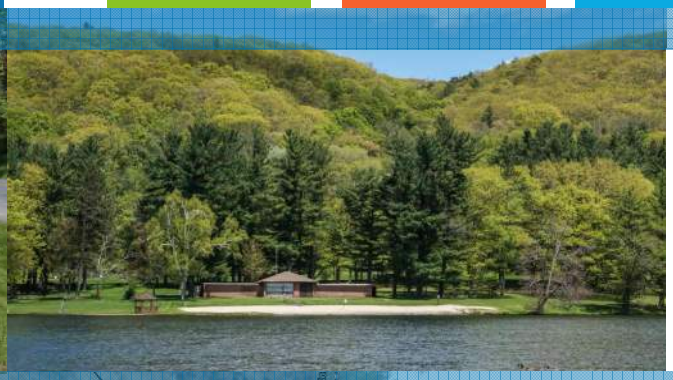

Town of North East Sewer District Map, Plan and Report

Town of North East

December 2022

Services Provided in New York by T&B Engineering and Landscape Architecture, PC

Tighe&Bond

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Section 1
Introduction

The purpose of this Map, Plan & Report (MP&R) is to establish the Town of North East Sewer District. This MP&R presents the sewer district delineation, sewer system capacity requirements, a description of the proposed sewer system components, project costs, financing methods, and anticipated user costs.

A wastewater feasibility evaluation for the proposed project was prepared in March 2020 and revised in April 2022 by Tighe & Bond. This report is referred to as the preliminary engineering report (PER). The PER serves as the basis for development of this MP&R. This MP&R builds upon the PER and documents the following:

- Finalizes the Sewer District delineation
- Describes the sewer system approach and components
- Documents the anticipated capital and operational costs
- Presents the anticipated user costs

The Village of Millerton is concurrently developing a sewer system Map & Plan. The proposed Town of North East Sewer District described in this MP&R will be connected to the proposed Village of Millerton Service Area and the flow from each community will be treated by a common treatment system. Although they are separate districts, the system will be owned and operated by the Village of Millerton.

1.1 Project Need

The Town is currently served by subsurface wastewater disposal systems including septic tanks with leachfields, and outdated systems such as seepage pits, cesspools, and tight tanks. The PER documents the need for a community sewer system for the Village and the Town of North East, including:

- There are documented issues with existing septic systems
- Failing septic systems present environmental and health concerns
- Site constraints limit the performance of traditional septic systems
- Many businesses experience constraints because of their septic systems limitations
- There is public support for a sewer system
- A sewer system will accomplish comprehensive plan goals
- A sewer system will provide opportunities for economic growth

The need for community sewer collection and treatment is constantly evolving. Historically, initial efforts were focused on collection and disposal and were driven by the need to reduce human disease. That era was followed by a focus on the elimination of water pollution effects, allowing native marine organisms to return to normal growth patterns and allowing full human recreational use. Currently, community sewer systems have begun to redefine wastewater as a valuable resource. As such, this MP&R uses the

term "water resource recovery and return systems". This modern terminology embraces the concept that water is the most valuable resource in the world.

1.2 Sewer District Organization

The Town of North East sewer district will be organized in the same fashion as the Town of North East water district. Once the sewer district is established, the system components, easements, construction, operation, maintenance and billing will be completed by the Village of Millerton.

Section 2
Description of Sewer District & Facilities

2.1 Sewer District Delineation

There are currently no public sewers in the Town. However, 17 of the 28 parcels in the proposed Town sewer district have public water service available through the Village of Millerton Water Department. The remaining 11 parcels without water service will be provided with a metering system for their wastewater discharge.

The proposed sewer district is focused on the commercial properties along Route 44, which was identified in the PER as the area of greatest need. A map of the Town of North East Sewer District is attached in Appendix A.

The sewer district includes the parcels along each side of Route 44 starting from the Village/Town boundary near the CVS Pharmacy and continuing east to the border of Connecticut. The sewer district serves commercial and mixed-use properties. Many of the developed parcels in the district have multiple buildings and uses. There are several large undeveloped parcels in the district. For parcels in the sewer district, connection to the sewer system will be mandatory to conform to the 2020 NYS Plumbing Code Chapter 7, Section 701.2.

2.2 Water Resource Recovery System Capacity Requirements

Table 2.1 on the following page summarizes the average day design flow for the Town of North East Sewer district. These flows have been based upon historic water meter data and estimates using NYSDEC guidelines where water usage data was not available. A Town future flow contribution of 75% of the base flow has been added to the average day design flow to account for potential future flow contributions in the Town. The future flow contributions are approximate based on the vacant land and potential build-out/expansion in the Town.

The anticipated flow contribution from the Village of Millerton is not shown in Table 2.1 but is anticipated to be 57,600 gpd. Therefore, the average day design flow for the water resource recovery system is 70,000 gpd. Since the sewer district does not provide service to all parcels in the Town, the proposed water resource recovery system will be designed to allow for future expansion.

Table 2.1
Town of North East Sewer District Design Flow Summary

Contribution	Wastewater Flow (GPD)
Town Base Flow[1]	7,100
Town Future Flow[2]	5,300
Average Day Design Flow	**12,400**

2.3 Sewer Collection System

The sewer district will be served by a septic tank effluent pump (STEP) collection system which is a type of low-pressure sewer. Low pressure sewers consist of smaller diameter forcemains through which liquid septic tank effluent flow is pumped. Septic tank effluent pumps force wastewater through the main regardless of pipe slope. Low pressure sewers can be installed by conventional open trench methods, but they can also be installed by directional drilling. Directional drilling utilizes exit and entry pits, and access for service connections, but does not disturb the ground surface over the entire pipe length, significantly reducing restoration costs. The small diameter high density polyethylene (HDPE) forcemains will be installed along the back or side yards or within highway rights-of-ways. Installation of forcemains within state owned highways will generally be avoided.

The minimum diameter for low pressure sewer piping is 2-inches and there are no minimum slope requirements. Individual effluent service lateral lines may be as small as 1.25" in diameter. It is anticipated that the Town of North East system will contain 2-inch through 6-inch HDPE piping, regular clean out structures every 500 to 1,000 feet, and air release valves at high points. The Town of North East STEP system will be designed in accordance with current design standards.

With STEP collection systems, each parcel or building will utilize a septic tank which contains an effluent filter and effluent pump which will pump the liquid sewage to the low-pressure effluent sewer system. Solids will remain in the septic tanks and will need to be removed approximately every 3-7 years depending on usage.

The Village proposes to pump out the existing septic tanks at each parcel and furnish and install a new septic tank, pump, and lateral for each of the developed parcels in the sewer district. Each parcel owner will be consulted to locate the new septic tank/effluent pump, but generally, the new tank and pump will be located near the existing septic system. The new septic tank will be located at least 10 feet from existing buildings to comply with codes. Existing septic tanks and leachfields will be abandoned or removed. If existing septic tanks are new and in good condition, they can potentially be re-used in which case the Village will retrofit the existing septic tank with a new septic effluent pump/filter.

The STEP tanks, pumps, filters, and electrical control panels will be owned by the Town and maintained by the Village. The Village will be responsible for maintenance of the tanks, pumps, and appurtenances including septic tank pumping once they are placed in operation. When necessary, the Village will be responsible for replacing the effluent pumps and maintaining the service lateral between the tank and the street.

Any parcel that utilizes grease traps, generally restaurants, will be responsible for installation, pumping and maintenance of grease traps. Through an intermunicipal agreement the Town will adopt Sewer Use Law coordinated with the Village. This will identify the types of businesses that require grease traps, maintenance responsibilities, and consequences if grease is discharged to the Town's collection system.

An easement at each parcel will be required for the Village to access and maintain the equipment on each parcel. The cost for establishing the easement will be covered by the Village but will require the cooperation of the parcel owner (for the initial project).

It is anticipated that, in most cases, the service connection lateral will utilize the existing pipe from the building so that no plumbing work will be necessary inside the buildings. Besides initial installation, the parcel owner will be responsible for maintaining the sewer lateral between the face of the building and the septic tank.

A hook-up fee will be required to connect to the system but will be waived for parcels that connect during the initial construction period established by the Village and would apply to any connections made at a later date. The parcel owner will be responsible for paying for electrical power for the pump, which is estimated to be approximately $15 per year for a typical single family residential household.

One of the concerns with STEP collection systems is that the pumps at each parcel will not work if there is a power outage. Frequently, if a home has municipal water service (as is the case for most of the district), the water service often remains unaffected by the power outage and therefore the homeowner can continue to use water, but the wastewater pump cannot turn on and thus the septic tank begins to fill and will eventually cause a back-up if the power outage is prolonged. This is not an issue if the facility has a back-up generator, but if it does not, water usage will need to be reduced during the power outage. Septic tanks for STEP systems are typically sized to have 24 hours of additional storage for these scenarios. However, if a sustained power outage lasted for several days, the Village will need to pump each septic tank into the collection system.

Table 2.2 provides a summary of responsibilities associated with the collection system.

Table 2.2
STEP Collection System Summary of Tasks & Responsible Party

Task	Parcel Owner	Town/ Village
Pump Out Existing Septic Tanks		✓
Remove or Abandon Existing Septic Tanks & Leachfield		✓
Connect New Septic Tank to Existing Lateral		✓
Install New Septic Tank, Pump, Filter, & Controls		✓
Install New Grease Trap (where required)	✓	
Install New Service Lateral Between Septic Tank & Forcemain		✓
Install & Maintain Collection System Forcemains		✓
Establish Access Easement for Septic Tank & Equipment		✓
Maintain & Pump Out Septic Tanks		✓
Maintain & Pump Out Grease Traps (where required)	✓	
Maintain/Replace Effluent Filter, Pumps, & Controls		✓
Maintain Service Lateral Between Building & Septic Tank	✓	
Maintain Service Lateral Between Septic Tank & Forcemain		✓
Electrical Cost for Running Effluent Pump	✓	
Pumping Septic Tank into Collection System During Power Outage		✓
Hook-up Fees for Initial Parcels within the Sewer District	✓*	✓

* Parcels not connected during the designated construction phase will be charged hook-up fees

2.4 Water Resource Recovery System

A water resource recovery system will be constructed at a Village owned parcel on Mill Street to provide treatment of the wastewater. The Mill Street Site is a series of three parcels located on the southern side of the Village near the corner of South Center Street and Mill Street. The parcels are already owned by the Village of Millerton and the site is isolated from neighboring parcels, making it an ideal location for a water resource recovery system.

The water resource recovery system will be designed to treat an average day flow of 70,000 gpd which includes flow contribution from the Village of Millerton Service Area and the Town of North East Sewer District. The treatment system will be designed to meet the anticipated New York State Department of Environmental Conservation (NYS DEC) issued State Pollutant Discharge Elimination System (SPDES) permit limits discussed in the PER.

The new water resource recovery facility will have the following components:

- Flow Equalization/Pre-Anoxic Tank
- Stage 1 Packed Bed Media Filter Treatment Units
- Stage 2 Packed Bed Media Filter Treatment Units
- Post-Anoxic Tank
- Pump Basins
- Ultraviolet Disinfection System
- Control Building
- Back-up Generator
- Site Improvements
- Treated water return to Webatuck Creek

The septic tanks at each parcel negate the need for primary treatment (solids removal) at the water resource recovery facility site. Therefore, solids removal will be addressed by the septic tanks. Periodic cleaning of the treatment tanks will be required. Each of the treatment units and tanks will be completely buried and out of site or mostly buried with only the top of the tank exposed for access purposes. The system will have security fencing and landscape screening. The water resource recovery system is expected to have minimal visual impacts.

The Mill Street Site has undergone an initial evaluation and was found to be suitable for the proposed system. The site is currently undergoing an endangered species and archeological significance study. A right-of-way to the site from South Maple Avenue is anticipated to maintain access to the site during a flood and to provide an access road with reasonable slopes. A conceptual site plan of the water resource recovery facility is included in Appendix B.

2.5 Return System

The treated wastewater from the water resource recovery system will be returned to Webatuck Creek. The anticipated return location to Webatuck Creek is downstream of the Mill Street Bridge. The anticipated location is shown on the conceptual site plan attached in Appendix B.

The surface water return will consist of a multiport fully submerged cross-channel diffuser to achieve even distribution across the stream channel.

2.6 Water Resource Recovery System Operations

The Village will own, operate, and maintain the water resource recovery system by hiring contracted licensed wastewater operators. The operators will manage the collection system and water resource recovery facility, including the Town portion of the system, to ensure continuous service and compliance with NYS DEC regulations.

Section 3
Project Costs

The project costs are comprised of two main components, the capital cost and the operation and maintenance cost. The capital costs are the anticipated costs to construct the proposed sewer system. The operation and maintenance (O&M) costs are the annual costs for labor, materials, and accounting associated with a functional sewer system.

3.1 Capital Costs

The anticipated total capital cost for construction of the water resource recovery system, including three years of escalation at 3% per year is $9,514,000 as presented in Table 3.1 below. The costs have been divided into two categories: collection costs and treatment costs. Refer to Appendix D for a detailed breakdown of capital costs.

Table 3.1
Water Resource Recovery System Construction Costs

Component	**Construction Cost**
Collection System	$4,739,000
Treatment System	$3,933,000
Construction Subtotal	$8,672,000
Escalated Total Construction Cost	**$9,476,000**

Table 3.2 provides the total system capital costs including engineering, legal fees, and New York State Revolving Fund (SRF) financing costs.

Table 3.2
Water Resource Recovery System Capital Costs

Escalated Construction Costs	$9,476,000
Engineering Design (8%)	$736,000
Engineering Construction (12%)	$1,137,000
Local Counsel	$119,000
Bond Counsel	$70,000
Project Contingency (20%)	$1,896,000
Total Project Costs	$13,434,000
Financing Costs (2.94%)	$396,000
Total Project Costs Including Grants & Financing	**$13,830,000**

Costs for the water resource recovery system will be shared by the Village of Millerton and the Town of North East. In Table 3.3, the collection system costs have been broken down to show the costs attributed to each community's collection system, as well as the cost impact of accommodating the Town's flows, as a portion of the forcemain in the Village must be upsized to account for the potential connection. The majority of the Village's collection system cost is unimpacted by the Town, except for this portion of forcemain.

Table 3.3
Water Resource Recovery System Construction Costs
Collection System Costs

Component	Capital Cost
Village Collection System – No Town Cost Impact	$3,781,000
Town Collection System – No Village Cost Impact	$912,000
Town Collection System – Cost Impact of Increased Pipe Diameter	$46,000
Total Collection Construction Cost	$4,739,000
Total Town of North East Collection System Cost	**$958,000**

The treatment costs have been broken down into two categories; flow proportional and static. The flow proportional costs increase with flow, so the Town will carry the additional cost for the system be sized to accommodate the increased flow contribution (from 57,600 to 70,000 gpd). These costs are presented in Table 3.4. However, there are certain portions of the treatment system that will be constructed the same size, regardless of whether the Town of North East forms a sewer district. Examples of this are the electrical service and access road. The Town is responsible for a portion of these costs based upon capacity.

Town of Northeast Flow Percentage = 12,400 gpd / 70,000 gpd = 18% of Total Flow

Using this percentage, the Treatment System Static Costs for each community is also presented in Table 3.4.

Table 3.4
Water Resource Recovery System Construction Costs
Flow Proportional and Static Treatment Costs

Component	Capital Cost
Village Treatment System – Flow Proportional	$3,383,000
Town Treatment System – Flow Proportional	$764,000
Village Treatment System - Static	$451,000
Town Treatment System – Static	$99,000
Total Treatment Construction Cost	$3,933,000
Total Town of North East Treatment System Cost	**$863,000**

Greater detail of the division of the static treatment costs using the flow percentage is for each community is presented in Table 3.5.

Table 3.5
Water Resource Recovery System Capital Cost Breakdown by Municipality

Municipality	Flow Contribution (gpd)	Percentage of Total Flow[1]	Portion of Static Treatment Capital Costs
Village of Millerton	57,600	82%	$451,000
Town of North East	12,400	18%	$99,000
Total Static Treatment Capital Costs			**$550,000**

Table 3.6 and 3.7 presents the costs attributed to the Town of North East concurrently form their sewer district including escalation values previously described. These are the costs applicable to the Town of North East only, not the total project costs, which have been presented in Tables 3.1 and 3.2.

Table 3.6
Water Resource Recovery System Construction Costs North East Only

Component	Construction Cost
Collection System	$958,000
Treatment System	$863,000
Construction Subtotal	$1,821,000
Escalated Total Construction Cost	**$1,990,000**

Table 3.7
Water Resource Recovery System Capital Costs Town of North East Only

Escalated Construction Costs	$1,990,000
Engineering Design (8%)	$155,000
Engineering Construction (12%)	$239,000
Local Counsel	$54,000
Bond Counsel	$35,000
Project Contingency (20%)	$398,000
Total Project Costs	$2,871,000
Financing Costs (2.94%)	$84,000
Total Project Costs Including Grants & Financing	**$2,955,000**

As shown in Table 3.7, the capital costs for the water resource recovery system are anticipated to be $2,955,000.

3.2 Operation & Maintenance Costs

The anticipated annual O&M cost for the sewer system is $144,000. The O&M costs include maintenance of the collection system, septic tank pumping and maintenance, operator labor, electricity for the water resource recovery system, laboratory services, contingency, and administrative costs. Refer to the Appendix D for a detailed breakdown of the O&M costs. Table 3.8 provides a breakdown of the O&M costs for each municipality based on the proportion of flows contributed from the Village and the Town.

Table 3.8
Operation & Maintenance Cost Breakdown by Municipality

Municipality	Flow Contribution (gpd)	Percentage of Total Flow	Portion of O&M Costs
Village of Millerton	57,600	82%	$118,100
Town of North East	12,400	18%	$25,900
		Total O&M Costs	**$144,000**

As shown in Table 3.8, the annual O&M costs for the Town of North East's portion of the sewer system are anticipated to be $25,900.

3.3 Initial Hook-up Costs

As previously described, a hook-up fee will be required to connect to the system but will be waived for parcels that connect during the initial construction period established by the Village and would apply to any connections made at a later date. This is described in Section 3.4 - Future Hook-up Costs & Changes in Use.

3.4 Future Hook-up Costs & Changes In Use

Initial connections to the system that occur after the initial construction period as established by the Village, and any other future individual connections to the sewer system will be allowed if sufficient capacity is available at the water resource recovery system, the collection system forcemains are within a reasonable distance of the parcel, and it is approved by the Village. The parcel owner will be responsible for paying all hook-up capital costs and a hook-up fee in accordance with the Village's proposed sewer use law.

The hook-up construction costs will be paid directly by the parcel who wishes to connect. The parcel owner will be responsible for:

- Easement recording and filing fees
- New septic tank, filter, effluent pump and lateral construction costs
- Effluent pump and control panel electrical costs
- Connection of the lateral to the force main
- All other work necessary to connect to the Village system

These costs are anticipated to be approximately $20,000 - $35,000 depending on the size of the septic tank and the distance from the force main.

Additionally, the Village will charge a hook-up fee for the design review and installation inspection to ensure compliance with Town and Village standards. This fee will be established by sewer use law.

If existing developed parcels change use to a restaurant, which require grease traps, a hook-up fee will be applied in accordance with the Town's proposed sewer use law. The fee will cover the cost of proposed system design review and installation inspection to ensure compliance with Town and Village standards. It will be the cost of the parcel owner

to re-route the building's sewer to a grease trap and the cost to install the grease trap and piping.

Approval to connect to the sewer system will be on a case-by-case basis. Large individual users (over 1,000 gpd) or significant developments or businesses may require expansion of the water resource recovery system depending on the remaining capacity of the system and the projected flows from the new facility. Expansion of the collection system forcemains may also be required depending on the location of the proposed facility relative to the existing collection system piping. The cost for expanding the system will be borne by the user, business owner, or developer.

Section 4
Project Financing

There are several financial grant or low-interest loan programs available which may assist with funding this project. The project has received a grant through the Dutchess County Municipal Investment Grant program. Additional grant funding to be pursued includes:

- Infrastructure Investment and Jobs Act of 2021 (P.L. 117-58 - –the Bipartisan Infrastructure Law (BIL))
- NYSEFC Clean Water State Revolving Fund, Water Infrastructure Improvement Act
- NYSDEC Water Quality Improvement Program
- USDA Rural Development Community Facilities Grant
- Empire State Development

The Project is currently listed on the FY 2023 EFC – CWSRF Intended Use Plan which provides CWSRF loan coverage for the balance of the project. However, the project has not scored high enough for hardship financing, and thus a market rate interest of 4% has been assumed for a loan period of 30 years. Potential grants in addition to the MIG grant have not been considered in the user rate calculations presented below; however, award of grants will lower the user costs and this MP&R will be updated accordingly if grants are received for this project. Table 4.1 presents the Town's anticipated costs for the sewer system.

Table 4.1
Water Resource Recovery System Capital Costs – Town Only

Total Project Costs	$2,871,000
Less Other Sources of Funding	
- Dutchess County Grant[1]	$35,000
Project Cost to be Financed	$2,836,000
Financing Costs (2.94%)	$83,000
Total Project Costs Including Financing	**$2,919,000**
Annual Debt Service – 30 years @ 4%	**$99,324**
Annual O&M Cost	**$25,900**
Total Annual Cost	**$125,244**

Note 1: 18% of the grant has been applied to the Town of Northeast

As indicated in Table 4.1, there are two components to the annual cost; the debt service on loans taken to finance the capital costs, and the operation and maintenance costs. The financing of the debt service costs are based on the number of Benefit Units (BU) per parcel. The assessments to pay the debt service costs are based on a reasonably estimated benefit associated with the availability of the sewer system based on the type of use. The Benefit Unit Schedule is presented in Table 4.2.

Table 4.2
Benefit Unit Schedule

Type of Usage	Benefit Units
Auto Dealer/Repair	1 per business plus 1 per 1,000 sq ft of building area[1]
Bank	1 per business plus 1 per 1,000 sq ft of building area[1]
Commercial uses not included elsewhere in this schedule	1 per business plus 1 per 1,000 sq ft of building area[1]
Dentist	1 per business plus 1 per chair
Doctor/Therapist/Vet	1 per business plus 1 per practitioner
Fitness Studio, Gym	1 per business plus 1 per 1,000 square feet of building area[1] plus 1 per two shower stalls
Gas station, convenience store/mini mart - No food preparation	1 per business plus 1 per 1,000 sq ft of building area[1]
+ Additional food preparation, up to 12 seats	2 per business
Hairdresser, salon, spa, nails, barbershop	1 per business plus 1 per station with sink plus 1 per 4 chairs without sink
Hotel, motel, inn	1 per establishment plus 1 per two rooms
Kennel/Groomers	1 per business plus 1 per two runs/cages/stations
Laundry Mat/Dry Cleaners	1 per business plus 1 per maching
Library, Museum, Cultural Building, Religious	1 per business plus 1 per 1,000 sq ft of building area[1], add for separate assembly hall
Office	1 per business plus 1 per 1,000 sq ft of building area[1]
Park	1 per parcel
+ Additional for Park facilities	1 per 1,000 square feet of building[1], 1 per each restroom facility, 1 per each two shower units, 5 per swimming pool
Residence (1 to 3 bedrooms)	1 per residence
2-family residence (1 to 3 bedrooms per unit)	2 per residence
3-family residence (1 to 3 bedrooms per unit)	3 per residence
Apartments (1 to 3 bedrooms)	1 per apartment
+ Additional bedrooms over allowance	0.5 per bedroom
Religious Building	1 per facility plus 1 per 100 seats, add for assembly hall
Restaurant, diner, café, bar, bakery	1 per establishment plus 1 per 6 seats
+ Grease trap cleanout charge	3 per cleanout
Retail	1 per business plus 1 per 1,000 sq ft of building area[1]
Supermarkets	1 per business plus 1 per 1,000 sq ft of building area[1]
Theater, Assembly Hall	1 per business plus 1 per 35 seats
Vacant land, parking lot, storage lot	1 per parcel

Note 1: Building area of first BU includes all buildings up to 1,000 sq ft. Additional area is rounded. Ex: An office of 600 sq ft will have 2 BUs. An office of 1,499 sqft will have 2 Bus. An office of 1,501 sq ft will have 3 BUs.
Note2: If more than one use is associated with an individual parcel, the Benefit Units will be aggregated.

There are a total of 67 benefit units allocated to the Town parcels. The estimated cost per benefit unit was established by dividing the total annual debt service ($99,324) by the total benefit units (67). This results in an estimated cost per benefit unit of $1,482. The benefit unit assignments and resulting estimated annual costs per parcel are presented in the Town of North East Parcel Summary Table in Appendix C.

Operation and maintenance costs are recovered based upon flow, with the assumption that water used becomes discharged as wastewater. In cases where parcels are not located on the Village water system, meters will be provided. Currently there are no residential properties or users within the proposed sewer district, however, this MP&R provides guidance on potential estimated residential user rates. Consistent with the Map & Plan prepared for the Village of Millerton, two different residential and commercial rates are used for O&M fees.

Commercial operation and maintenance fees are based upon a demand charge system where costs are based upon peak usage as this peak is what drives the cost of maintaining the treatment and collection system infrastructure. Unlike residential users, commercial users have a higher demand on the treatment system capacity including higher peak flows, higher strength wastewater concentrations and greater anticipated use of the system's capacity reserves. The peaking factor is established through the 10 States Standards (10 SS) peak hour peaking factor computational methodology. A population of 600 has been assumed for the wastewater service area resulting in a peak hour peaking factor of 4.0.

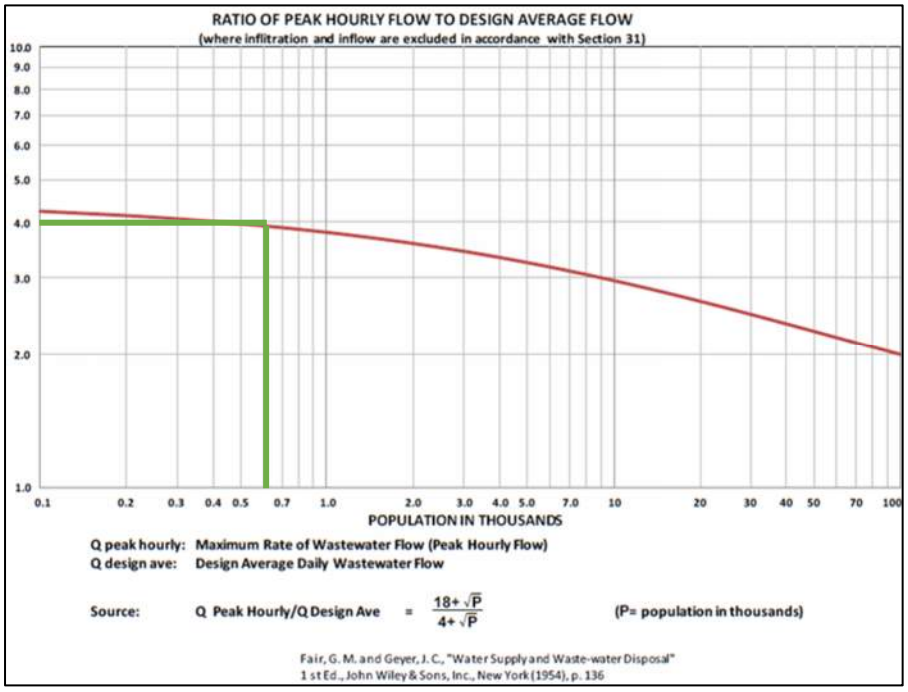

Figure 4.1
Ten States Standards Peak Hour Factor Calculation

Consistent with the Village of Millerton Map & Plan, the peak hourly usage per commercial user is anticipated to be 900 gpd (flow at peak hour), approximately four times the assumed average flow rate of 225 gpd as presented in the 2022 PER update. This results

in a commercial O&M Fee is $788/year ($65.67 per month) for average flows up to a flow of 225 gpd, consistent with the proposed commercial O&M fee within the Village of Millerton. Average flows are allotted in increments of 225 gpd based upon historical usage records. The allotment is provided in Appendix C. For actual billing purposes flows will be divided by 225 gpd and billed at the commercial rate. Flow beyond this volume will be charged at $5.70 per 1,000 gallons based upon the annual O&M cost of $144,000 divided by the total annual gallons (70,000 gpd x 365 days/1000 gallons). Billing and fees for flows over average usage increments will assessed on a quarterly basis. For example, a business using 45,000 gallons over a 90-day billing period would result in an average daily flow of 500 gpd. (45,000 gallons/90 days = 500 gpd). This is results in two increments of 225 gpd (225 gpd x 2 = 450 gpd), or $1,576 per year ($131.33 per month) The commercial parcel would be charged the standard commercial fee for three months at $131.33 per month ($394.00) plus the overage (45,000 – 40,500 = 4,500 gallons/1000 gallons = 4.5 x $5.70 = $25.65) for a total quarterly operation & maintenance fee of $419.65.

Potential estimated residential fees are based upon average daily flow, as residential flows are typical more consistently spread over the 24-hour period and represent average to low strength wastewater. Using a peaking factor of approximately 4 as the relationship between the peak hourly flows accommodated by the commercial fee, and the average flows as the basis for a residential fee, a residential O&M Fee would be $197/year ($16.41 per month) for up to a flow of 225 gpd which is consistent with typical single family water usage within the Village. Average flows are allotted in increments of 225 gpd, for instance a 2-family home is allotted 450 gpd, and 3-famiy home 675 gpd. The allotment is provided in Appendix C. Flow beyond this volume will be charged at $5.70 per 1,000 gallons as presented previously. Billing and fees for flows over average usage will assessed on a quarterly basis. For example, a 90-day billing period would result in a flow allocation of 20,250 gallons for a single family parcel (90 days x 225 gallons per day = 20,225 gallons). A single family parcel using 25,000 gallons during this period would be charged the standard fee for three months at $16.41 per month ($49.25) plus the overage (25,000 – 20,225 = 4,750 gallons/1000 gallons = 4.75 x $5.70 = $27.08) for a total quarterly operation & maintenance fee of $76.33.

4.1 Estimated First Year Annual Cost for a Typical Parcel

The typical parcel in the Town Sewer District is a small commercial user with 2 BUs and an average flow of 225 gpd. The estimated first year cost for the typical parcel is based on the debt service payment plus the operation and maintenance costs as shown in Table 4.3. Thus, the anticipated maximum first year cost for the typical parcel is $2,304, or $192 per month.

Table 4.3
Anticipated Example User Fees

User	Annual Capital Cost (BU)	Annual O&M Cost @225 gpd	Total Annual Cost	Total Monthly Cost
Small Commercial (2 BU)	$2,965	$788	$3,753	**$316.50**
Single Family Residential (1 BU)	$1,482	$197	$1,679	**$139.95**

4.2 Affordability

The United States Environmental Protection Agency (USEPA) published guidance documents which outlined methods to determine what would be affordable for a wastewater project within a particular community. These guidance documents identified screening mechanisms to determine a projects' affordability. The Residential Indicator (RI), compares the average annual per household cost within a special district to the median household income. When the RI is determined to be 2% or greater of the median household income, the project is anticipated to cause an economic hardship on the community, and deemed not affordable.

The median household income data for the Town of North East was documented to be $67,760 for 2020. The resulting RI = $68,577 x 2%= $1,371. The proposed annual residential cost of $1,679 is above this value. In order to address this grant funding will be pursued.

The RI method for affordability was used to evaluate the affordability for commercial properties located inside the sewer district since the RI method is not appropriate for commercial affordability analysis

Based upon the current usage, commercial properties currently using tight tank wastewater systems with weekly or biweekly pumping will not experience a significant change to their annual expenditure; dry-use properties used primarily for retail space will experience an increase in annual expenses. However, the increased annual expenses associated with sewer service do not outweigh the potential financial benefits that property owners can realize due to possible change of use and the ability to expand their existing rentable square footage.

Additionally, Towns proposing to issue debt to finance the establishment, extension of or increase in the maximum amount to be expended for a sewer district are required to apply for the permission of the Office of the State Comptroller (OSC) if the cost to the typical property is above the OSC-calculated average estimated cost threshold.

The Comptroller's regulations (Part 85) outline the steps related to applications seeking permission of the Comptroller, including Town Sewer Districts. Even when OSC permission is not required, certified copies of documents must still be filed with the OSC office.

Districts which are at or below the average estimated cost thresholds do not require permission of the State Comptroller. However, if debt is being issued, a certified copy of the notice of hearing for the district must be sent to the OSC office.

For 2022, the maximum annual cost to a typical property, generally considered a single family residence is $706. The proposed annual residential cost of $1,679 is above this value. In order to address this grant funding will be pursued. However, the OSC maximum cost excludes hook-up costs which have been included in the presented costs. The exclusion of the estimated hook-up costs, estimated to be a minimum of $20,000, results in an annual reduction of $680 ($20,000 @4% over 30-years) lowering annual residential cost to $999, still greater than the OSC maximum cost of $706. OSC permission will be required.

In order to provide a system that is affordable, additional grant funding for this project is desired. Table 4.4 presents costs with 50% grant funding.

Table 4.4
Water Resource Recovery System Capital Costs – Town Only
50% Grant Funding

Total Project Costs	$2,871,000
Less Other Sources of Funding	
- Dutchess County Grant[1]	$35,000
- Additional Grant Funding	$1,435,000
Project Cost to be Financed	$1,401,000
Financing Costs (2.94%)	$41,000
Total Project Costs Including Financing	**$1,442,000**
Annual Debt Service – 30 years @ 4%	**$49,066**
Annual O&M Cost	**$25,900**
Total Annual Cost	**$74,966**

Note 1: 18% of the grant has been applied to the Town of Northeast

Section 5
Legal Considerations

The Town must follow the legal procedures outlined by New York State (NYS) Town Law in order to establish the Town of North East Sewer System. Articles 12 (§ 190 et seq.) and 12-A (§ 209 et seq.) of Town Law set forth two methods for establishing a town improvement district: (1) by the submission to the town board of a valid petition requesting the establishment or extension of the district (Article 12) ; and (2) by town board motion, subject to permissive referendum requirements (Article 12-A). Town Counsel should advise on the path forward and the requirements of each.

The Comptroller's approval is required for the establishment of a town district if two factors are present: (1) debt is to be issued or assumed (see Town Law § 198[12]) by the town for the improvement, and (2) the "cost of the district or extension" to the "typical property" or, if different, the "typical one or two family home" as stated in the notice of hearing on the establishment or extension, is above the average annual estimated cost threshold for similar types of districts as may be computed by the State Comptroller (Town Law §§ 194[6], 209[f]).

Currently, the maximum cost noted by the State Comptroller is $706 per year. However, Costs, for this purpose, do not include hook-up fees. In general, hook-up charges are the typically the responsibility of the owner of each property connecting to the system. In this case the work is being completed by the Town. Clarification with the State Comptroller will be made to confirm if approval is needed, or if when hook-ups fees are considered, the cost per residential property is determined to be affordable.

Appendix C provides a listing of the Town Parcel IDs for properties proposed to be within the sewer service area. These properties are required to be reported to the New York State Comptroller’s office.

The following items identify the regulatory requirements that must be considered during the creation of a Town Sewer District.

- State Environmental Quality Review Act (SEQRA) compliance
- State Historic Preservation Office (SHPO) Compliance
- State Pollutant Discharge Elimination System (SPDES) Permitting
- Other construction-related permitting

5.1 State Environmental Quality Review Act

SEQRA is required by the NYSDEC to consider environmental factors early in the planning stages for projects undertaken by local, regional and state agencies. The SEQRA process is intended to identify potential impacts to the environment that would result from proceeding with the project as planned. The Village would be designated as the lead agency.

5.2 State Historic Preservation Office

Submission of the plan to the State Historic Preservation Office is a significant part of the initial SEQRA process to identify areas where sites of historical significance could potentially be affected by the implementation of the proposed plan. Should the SEQRA review not result in a negative determination, the project plan and associated environmental review process will need to be re-evaluated and additional environmental impact studies and reporting may be required.

5.3 State Pollutant Discharge Elimination System

A State Pollutant Discharge Elimination System (SPDES) permit is required to regulate all point source storm water and wastewater discharges to both groundwater and surface waters under New York State law. The SPDES permit is to be filed with the New York State Department of Environmental Conservation as part of the Engineering Design Report.

5.4 Other Construction Related Permits

Based on the locations where the proposed sanitary infrastructure will be constructed, it is anticipated that highway ROW work permits may be required from New York State DOT. Permitting from the New York State Department of Environmental Conservation (NYSDEC) may also be necessary in areas where infrastructure may encroach on classified wet lands and or require significant dewatering. Storm Water Pollution Prevention Plans (SWPPP) may also be required.

Additional permitting requirements may become necessary following the SEQRA compliance portion of this project.

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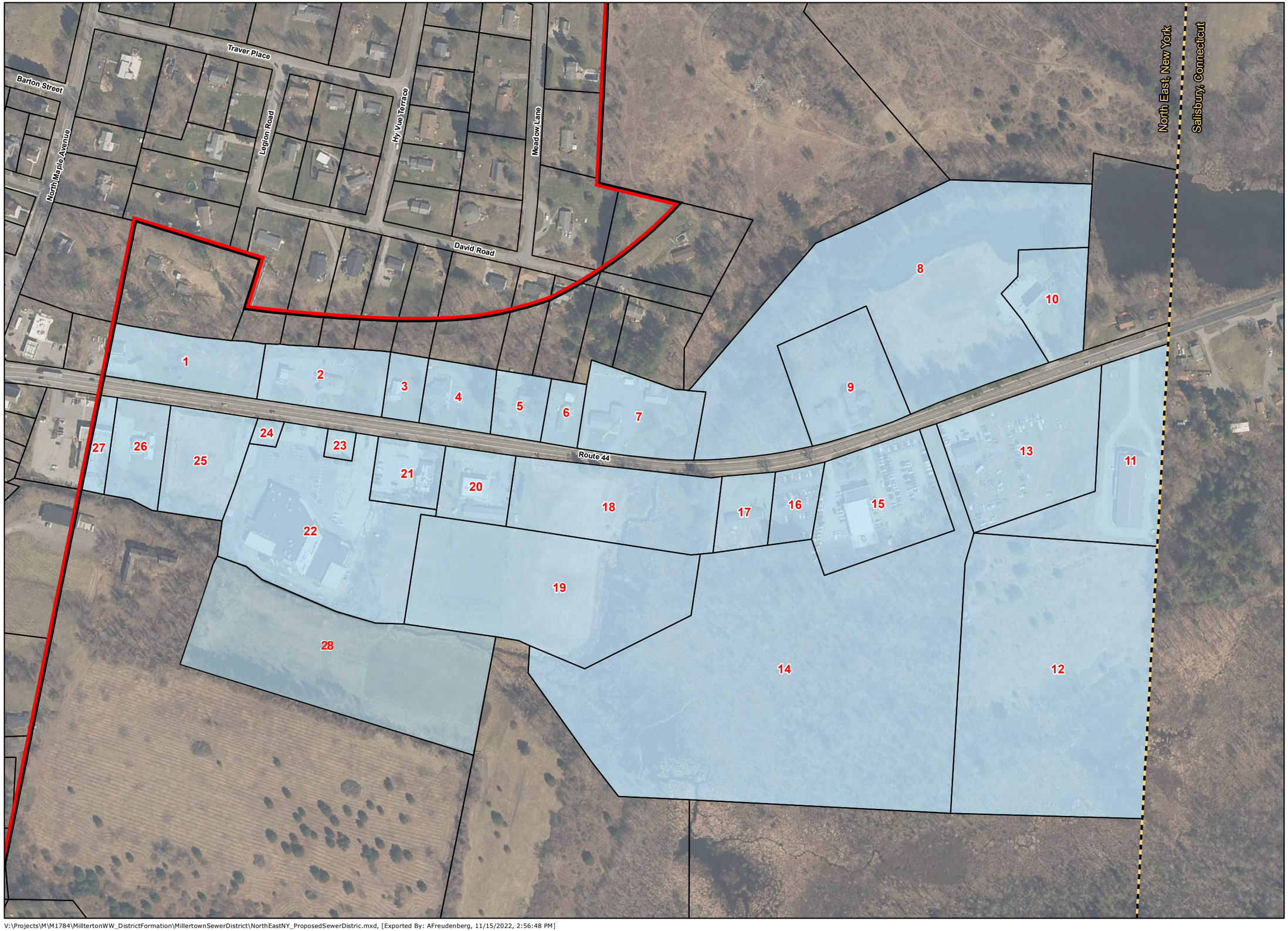
APPENDIX A
Town of North East Sewer District Map



TOWN OF NORTH EAST SEWER DISTRICT

LEGEND

- Sewer District
- Parcel Boundary
- Village Boundary
- Town Boundary

LOCUS MAP

N

0 125 250

Feet

1 in = 250 ft

NOTES

Ortho provided by its.ny.gov (2020).

Town of North East Sewer District Map, Plan, and Report

November 2022

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V:\Projects\M\M1784\MilltertonWW_DistrictFormation\MillertownSewerDistrict\NorthEastNY_ProposedSewerDistric.mxd, [Exported By: AFreudenberg, 11/15/2022, 2:56:48 PM]

M-1784

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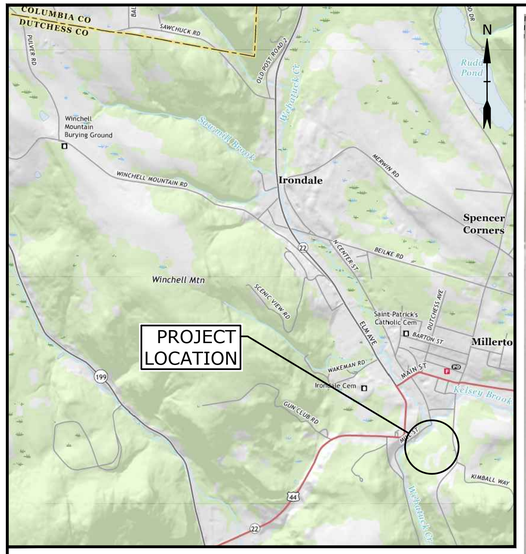
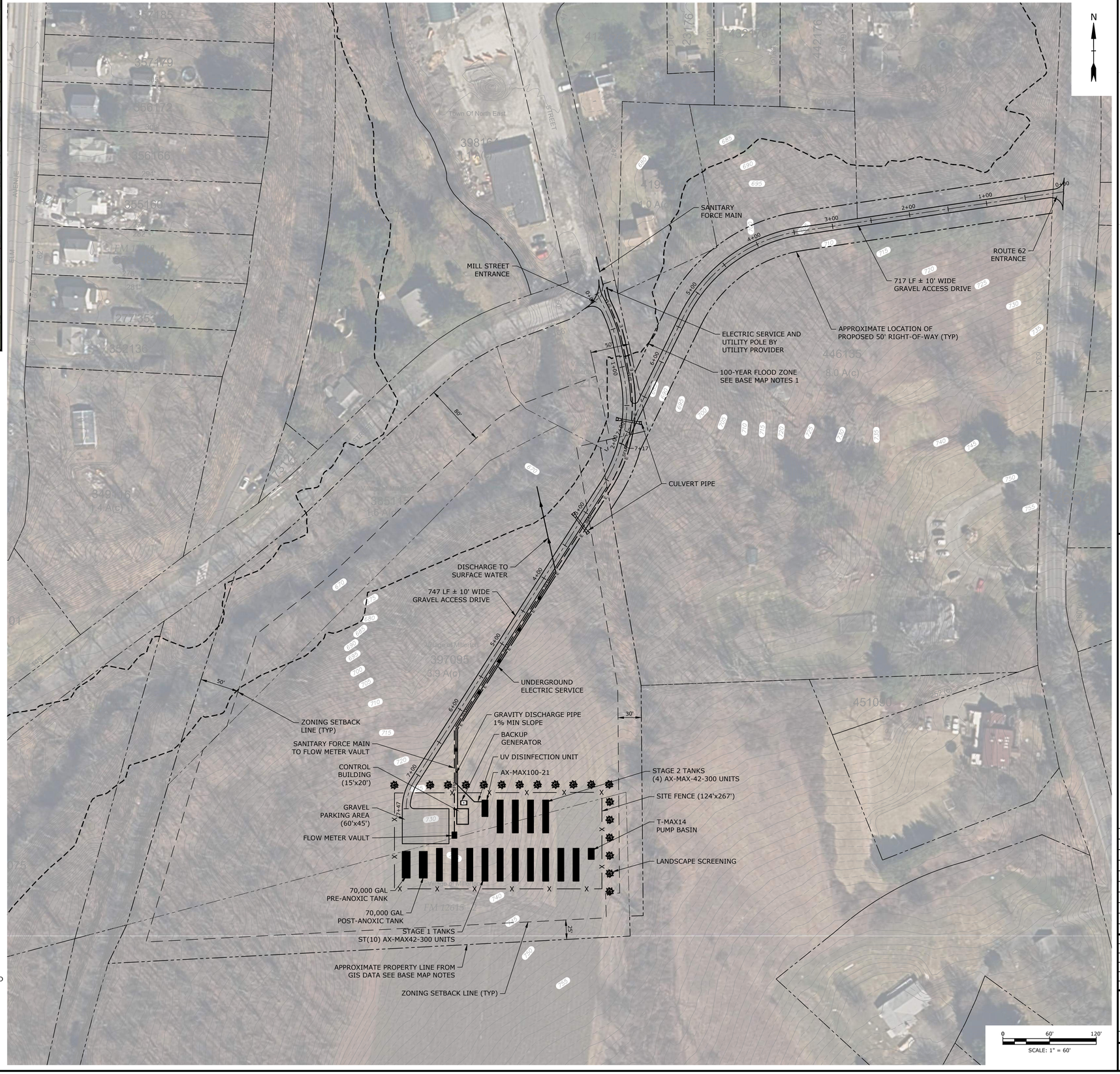
APPENDIX B
Water Resource Recovery System Conceptual Site Plan



LOCATION MAP
SCALE: 1" = 2000'

SOURCE: U.S.G.S. 7.5' TOPOGRAPHIC QUADRANGLE
MILLERTON, NY, CT 2019



BASE PLAN NOTES

1. THE EXISTING CONDITIONS INFORMATION SHOWN ON THE DRAWINGS IS BASED ON THE FOLLOWING:
   - NYSGIS CLEARINGHOUSE ORTHO IMAGERY DATED 2021
   - TOWN OF NORTHEAST GIS PARCEL DATA DATED 2019
   - LIMITS OF BORDERING LAND SUBJECT TO FLOODING (BLSF), THE 100-YEAR FLOOD ZONE, ARE BASED ON THE FEMA FLOOD INSURANCE STUDY (FIS) FOR VILLAGE OF MILLERTON, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NUMBER 36027C0209E, EFFECTIVE 05/02/2012
2. UTILITY LOCATIONS SHOWN ARE NOT SHOWN. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS IS NOT GUARANTEED. DETERMINE THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES WHICH MAY AFFECT CONSTRUCTION OPERATIONS.
3. THE DRAWINGS ARE BASED ON THE FOLLOWING DATUMS: HORIZONTAL NY83-EF ; VERTICAL-NAVD 88
4. THE EXISTING CONDITIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING CONDITIONS.
5. THE PROPERTY LINES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND ARE NOT BASED ON DEED OR PLAN RESEARCH.

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CONCEPT PLAN NOT FOR CONSTRUCTION

Sewer District Formation

Village of Millerton

Millerton, NY

SERVICES PROVIDED IN NEW YORK BY T&B ENGINEERING AND LANDSCAPE ARCHITECTURE, P.C.

UNAUTHORIZED ALTERNATIONS TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

MARK	DATE	DESCRIPTION

PROJECT NO:	M1784-09
DATE:	05/25/2022
FILE:	M1784-09 SITE PLAN.dwg
DRAWN BY:	RLS
DESIGNED/CHECKED BY:	RLS/BKN
APPROVED BY:	BKN

CONCEPT SITE PLAN

SCALE: AS SHOWN

C-101
SHEET 1 OF 1

Last Saved: 5/31/2022
Plotted On:May 31, 2022-1:39pm By: AMcCarthy
Tighe & Bond:J:\M\M1784 Millerton\009 - WW District Formation\Drawings\AutoCAD\Sheet\M1784-09 SITE PLAN.dwg

APPENDIX C
Town of North East Sewer District Parcel Summary Table

Town of North East
Map, Plan & Report
Appendix C

Annual Cost per Benefit Unit: $1,482
Annual Commercial O&M Cost per 225 gpd Increment: $788

ID	Tax Parcel ID No.	Owner Name(s)	BU Class	No. Com. EDUs	Allocated Flow (gpd)	Annual Capital Cost (Benefit Unit Cost)	Annual O&M Cost	Anticipated Annual Cost
1	7271-00-564263-0000	Route 44 Property Holdings	Gas Station	2	225	$2,965	$788	$3,753
2	7271-00-596259-0000	Robert D Trotta	Gas Station	2	225	$2,965	$788	$3,753
3	7271-00-622253-0000	Dr Ron W Hayes	Office	2	225	$2,965	$788	$3,753
4	7271-00-632250-0000	Hendrick Properties LLC	Bank	2	225	$2,965	$788	$3,753
5	7271-00-646248-0000	All Four Seasons Property and	Hair Salon	3	450	$4,447	$1,576	$6,023
6	7271-00-658247-0000	149 Route 44 LLC	Laundry/Dry Cleaning	3	450	$4,447	$1,576	$6,023
7	7271-00-682247-0000	American Legion	Cultural	2	225	$2,965	$788	$3,753
8	7271-00-769284-0000	Robert D Trotta	Vacant Land	1	0	$1,482	$0	$1,482
9	7271-00-715245-0000	GRJH Inc.	Office > 1,000	2	225	$2,965	$788	$3,753
10	7271-00-790279-0000	Caravan Real Estate LLC	Kennel	3	450	$4,447	$1,576	$6,023
11	7271-00-809228-0000	Kenneth Thompson LLC	Resturant/Retail/Misc. Commercial/Gym	7	675	$10,377	$2,364	$12,741
12	7271-00-790170-0000	Quinmill Properties Inc.	Vacant Land	1	0	$1,482	$0	$1,482
13	7271-00-775238-0000	Basil Gabriel	Auto Dealer/Repair	2	225	$2,965	$788	$3,753
14	7271-00-738177-0000	Ryan J Boyles	Vacant Land	1	0	$1,482	$0	$1,482
15	7271-00-739225-0000	182 Route 44 East LLC	Auto Dealer/Repair	2	225	$2,965	$788	$3,753
16	7271-00-715223-0000	182 Route 44 East LLC	Vacant Land	1	0	$1,482	$0	$1,482
17	7271-00-701220-0000	David M Underhill & Mary J Underhill	Retail	2	225	$2,965	$788	$3,753
18	7271-00-664222-0000	Robert D Trotta	Vacant Land	1	0	$1,482	$0	$1,482
19	7271-00-650200-0000	NEKDR	Vacant Land	1	0	$1,482	$0	$1,482
20	7271-00-623228-0000	Robert D Trotta	nt/Retail/Misc. Commerci	7	900	$10,377	$3,152	$13,529
21	7271-00-610232-0000	Robert D Trotta	Resturant	4	675	$5,930	$2,364	$8,294
22	7271-00-612237-0000	Millerton Super Inc.	Supermarket	5	675	$7,412	$2,364	$9,776
23	7271-00-585220-0000	Millerton Super Inc.	Retail > 1,000	3	450	$4,447	$1,576	$6,023
24	7271-00-578242-0000	Millerton Super Inc.	Vacant Land	1	0	$1,482	$0	$1,482
25	7271-00-552232-0000	Robert D Trotta	Vacant Land	1	0	$1,482	$0	$1,482
26	7271-00-534237-0000	Elizabeth's Fine Jewelry Ltd.	Retail	2	225	$2,965	$788	$3,753
27	7271-00-524328-0000	Naomi Djanogly Properties LLC	Retail >1,000	3	225	$4,447	$788	$5,235
28	7271-00-591180-0000	Millerton Super Inc.	Vacant Land	1	0	$1,482	$0	$1,482

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APPENDIX D
Town of North East
Opinion of
Probable Cost

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
STEP Collection System
Town of Northeast, NY
Map, Plan & Report
Appendix D

Item Description	Unit Cost	Units	Quantity	Cost
STEP Collection System				**$ 912,000**
Pump out Existing Septic Tanks and Abandon in Place	$750	EA	17	$ 12,800
STEP System Installation (1,000 Gallon Tank)	$9,200	EA	14	$ 128,800
STEP System Installation (1,500 Gallon Tank)	$12,800	EA	3	$ 38,400
STEP System Installation (4,000 Gallon Tank)	$14,800	EA	1	$ 14,800
Sewer Meter	$3,000	EA	11	$ 33,000
Service Lateral Installation (1-1/2" HDPE)	$4,000	EA	18	$ 72,000
Restoration for STEP System/Service Lateral Installation	$3,400	EA	18	$ 61,200
2"-4" HDPE Forcemain Installation (Directional Drilling)	$52	LF	5250	$ 273,000
Excavation and Connection at Junctions	$5,700	EA	12	$ 68,400
Air Releases	$4,000	EA	2	$ 8,000
Clean-outs	$2,300	EA	20	$ 46,000
Pavement Repairs	$2,300	EA	4	$ 9,200
Lawn Restoration	$12	SY	4200	$ 50,400
Clearing and Grubbing in Right-of-Ways	$13,600	Acre	1	$ 13,600
NYSDOT Crossing	$6,800	EA	2	$ 13,600
Mobilization/Demobilization	5%	LS	1	$ 42,200
Traffic Control	3%	LS	1	$ 26,600
			Total Collection System Cost	**$ 912,000**
			Increased Force Main Diameter Cost Allocation:	$46,000.00
			Total Collection System Capital Cost:	**$ 958,000**

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
Eastimated Hook-Up Fees
Town of North East, NY
Map, Plan & Report - Appendix D

Item Description	Unit Cost	Units	Quantity	Cost
Estimated Small Capacity Hook Up Fee				**$ 21,000**
Easement Preparation & Filing	$300	EA	1	$ 300
Pump out Existing Septic Tanks and Abandon in Place	$800	EA	1	$ 800
STEP System Installation (1,000 Gallon Tank)	$9,200	EA	1	$ 9,200
Service Lateral Installation (1-1/2" HDPE)	$2,500	EA	1	$ 2,500
Restoration for STEP System/Service Lateral Installation	$1,500	EA	1	$ 1,500
Excavation and Connection at Junctions	$5,700	EA	1	$ 5,700
Mobilization/Demobilization	5%	LS	1	$ 1,000
Estimated Large Capacity Hook Up Fee				**$ 34,800**
Easement Preparation & Filing	$300	EA	1	$ 300
Pump out Existing Septic Tanks and Abandon in Place	$800	EA	1	$ 800
STEP System Installation (4,000 Gallon Tank)	$14,800	EA	1	$ 14,800
Service Lateral Installation (1-1/2" HDPE)	$6,800	EA	1	$ 6,800
Restoration for STEP System/Service Lateral Installation	$4,800	EA	1	$ 4,800
Excavation and Connection at Junctions	$5,700	EA	1	$ 5,700
Mobilization/Demobilization	5%	LS	1	$ 1,600

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ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST **Village & Town Treatment Costs**
Biofiltration System with Surface Return **Static Costs**
Village & Town Treatment Costs
Appendix D - Map, Plan & Report

Item Description	Unit Cost	Units	Quantity	Cost
Site Work				**$ 83,000**
Clearing and Grubbing	$13,600	Acre	1.5	$ 20,400
Brush Hogging	$800	Acre	2.0	$ 1,600
Rough Grading for Access Road	$2,900	EA	1	$ 2,900
Prepare and Roll Subbase for Access Road	$3	SY	800	$ 2,400
Stabilization Fabric for Access Road	$2	SY	800	$ 1,600
Gravel and Compaction for Access Road	$10	SY	800	$ 8,000
Culvert for Access Road	$1,700	EA	2	$ 3,400
Secondary Access R.O.W.	$1	SF	16000	$ 9,600
Rough Grading for Secondary Access Road	$4,000	EA	1	$ 4,000
Prepare and Roll Subbase for Secondary Access Road	$3	SY	1067	$ 3,200
Stabilization Fabric for Secondary Access Road	$2	SY	1067	$ 2,200
Gravel and Compaction for Secondary Access Road	$10	SY	1067	$ 10,700
Culvert for Secondary Access Road	$1,700	EA	1	$ 1,700
Final Grading, Mulch & Seed	$6	SY	1111	$ 6,700
Mobilization/Demobilization	5%	LS	1	$ 4,000
Electrical Service				**$ 21,000**
Utility Pole Installation	$1,200	EA	8	$ 9,600
Excavation for Underground Electrical Utilities	$5	LF	200	$ 1,000
Bedding for Underground Conduits	$7	LF	200	$ 1,400
Direct Burial of PVC Conduits	$7	LF	200	$ 1,400
Service Entrance	$5,700	LS	1	$ 5,700
Mobilization/Demobilization	5%	LS	1	$ 1,000
Biofiltration Resource Recovery System				**$ 3,773,000**
Treatment System Tanks and Componenents	$1,940,900	LS	1	$ 1,940,900
Treatment System Ancillary Equipment	$48,400	LS	1	$ 48,400
UV Disinfection System	$35,000	LS	1	$ 35,000
Treatment System Installation	30%	LS	1	$ 612,100
Material Shipping	$201,000	LS	1	$ 201,000
Contractor's Overhead & Profit on Treatment System	15%	LS	1	$ 306,100
Treatment System Electrical Work	5%	LS	1	$ 102,000
Treatment Mobilization/Demobilization	5%	LS	1	$ 137,800
Treatment Distribution Piping & Manifold	$16,000	LS	1	$ 16,000
Telemetry Control Panel	$76,000	LS	1	$ 76,000
Instrumentation/Flow Meter	$24,000	LS	1	$ 24,000
Control Building	$85,000	LS	1	$ 85,000
Control Building & Instrumentation Installation	30%	LS	1	$ 55,500
Backup Generator	$34,000	EA	1	$ 34,000
Generator & Control Building Electrical Work	50%	LS	1	$ 60,000
Contractor's Overhead & Profit on Control Instrumentation	15%	LS	1	$ 15,000
Commissioning and Operator Training	$7,500	LS	1	$ 7,500
Control Building Mobilization/Demobilization	5%	LS	1	$ 16,700
Surface Return				**$ 56,000**
Clearing and Grubbing	$13,600	Acre	0.5	$ 6,800
Trenching and Backfill	$8	LF	400	$ 3,200
Gravity Outfall Piping	$15	LF	400	$ 6,000
Pipe Bedding	$8	LF	400	$ 3,200
Concrete Outfall Structure	$22,700	EA	1	$ 22,700
Rip Rap	$115	SY	33	$ 3,900
Final Grading, Mulch & Seed	$6	SY	100	$ 600
Dewatering, Erosion Protection	$6,800	EA	1	$ 6,800
Mobilization/Demobilization	5%	LS	1	$ 2,700
			Construction Total	**$ 3,933,000**
			Static Costs	*$ 550,000*
			Flow Proportional Costs	*$ 3,383,000*

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ENGINEER'S OPINION OF PROBABLE ANNUAL OPERATION & MAINTENANCE COST
Biofiltration System with Surface Return - Town & Village
Village of Millerton & Town of Northeast
Appendix D

Item Description	Unit Cost	Units	Quantity	Cost
STEP Collection System				**$ 42,300**
Proactive System Maintenance	$75	Hour	104	$ 7,800
Reactive System Maintenance	$75	Hour	64	$ 4,800
STEP Tank Pumping	$750	Each	24	$ 17,700
Equipment Repair and Replacement	$12,000	Year	1	$ 12,000
Biofiltration Resource Recovery System				**$ 61,200**
Regular System Maintenance	$75	Hour	364	$ 27,300
Emergency Maintenance	$75	Hour	26	$ 2,000
Energy Consumption (Treatment System)	$0.10	kWh	171882	$ 17,200
Energy Consumption (Control Building)	$0.10	kWh	7300	$ 800
Cellular Service for Communication	$40	Month	12	$ 500
Treatment Tank Pumping	$700	Year	1	$ 700
Textile Replacement	$2,500	Year	1	$ 2,500
Pump Repair and Replacement	$3,900	Year	1	$ 3,900
Float Replacement	$500	Year	1	$ 500
Flow Meter Calibration	$290	Year	1	$ 300
Sampling Supplies	$600	Year	1	$ 600
Laboratory Fees	$200	Month	12	$ 2,400
Misc. Maintenance Supplies	$1,000	Year	1	$ 1,000
Mowing Around Treatment System	$50	Hour	30	$ 1,500
Surface Return				**$ 1,000**
Cleaning/Maintenance	$1,000	Year	1	$ 1,000
Administration				**$ 15,000**
Administration, Billing & Accounting	$12,000	Year	1	$ 15,000
			Annual O&M Subtotal	*$ 119,500*
			Contingency (20%)	$ 24,000
			Total Estimated Annual O&M Cost	**$ 144,000**