.00	$ 15,000.00	
23	Concrete Equipment Pad	10	CY	$ 2,500.00	$ 25,000.00	
24	Select Backfill/Bedding	10	CY	$ 75.00	$ 750.00	
25	Flow EQ Pumps	3	EA	$ 45,000.00	$ 135,000.00	
26	EQ Tank Mixer	2	EA	$ 33,000.00	$ 66,000.00	
27	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 46,800.00	$ 46,800.00	
28	Influent Holding Tank Structural Repairs	1	LS	$ 20,000.00	$ 20,000.00	
29	Misc Site Piping (NPW, etc.)	1	LS	$ 25,000.00	$ 25,000.00	
30	Misc Site Electrical Work (conduit, wiring, equipment connection)	1	LS	$ 25,000.00	$ 25,000.00	
	SBR System Improvements					***$ 4,285,089***
26	SBR System (For 4 Tanks) -7.5-ft Decanter -Fine Bubbel Aeration Grid -20 HP Blowers -WAS Pumps -Submersible Mixers -Floats, Transducers, Probes -MCC with VFDs -Misc Mechanical Appurtenances	1	LS	$ 1,275,000.00	$ 1,275,000.00	
27	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 765,000.00	$ 765,000.00	
28	New SBR Tank (2) - Cast in Place Concrete (Material and Labor)	772	CY	$ 2,500.00	$ 1,928,888.89	
29	Select Backfill/Bedding	149	CY	$ 75.00	$ 11,200.00	
	Structural Repairs of Existing Tanks	1	LS	$ 45,000.00	$ 45,000.00	
30	Misc Site Process Piping	1	LS	$ 100,000.00	$ 100,000.00	
31	Misc Site Electrical Work (conduit, wiring, equipment connection)	1	LS	$ 85,000.00	$ 85,000.00	
32	Misc Site Work (cut/fill, grading, restoration)	1	LS	$ 75,000.00	$ 75,000.00	
	Post Equalization Tanks					***$ 281,000***
33	Flow EQ Pumps	2	EA	$ 35,000.00	$ 70,000.00	
34	EQ Tank Mixer	4	EA	$ 25,000.00	$ 100,000.00	
35	Installation of Precast Tankage (60% of Purchase Cost)	1	LS	$ 36,000.00	$ 36,000.00	
20	Structural Repairs of Existing Tanks	1	LS	$ 45,000.00	$ 45,000.00	
36	Misc Process Piping	1	LS	$ 15,000.00	$ 15,000.00	
37	Misc Site Electrical Work (conduit, wiring, equipment connection)	1	LS	$ 15,000.00	$ 15,000.00	
	Post Aeration Tanks (Re-Aeration)					***$ 204,600***
38	15 HP PDF Blowers	2	EA	$ 16,000.00	$ 32,000.00	
39	Fine Bubble Diffusers	1	EA	$ 55,000.00	$ 55,000.00	
40	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 42,600.00	$ 42,600.00	
28	Structural Repairs of Existing Tanks	1	LS	$ 45,000.00	$ 45,000.00	
41	Misc Process Piping	1	LS	$ 15,000.00	$ 15,000.00	
42	Misc Site Electrical Work (conduit, wiring, equipment connection)	1	LS	$ 15,000.00	$ 15,000.00	
	Sludge Handling Improvements					***$ 2,005,600***
1	New Coarse Bubble Diffuser System in Existing Aeration Tank	1	LS	$ 36,000.00	$ 36,000.00	
2	New 30 HP Blowers (2)	2	EA	$ 45,000.00	$ 90,000.00	
3	New 10 HP Sludge Pumps (Including all controls, VFDs, etc.)	2	EA	$ 60,000.00	$ 120,000.00	
4	New 1M Belt Filter Press	1	LS	$ 463,500.00	$ 463,500.00	
5	Installation of Equipment (60% of Purchase Cost)	1	LS	$ 341,100.00	$ 341,100.00	
6	New Dewatering Building	1,600	SF	$ 550.00	$ 880,000.00	
7	Miscellaneous Improvements	1	LS	$ 75,000.00	$ 75,000.00	
	Improvements to Operations/Treatment Building					***$ 187,500***
43	Treatment Building Renovations (HVAC, Arch, Mech, etc.)	750	SF	$ 250.00	$ 187,500.00	
	Misc Electrical/Control Work					***$ 650,000***
44	SCADA System	1	LS	$ 250,000.00	$ 250,000.00	
45	Misc Process Instrumentation	1	LS	$ 150,000.00	$ 150,000.00	
46	New 300 kW Diesel Generator Set	1	LS	$ 150,000.00	$ 150,000.00	
47	Electrical Service Upgrades	1	LS	$ 100,000.00	$ 100,000.00	

Subtotal Construction Costs (2023 Dollars)	$ 9,486,309
Subtotal Construction Costs (2025 Dolllars, i=3%)	**$ 10,064,025**
Engineering, Construction Inpsection, Legal, Administrative (16%)	**$ 1,587,097**
Project Contingency (20%)	**$ 2,330,224**

TOTAL ESTIMATED PROJECT COSTS (2025 Dollars)	**$ 13,981,347**