

# Map, Plan and Report

*for*

***Town of Clarendon  
Water District Consolidation  
Orleans County, New York***

July 16, 2019

**Map, Plan and Report**

**For**

**Town of Clarendon Water District Consolidation Water District #9 and #9A  
Orleans County, New York**

**Municipal Solutions, Inc.**

**July 8, 2019**

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**APPENDICES**

Appendix A: Water District Mapping and Description

## **I. PURPOSE OF MAP, PLAN, AND REPORT**

The Town of Clarendon has commissioned Municipal Solutions, Inc. to complete a Map, Plan, and Report for the consolidation of the Town's Water District 9 and Water District No. 9, Extension No. 1.

The Town of Clarendon Consolidated Water District shall be created to serve 28 parcels along the north and south side of Powerline Road and Holley Byron Road (NYS Route 237) just east from the intersection of Lake Road and Powerline Road to the intersection of Powerline Road and Holley Byron Road (NYS Route 237) and In a southerly direction along both sides of Holley Byron Road (NYS Route 237) between Powerline Road and 600' southwest of McAllister Drive. Refer to Appendix A for the project location maps and detailed boundary description.

The purpose of this Map, Plan, and Report is to:

- Identify the areas to be initially serviced and establish need for service
- Determine the estimated demands
- Identify the municipal water system's capability to meet the additional demands
- Identify the cost
- Identify the cost to the user on an Equivalent Dwelling Unit (EDU) basis

## **II. EXISTING TOWN OF CLARENDON WATER SYSTEM DESCRIPTION**

The Town of Clarendon currently maintains two public water supply districts along Powerline Road and a section of Holley Byron Road (NYS Route 237): Town of Clarendon Water District No. 9 and Town of Clarendon Water District No. 9, Extension No. 1. The water districts are interconnected and both areas receive water purchased from the Monroe County Water Authority (MCWA).

### **A. Water District No. 9**

Water District No. 9 consists of 2,805 LF of 8-inch diameter PVC water main and hydrants, valves, meters and associated fixtures. The improvements are designed to provide 100 gallons of water per person per day for domestic and commercial uses and to provide fire protection meeting Insurance Services Office (ISO) standards. The District is designed to provide 500 gallons per minute in addition to the peak hourly demands.

### **B. Water District No. 9, Extension No.1**

The Water District No. 9, Extension No. 1 consists of 1,700 LF of 8-inch diameter PVC water main and hydrants, valves, meters and associated fixtures. The improvements are designed to provide 100 gallons of water per person per day for domestic and commercial uses and to provide fire protection meeting Insurance Services Office (ISO) standards. The District is designed to provide 500 gallons per minute in addition to the peak hourly demands.

### **C. Town of Clarendon Physical Inventory of Assets**

The physical inventory of the combined water system consists of 4,505 LF of water mains, hydrants, valves, meters and associated fixtures, hardware and plumbing. The replacement value, accounting for inflation and increased labor costs for the two water districts is approximately \$275,000.

**D. Equivalent Dwelling Units**

Existing facilities and structures within the Town of Clarendon service area for the above water districts were inventoried from available information including tax records and water billings. Provided water billing records were analyzed to determine the total consumption as well as identify the average daily single-family residential water usage. The average single-family residential water usage shall characterize an Equivalent Dwelling Unit (EDU).

The Equivalent Dwelling Unit (EDU) concept relates all water system usage proportionately to the equivalent of a typical single-family residence. The use of EDUs standardizes the way the total estimated first year service charge is calculated to provide comparable results and consistency in review of the project.

As previously described, one EDU is an average value for the water usage expected from one single-family house. An analysis of the residential usage for the two water service areas provided an average daily demand of nearly 147 gallons per day, or 53,655 gallons per year. From analysis of the aforementioned billing records, there are approximately 22 residential users (EDUs) along with 4 residential and 2 agricultural parcels not currently connected to the system. Therefore, the total number of parcels in the water service area is 28. The table below lists the number of EDUs for each water district.

**Table 1: Number of EDUs for each water district.**

Water District	Number of EDUs				Number of EDUs Connected
	Residential	Commercial or Institutional	Exempt Agricultural Parcels	Total	
Water Dist. #9	17	0	1	18	14
Water Dist #9a	9	0	1	10	8
<b>Total</b>	26	0	2	28	22

**E. Town of Clarendon Current Rate Structure**

The rate structure is based on quarterly billing and the amount of consumption during the billing cycle. The current operation and maintenance rate structure is based upon a base maintenance fee per quarter and a rate of \$3.90 per thousand gallons of water consumed.

Based upon current billing records, the average residential customer in the Town of Clarendon utilizes nearly 53,655 gallons of water annually. Utilizing this volume and a combined water rate of \$3.90/thousand and a \$18.90 quarterly maintenance fee, the average annual water charge incurred by individual residential users is \$284.85 for each district.

**Table 2: Average annual residential O&M cost by water district per EDU.**

Water District	O&M Charge
WD #9	\$284.85
WD #9a	\$284.85

Review of the Town's water budget shows that the existing revenues for the two districts are adequate to cover the Town's annual operation and maintenance costs and annually add to a system repair and reserve fund to make necessary improvements to the main water transmission line as future repairs become necessary. In 2018, the Town had combined revenues of \$59,822.59 and expenditures of \$19,889.63. Of this amount \$42,725.81 consisted of a one-time transfer from other funds. Without this one-time transfer revenues totaled \$17,096.78 resulting in a deficit of \$2,792.85 in regular operating revenues vs.

expenditures. The Town's 2019 budget projects combined revenues and expenses of \$14,214.91. With mid-year projections for revenues to outpace expenditures.

With consolidation, the Town will have decreased administrative expenses as a result of not having to separate WD #9 and #9a expenses and revenue ledgers and there could be decreased water testing costs resulting in somewhat decreased expenditures as a result of the formation of the consolidated water district.

#### **F. Town of Clarendon Physical Inventory of Assets**

The Town's water source is surface water drawn from Lake Ontario, pumped, filtered and treated by the Monroe County Water Authority (MCWA) at the Shoremont Water Treatment Plant, in the Town of Greece prior to distribution. All water is purchased from the MCWA and enters the Town through a 12" transmission main on Jackson Road. The Town of Clarendon Water Department adds additional chlorine as necessary to assure free chlorine residual at all times prior to the water entering the Town's 150,000 gallon elevated storage tank located at Route 31A west of the hamlet. The consolidated water district will consist of 4,505 LF of 8-inch diameter PVC water main and hydrants, valves, meters and associated fixtures

#### **G. Town of Clarendon Water District Fiscal Management**

Each district is presently a separate entity with each having its own revenue source, budget, and bonding. Each of the water districts are assessed the same water rate.

### **III. NEED FOR WATER DISTRICT CONSOLIDATION**

The Town of Clarendon desires to consolidate water districts #9 and Water District No. 9, Extension No. 1. in an attempt to reduce operating costs and develop a more efficient method of governing said districts. The water department tracks and charges their daily activities, replacement parts, and equipment to the appropriate district. This is a principal reason for pursuing a consolidation as it is cumbersome for the Town's employees to keep track of the hours and resources they devote to each district so that their time is billed appropriately. By consolidating the districts, management of the districts is made easier and the Town will likely see a decrease in administrative costs for managing the districts. Consolidation of these districts would simplify all administrative aspects of the delivery of water to said districts. It would also provide the ability to simplify the budgeting, reporting, and accountability.

### **IV. ESTIMATED WATER DEMANDS**

The proposed water district consolidation will incorporate 28 parcels into the Town of Clarendon Consolidated Water District. These parcels consist of residential use with two exempted agricultural parcels. The average daily demand for the water system, calculated in the Town's map, plan and reports, is 8,600 gallons per day.

### **V. SYSTEM CAPACITY EVALUATION**

The Town water users are currently serviced by the two water districts and have been historically served without creating capacity concerns or issues. However, the narrative below shall investigate the available capacity in the consolidated Water District per the Recommended Standards for Water Works with respect to serving all water users under a variety of conditions. All components of the water system shall be evaluated water supply, piping conveyance capacity, and storage capacity.

**A. Treated Water Supply**

The consolidated Water District receives its water supply from the Monroe County Water Authority's Shoremont Water Treatment Plant. The Shoremont Treatment Plant employs the direct filtration process using Lake Ontario as its source of supply. The main components the plant are the raw water intake, pumping and transmission, chemical addition, rapid mixing, contact basins, filtration, residuals disposal, clearwell storage, and high lift pumping.

Water is pumped from the treatment plants to storage facilities and customers in the Water system service area through approximately 3,300 miles of transmission and distribution mains, ranging in diameter from 2" to 60". The water system operates 51 pumping stations to provide the pressure to distribute water to storage facilities and customers. MCWA's Shoremont Water Treatment Plant can produce up to 140 million gallons a day

As is readily evident, suitable production volume is sufficient for growth within the Town and no improvements are needed.

**B. Water Distribution System**

The consolidated water district will consist of 4,505 LF of 8-inch diameter PVC water main and hydrants, valves, meters and associated fixtures. The watermain has been sized to provide domestic demands as well as fire flow volumes. The 8-inch diameter watermain allows for suitable conveyance of all peak instantaneous water demands. Currently, the system provides fire flow volumes ranging from 1,262 to 1,381 gpm. The fire protection volumes are to remain unchanged with the consolidation of the water districts; therefore, the water distribution system is sufficiently sized for providing the peak instantaneous water demands and the fire protection volumes. The water distribution system meets required regulatory standards and no improvements are needed.

**C. Storage**

The combined water district relies upon a 150,000 gallon elevated water storage tank, located on Route 31A west of the hamlet, to supply fire protection volumes and average daily demand volume to the water district. As indicated, the total tank volumes servicing the consolidated area must store adequate fire flow volumes as well as average daily demands.

The water system has been designed to provide 100 gallons of water per person per day for domestic and commercial uses and to provide fire protection meeting Insurance Service Office (ISO) standards.

**Average Daily Demand:**

The average daily demand calculated from the Town's consumption data is 8,300 gallons per day.

There is sufficient excess storage to allow for growth of the Town's water system and no improvements are needed.

**VI. CONSOLIDATED WATER DISTRICT****A. Consolidation Alternatives**

As previously described, the Town consolidation study area consists of the two interconnected water districts: Water District #9 and Water District #9a Extension.

**B. Consolidated Water Rates**

As demonstrated previously, the water districts have the same operation and maintenance water rate structure. Traditionally the water rates cover the water districts budgetary expenses. Revenues are raised to offset daily operation and maintenance and provide for reserve funds to meet future system needs and to manage the current assets of the system

Asset management is the key. It will allow the Town to maintain an even rate structure over time as well as ensuring financial solvency to the greatest extent possible.

Currently, assets are maintained by either utilizing properly allocated capital reserves or simply budgeting for said items a year or two in advance. While last minute budgeting can work, it is typically only successful with smaller system improvements or it is possible only at the expense of other budgeted items. It should also be noted that many funding agencies are beginning to require asset management of all short-lived assets, assets having a useful life of 15 to 20 years, as a condition to accepting any funding.

**VII. CONSOLIDATION DISTRICT DESCRIPTION AND PROJECT COSTS****A. Legal Description**

The Town of Clarendon Consolidated Water District shall be created to serve 28 parcels of land located in the Town along the north and south side of Powerline Road and NYS Route 237 just east from the intersection of Lake Road and Powerline Road to the intersection of Powerline Road and Holley Byron Road (NYS Route 237) and In a southerly direction along both sides of Holley Byron Road (NYS Route 237) between Powerline Road and 600' southwest of McAllister Drive.

The consolidated legal description includes 28 parcels of land located in the Town as graphically shown on the mapping provided in Appendix A. A legal description has also been provided in Appendix A for use by the Town Board. The consolidation of the two water districts into one is an administrative action requiring approval by the Clarendon Town Board.

**B. No Cost Consolidation**

Infrastructure for the water district consolidation already exists throughout the two water districts. As investigated previously, the existing water system infrastructure has sufficient supply, piping conveyance capacity, and storage capacity to support the water district consolidation and will not require any improvements. Since current water rates are the same in both Districts and are sufficient in order to cover operation and maintenance in each district, then consolidation of Water District #9 and Water District #9, Extension No. 1 will be at no additional cost to the water users. Consolidation of the Districts can be completed without infrastructure improvements by simply wrapping a common district boundary to exactly encompass the current district boundaries.

**C. Operation and Maintenance Water Rate****1. Consolidation Efficiencies – Administrative Time Savings**

As previously discussed, the Town will see savings from a system administrative perspective. However, savings from these administrative efficiencies are not enough to result in significant decreases in expenditures for operation of the system.

## 2. Consolidated Water Rate

The two interconnected districts are assessed the same operation and maintenance water rate. Since rates are sufficient to cover operation and maintenance, no further increases are needed for the consolidation. Outstanding annual debt service expense incurred to pay for the original installation of the respective water districts will continue to be paid by the water users in each district as they were originally incurred and assessed. Any new improvements or repairs necessary after the new consolidated district has been formed will be shared by all parcels and charged to all users in the new consolidated district equally.

### D. Consolidation Recommendation

The Town of Clarendon water system began with the creation of Water District #9 and due to the need for residents in the Water District Extension 9 No. 1 to remove themselves from a failing private small water line and inadequate wells the two interconnected districts were formed. Each district was created to service its own respective area. The two Districts are interconnected to the degree that they function as one. Administratively, consolidation provides the ability to operate as a single water district. Presently, they actually function as one. The potential for savings is in the daily reporting and the division of charges according to district. For these reasons, it is recommended that the Town of Clarendon consolidate Water Districts #9 and Water District Extension 9 No. 1.

There are some specific benefits to consolidation:

1. The Town can move forward and plan the future of the water service as a single unified approach.
2. Administering a single district provides for uniform customer service.
3. Consolidation provides the opportunity to develop a rate structure that allows the Town to continue to adequately maintain and operate its water system.
4. Consolidation provides the opportunity, through the budget process, to develop an asset management plan for the entire service area. This allows for timely upkeep and replacement of components in the system for best operational results and minimum emergency repairs and disruptions.
5. Consolidation provides for the development of short and long term capital programs for improvement for the entire consolidated system alleviating the fund balance issues with separate districts and allowing for planned growth and expansion opportunities.
6. Consolidation provides for the sustainability of the system by providing a system-wide approach to service delivery.

## VIII. CONCLUSION

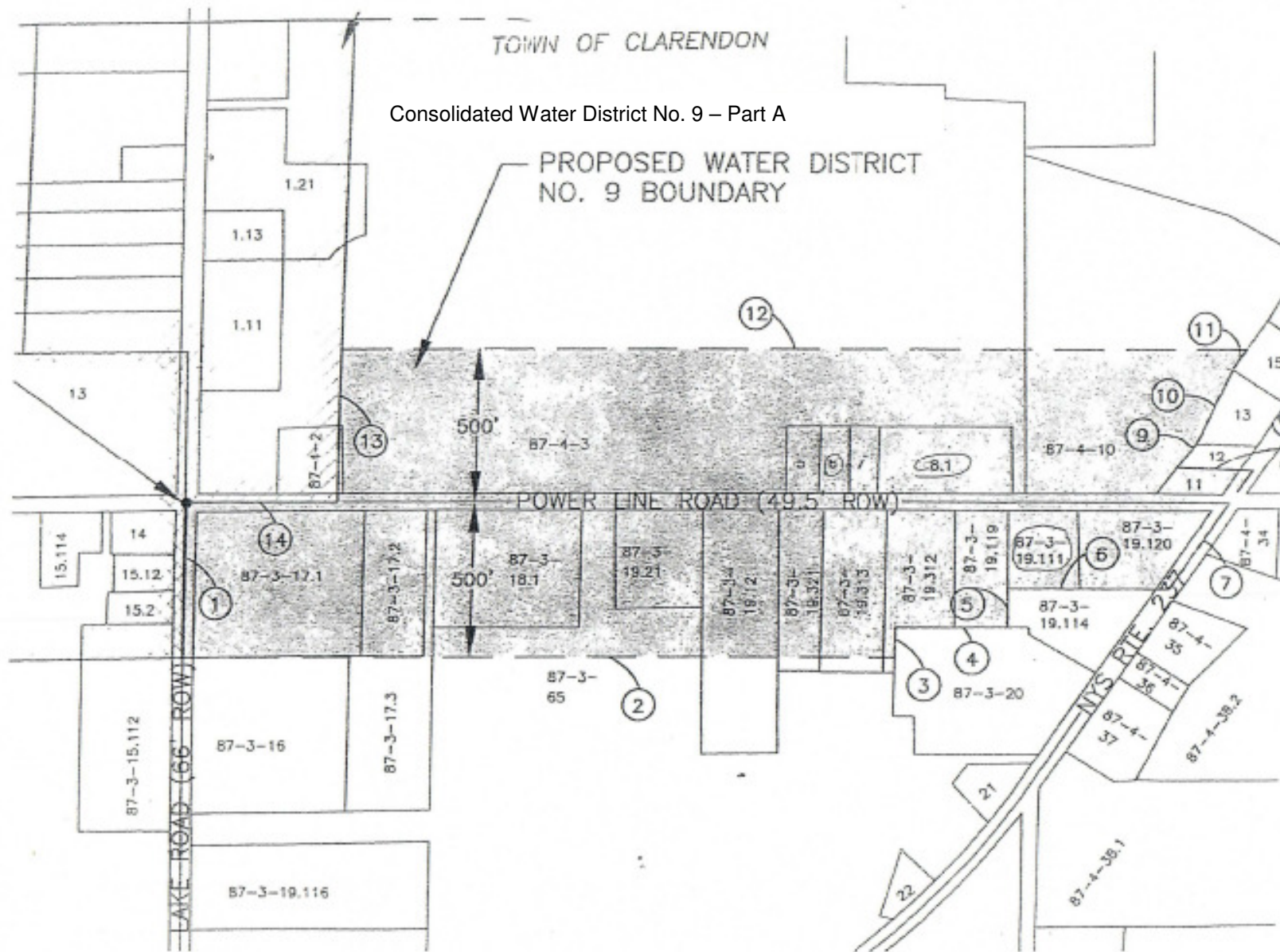
As previously discussed, consolidation of the districts is recommended as the districts are already interconnected and administratively, consolidation allows the districts to operate as a single water unified water district. At a minimum, the Town should Continue its past practice of maintaining a rate structure for the consolidated water district that allows the Town to adequately cover its operating expenditures as well as annually budgeting for a transfer to an established capital reserve fund.

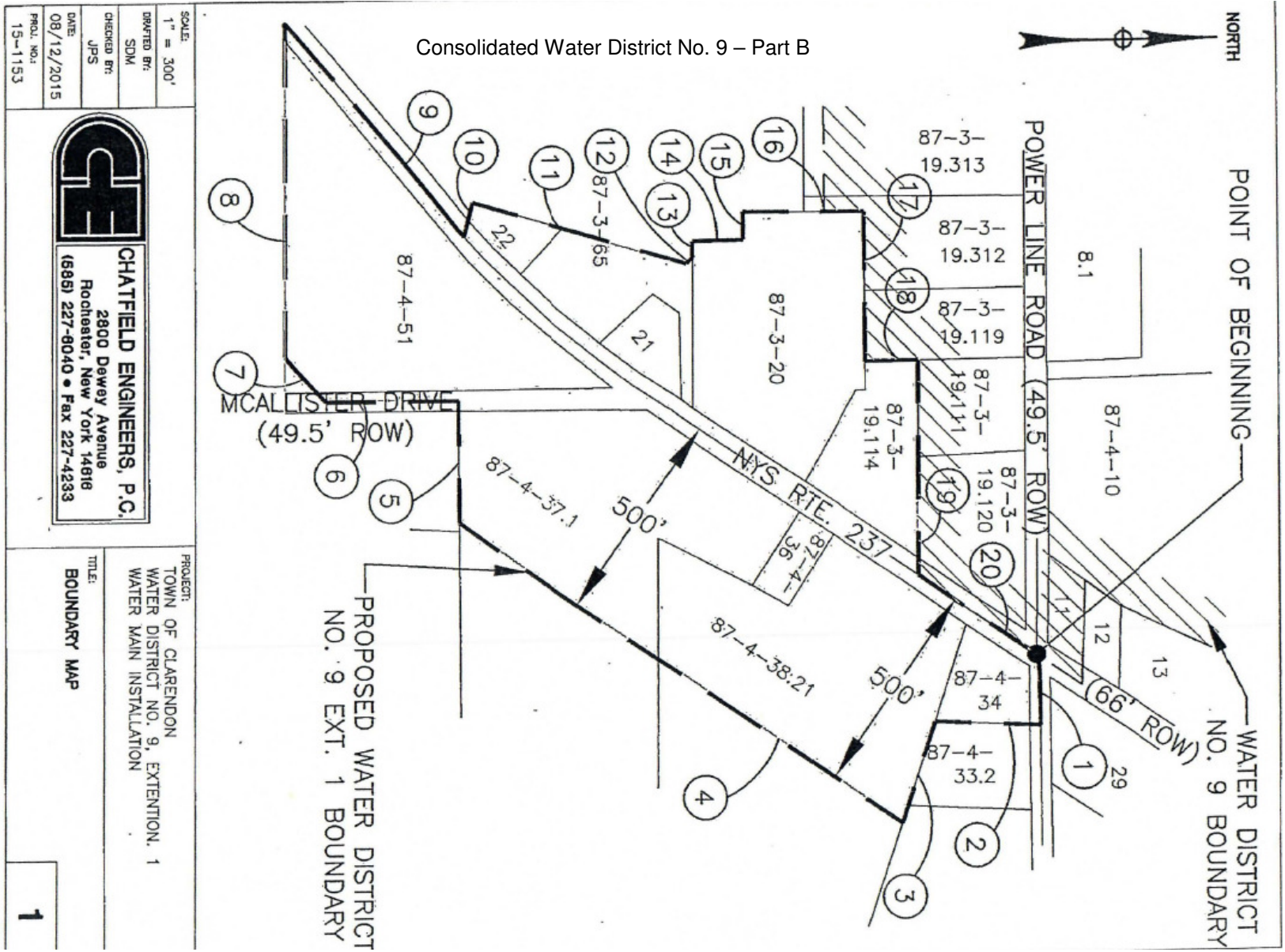
However, it is recommended that the Town implement a formalized asset management plan to plan for future water tank painting and repairs, pump replacements and waterline breaks. An asset management plan allows for financial security and solvency for the Town water districts. Additionally, asset management provides planning/budgeting benefits as it provides the ability to deal with unforeseen maintenance items. Asset management provides a buffer for the budget as unforeseen maintenance items can be dealt with utilizing the short-term asset reserve and not at the expense of a previously budgeted item.



APPENDIX A

WATER DISTRICT MAPPING AND DESCRIPTION





## New Consolidated Water District No. 9 Project Boundary

The establishment of the District is hereby approved, as hereinafter described and said District shall be designated and known as Consolidated Water District No. 9 in the Town of Clarendon and shall be bounded and described as follows:

The boundaries of the proposed District are as follows: Beginning at a point, said point being the centerline intersection of the Lake Road and Powerline Road; thence

1. Southerly, 500 feet more or less, along the centerline of Lake Road, also being the easterly boundary of the Town of Clarendon Water District No.6 to a point; thence
2. Easterly, 2262.68 feet more or less, along a line parallel to and 500 feet southerly of the centerline of Powerline Road to a point, said point being the westerly boundary of Tax Account No. 87.-3-20; thence
3. Northerly, 95 feet more or less, along the westerly boundary of Tax Account No. 87.-3-20 to a point, said point being a northwesterly property comer of Tax Account No. 87.-3-20; thence
4. Easterly, 350 feet more or less, along the northerly boundary of Tax Account No. 87.-3-20 to a point, said point being a southeasterly property comer of Tax Account No. 87.-3-19.119; thence
5. Northerly, 124 feet more or less, along the easterly property line of Tax Account No. 87.-3-19.119 to a point, said point being a northwesterly property comer of Tax Account No. 87.-3-19.114; thence
6. Easterly, 494.78 feet more or less, along the northerly property line of Tax Account No. 87. -3 -19 .114 to a point, said point being the centerline of New York State Route 237; thence
7. Northeasterly, 434.68 feet more or less along the centerline of New York State Route 237 to a point, said point being the easterly extension of northerly boundary of Tax Account No. 87.-4-11; thence
8. Westerly, 233 feet more or less, along the northerly property line of Tax Account No. 87.-4-11 to a point, said point being a northwesterly property comer of Tax Account No. 87.-4-11; thence
9. Northeasterly, 101 feet more or less, along the westerly property line of Tax Account No. 87.-4-12 to a point, said point being a northwesterly property comer of Tax Account No. 87.-4-12; thence
10. Northeasterly, 263 feet more or less, along the westerly property line of Tax Account No. 87.-4-13 to a point, said

- point being a northwesterly property corner of Tax Account No. 87.-4-15.1; thence
11. Northeasterly, 72 feet more or less, along the westerly property line of Tax Account No. 87.-4-15.1 to a point, said point being 500 feet northerly of the centerline of Powerline Road; thence
  12. Westerly, 2863 feet more or less along a line parallel to and 500 feet northerly of Powerline Road to a point, said point being the easterly boundary of the Clarendon Water District No.8 said point also being 500 feet easterly of the center of Lake Road; thence
  13. Southerly, 500 feet more or less, along the boundary of the Clarendon Water District No.8 to a point, said point being 500 feet more or less, east from the centerline intersection of Powerline Road and Lake Road; thence
  14. Westerly, 500 feet more or less, along the southerly boundary of the Clarendon Water District No.8 and centerline of Powerline Road to a point, said point being the Point of Beginning.
  15. Beginning at a point, said point being the centerline intersection of Power Line Road (49.5' r.o.w.) and New York State Route 237 (66' r.o.w.); thence
  16. Easterly, 165 feet more or less, along the centerline of Power Line Road, to a point, said point being the northerly extension of the easterly property line of tax account no. 87-4-34; thence
  17. Southerly, 248 feet more or less, along the easterly property line of tax account no. 87-4-34 to a point, said point being along the northerly property line of tax account no. 87-4-38.21; thence
  18. Easterly, 248 feet more or less, along the northerly boundary of tax account no. 87-4-38.21 to a point, said point being 500 feet from the centerline of New York State Route 237; thence
  19. Southwesterly, 1,260 feet more or less, along a line parallel to and 500 feet southeasterly of the centerline of New York State Route 237 to a point, said point being along the southerly property line of tax account no. 87-4-37.1; thence
  20. Westerly, 286 feet more or less, along the southerly property line of tax account no. 87-4-37.1 to a point, said point being along the centerline of McAllister Drive (49.5' r.o.w.); thence
  21. Southerly, 311 feet more or less, along the centerline of McAllister Drive to a point, said point being 500 feet southerly of the centerline of New York State Route 237; thence
  22. Southwesterly, 144 feet more or less, along a line parallel to and 500 feet southerly of the centerline of New York



- State Route 237 to a point, said point being along the southerly property line of tax account no. 87-4-51; thence
23. Westerly, 785 feet more or less, along the southerly property line of tax account no. 87-4-51 to a point, said point being along the centerline of New York State Route 237; thence
  24. Northeasterly, 634 feet more or less, along the centerline of New York State Route 237 to a point, said point being the easterly extension of the southerly property line of tax account no. 87-3-22; thence
  25. Westerly, 82 feet more or less, along the southerly property line of tax account no. 87-3-22 to a point, said point being the southwesterly property corner of tax account no. 87-3-22; thence
  26. Northeasterly, 522 feet more or less, along the westerly property line of tax account no. 87-3-22 to a point, said point being the Northwesterly extension of the southerly property line of tax account no. 87-3-21; thence
  27. Northwesterly, 21 feet more or less, along the northwesterly extension of the southerly property line of tax account no. 87-3-21 to a point, said point being the southerly property line of tax account no. 87-3-20; thence
  28. Westerly, 38 feet more or less, along a southerly property line of tax account no. 87-3-20; thence
  29. Northerly, 120 feet more or less, along a westerly property line of tax account no. 87-3-20; thence
  30. Westerly, 65 feet more or less, along a southerly property line of tax account no. 87-3-20; thence
  31. Northerly, 286 feet more or less, along a westerly property line of tax account no. 87-3-20; thence
  32. Easterly, 350 feet more or less, along the northerly property line of tax account no. 87-3-20 to a point, said point being a southwesterly corner of tax account no. 87-3-19.114; thence
  33. Northerly, 125 feet more or less, along a westerly property line of tax account no. 87-3-19.114 to a point, said point being the northwesterly property corner of tax account no. 87-3-19.114; thence
  34. Easterly, 504 feet more or less, along the northerly property line of tax account no. 87-3-19.114 to a point, said point being the centerline of New York State Route 237; thence
  35. Northeasterly, 336 feet more or less, along the centerline of New York State Route 237 to a point, said point being the point of beginning.