

Map and Plan

North Chautauqua Lake Sewer District Wastewater Treatment Plant Expansion Project

February 2025

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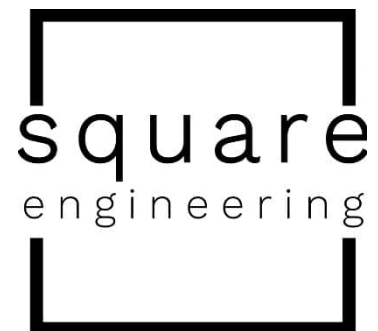


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1. Background and Existing Conditions

The North Chautauqua Lake Sewer District (NCLSD) owns and operates a wastewater treatment plant (WWTP) and sanitary sewer collection system that serves users in the Village of Mayville and Town of Chautauqua. Several treatment process components at the WWTP are reaching the end of their useful lives or exceed rated capacities. The influent pump station, primary and secondary clarifiers, RBCs, and digesters are all in need of improvements. Additionally, the WWTP has exceeded its permitted capacities and operators have observed sewage backups on several occasions.

In order to review and analyze improvement alternatives, the NCLSD completed a detailed engineering evaluation in February of 2025 titled *“North Chautauqua Lake Sewer District Wastewater Treatment Plant Capacity Evaluation Preliminary Engineering Report (PER)”*. The evaluation detailed the condition and capacity of each treatment unit process and recommended improvements based on anticipated future conditions. This Map and Plan was prepared as a result of the findings, recommendations, and detailed evaluations outlined in the PER. The improvements included within this Map and Plan summarize PER recommendations.

This Map and Plan has been prepared to support the implementation of a capital improvement project within a sewer district in accordance with the requirements outlined in New York State County Law.

2. Service Area and Equivalent Dwelling Units

2.1. Service Area

The project area is located along the northwestern shoreline area of Chautauqua Lake and spans the Village of Mayville and portions of the Town of Chautauqua, Chautauqua County, New York. An existing WWTP site plan and an overview of the areas served by the WWTP are included in Figure 1. The proposed project will benefit all users whose waste is eventually treated by the NCLSD WWTP located in Mayville, NY.

2.2. Equivalent Dwelling Units

An equivalent dwelling unit (EDU) is the unit to which a community charges a customer for utility service. An EDU generally equates all customers to a typical single-family home, with one single family being assessed one EDU. The NCLSD contains 1,312 existing EDU's that utilize the NCLSD Mayville WWTP discussed in this report. Additionally, the service area of the NCLSD is being expanded to include an additional 91 EDU's located within the Town of Chautauqua Sewer District No. 1 Extension that will also use the NCLSD Mayville WWTP. Therefore, this project will benefit an estimated 1,403 EDU's upon implementation.

3. Proposed Improvements

A detailed analysis of improvement recommendations have been included in February 2025 “*North Chautauqua Lake Sewer District Wastewater Treatment Plant Capacity Evaluation Preliminary Engineering Report (PER)*.” General improvement recommendations included under this project are bulleted below. These improvements will upgrade antiquated or deficient WWTP infrastructure and increase the capacity of the WWTP to accommodate current and project future conditions. As noted in the PER, if anticipated future conditions change or inadequate funding is received, these improvements should be re-evaluated before significant financial expenditures are realized. A high-level plan of improvement recommendations are included in Figure 2. Improvements are projected to generally include:

- Influent metering upgrades.
- Replacement of the main pumping station.
- Construction of an activated sludge treatment process (Sequencing Batch Reactor) to replace the current RBC process.
- Demolition or repurpose of primary clarifiers as pre-SBR equalization tanks.
- Conversion of secondary clarifiers into post-SBR equalization tanks.
- Rehabilitation of existing digester tankage into aerobic sludge holding tanks.
- Construction of various digester building upgrades.
- Construction of a new maintenance and garage facility.
- Upgrading the secondary effluent pump station to increase capacity.
- Installation of an additional tertiary filter.
- Upgrading the UV disinfection system to increase capacity.

4. Estimated Project Cost and Financing

4.1. Project Capital Cost Estimate

The estimated probable capital cost for the proposed facilities is detailed in Appendix A. The maximum amount to be expended for this project is \$10,147,000.

4.2. Estimated Debt Service Cost and Annual User Cost Impacts

The proposed project will not be affordable to residents without the County obtaining significant grant funding. Therefore, the County intends to finance the project through NYSEFC and will seek various potential grants. Various possible financing scenarios for this project are summarized in Appendix B. The estimated annual debt service for the proposed project will vary depending on the actual funding received. However, based on four plausible funding scenarios, debt service costs from this project are estimated to range from \$60 to \$241 per EDU per year. This will result in an anticipated future annual user cost of \$676 to \$857 per EDU per year.

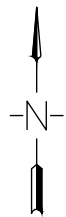
5. Implementation

This report should be publicly presented to NCLSD customers. Should the NCLSD and the County decide to proceed with the capital improvement project, the implementation process will generally include the following steps:

- NCLSD Board accepts Map and Plan and recommends project to County Legislature
- County Legislature holds a Public Hearing to discuss Map and Plan
- County Legislature completes project environmental review (SEQR)
- County Legislature accepts Map and Plan and moves to proceed with project
- Adoption of a Bond Resolution
- Finalization of project funding package
- Completion of project design
- Public bidding
- Construction

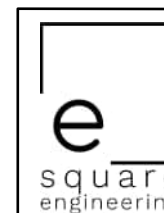
Figure 1

Project Location Map



**NCLSD WWTP
EXISTING SITE PLAN**

SCALE: 1" = 60'

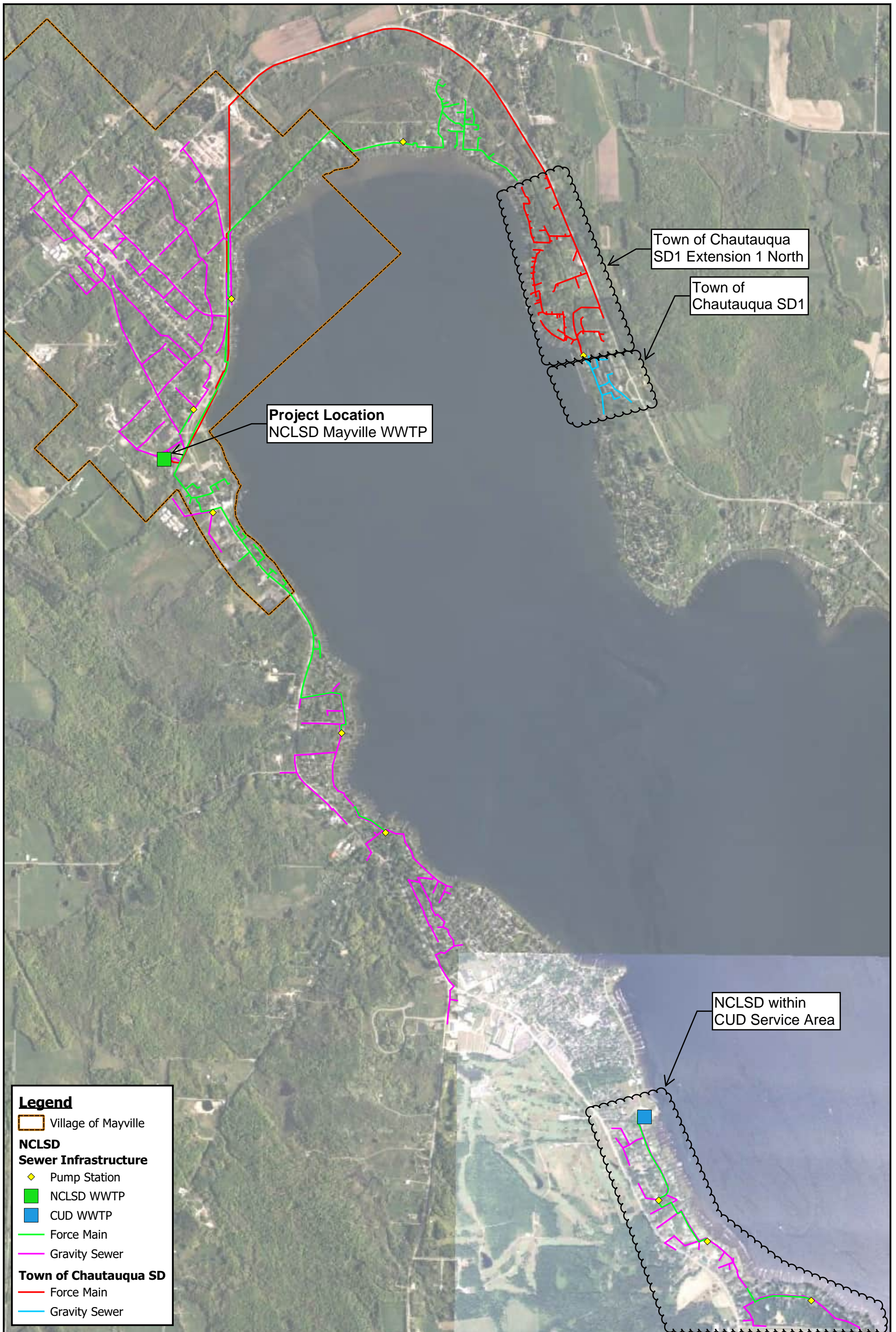


NORTH CHAUTAUQUA LAKE SEWER DISTRICT
WWTP EXPANSION PROJECT

**NCLSD WWTP
EXISTING SITE PLAN**

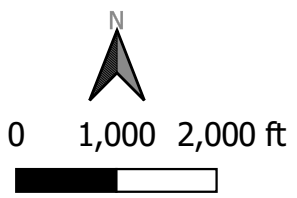
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FIGURE 1A



Legend

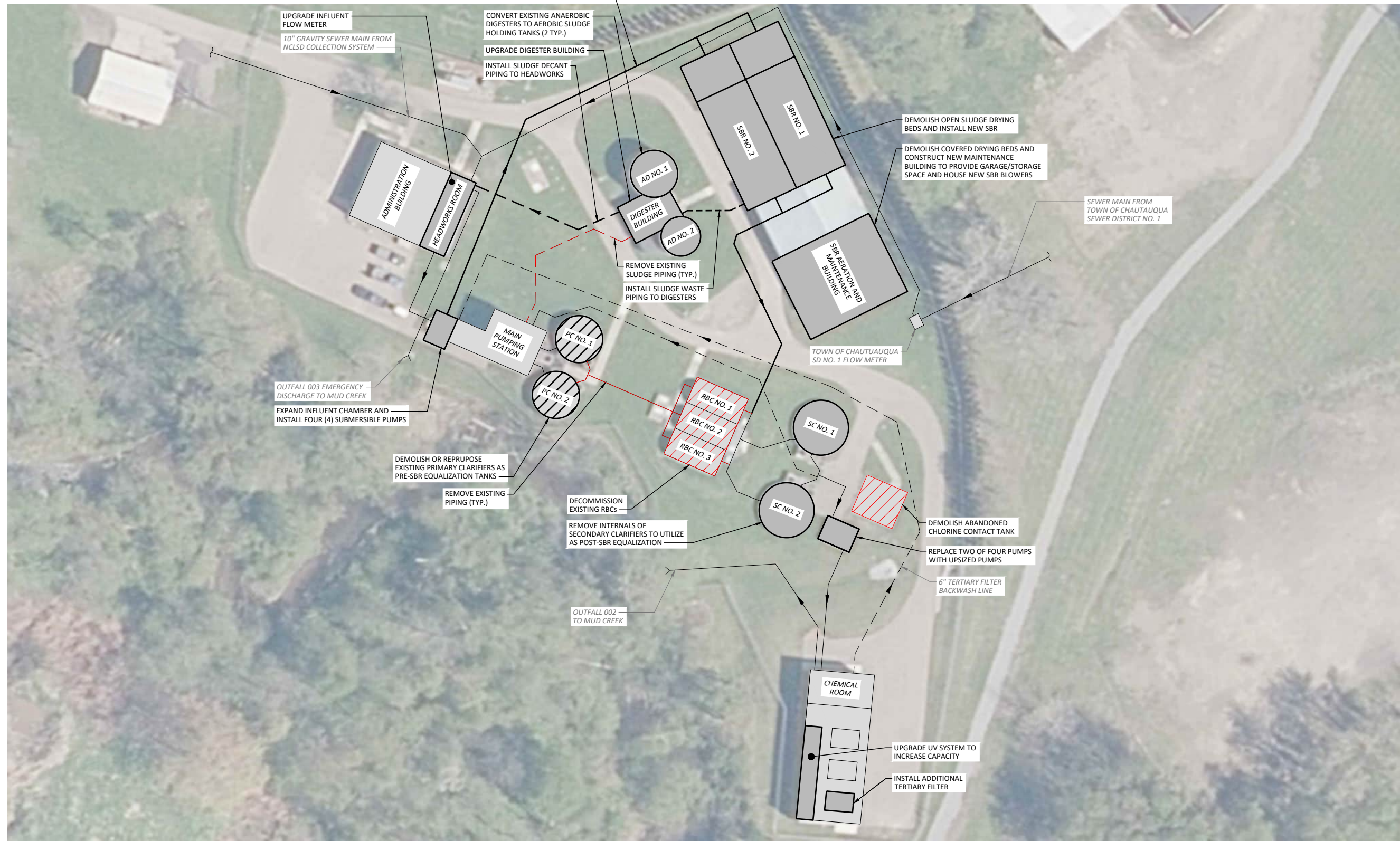
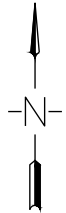
- Village of Mayville
- NCLSD Sewer Infrastructure**
- ◆ Pump Station
- NCLSD WWTP
- CUD WWTP
- Force Main
- Gravity Sewer
- Town of Chautauqua SD**
- Force Main
- Gravity Sewer



North Chautauqua Lake Sewer District
Figure 1B
NCLSD Overview Map
 Chautauqua County, New York 12/18/2024
 Project No. 124.001

Figure 2

Proposed Improvements Plan



PROPOSED IMPROVEMENTS PLAN

SCALE: 1" = 60'



NORTH CHAUTAUQUA LAKE SEWER DISTRICT
WWTP EXPANSION PROJECT

PROPOSED IMPROVEMENTS PLAN

Sheet No: **FIGURE 2**

Appendix A

Estimate of Probable Project Cost

Item	Description	QTY	Unit	Unit Cost	Total	
Headworks						
1	Flow Meter	1	LS	\$25,000	\$25,000	
Main Pumping Station						
1	Four Submersible Pumps	1	LS	\$200,000	\$200,000	
2	Wet Well Expansion	1	LS	\$100,000	\$100,000	
SBR						
1	Concrete Tankage	1	LS	\$1,250,000	\$1,250,000	
2	SBR Equipment and Installation	1	LS	\$1,700,000	\$1,700,000	
Sludge Holding Tank						
1	Concrete Tank Rehab and Misc. Improv.	2	EA	\$50,000	\$100,000	
2	Blowers, Diffusers, Piping, etc.	2	EA	\$200,000	\$400,000	
3	Digester Building Upgrades	1	LS	\$100,000	\$100,000	
Pole Barn Building						
1	Additional Storage Space Improvements	1	LS	\$200,000	\$200,000	
Secondary Effluent Pump Station						
1	Upsize Two Existing Submersible Pumps	1	LS	\$100,000	\$100,000	
Tertiary Filter and UV Improvements						
1	New Additional Tertiary Filter	1	LS	\$475,000	\$475,000	
1	UV Disinfection Improvements	1	LS	\$100,000	\$100,000	
Equalization Improvements						
1	Equalization Provisions	1	LS	\$200,000	\$200,000	
Miscellaneous						
1	Electrical and Controls	1	LS	\$600,000	\$600,000	
2	HVAC	1	LS	\$100,000	\$100,000	
4	Site Work and Site Piping	1	LS	\$300,000	\$300,000	
Subtotal of Items					\$5,950,000	
				Inflation to Construction	5%	\$298,000
				Contractor General Conditions	5%	\$298,000
Construction Subtotal					\$6,546,000	
				Contingency	30%	\$1,963,800
				Engineering/Legal/Administrative	25%	\$1,636,500
ESTIMATED TOTAL PROJECT COST					\$10,147,000	

Appendix B

Preliminary Project Plan of Finance

Total Estimated Project Cost	\$10,147,000			
	Scenario No. 1: EFC Hardship Loan & 75% Grant	Scenario No. 2: EFC Hardship Loan & 50% Grant	Scenario No. 3: EFC Hardship Loan & 25% Grant	Scenario No. 4: EFC Hardship Loan & 0% Grant
Interest Rate	0.00%	0.00%	0.00%	0.00%
Term Length (Years)	30	30	30	30
Percent Grant	75%	50%	25%	0%
Total Grant	\$7,610,250	\$5,073,500	\$2,536,750	\$0
Total Loan	\$2,536,750	\$5,073,500	\$7,610,250	\$10,147,000
Annualized Project Cost	\$84,558	\$169,117	\$253,675	\$338,233
Number of Town SD1 (to NCLSD WWTP) EDUs	174	174	174	174
Number of NCLSD (to NCLSD WWTP) EDUs	1,138	1,138	1,138	1,138
Number of Additional EDUs to NCLSD WWTP	91	91	91	91
Total Number of Debt Paying EDUs	1,403	1,403	1,403	1,403
Total Annual Increase per NCLSD and Town EDU	\$60	\$121	\$181	\$241
Est. Ex. Average Annual Sewer Cost per NCLSD and Town SD1 EDU	\$540	\$540	\$540	\$540
Projected Annual Debt Increase per EDU from I/I Project	\$76	\$76	\$76	\$76
Est. Future Total Annual Sewer Cost per NCLSD and Town SD1 EDU	\$676	\$737	\$797	\$857