

TOWN OF DELAWARE, NY

HAMLET OF CALLICOON WATER DISTRICT

MAP, PLAN, AND REPORT

Prepared for:

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1.0 INTRODUCTION

The Hamlet of Callicoon, located in the Town of Delaware in Sullivan County NY, is served by a 100+ year old, privately held, public water system. All but a few of the homes and businesses in the Hamlet are served by the water system. Lack of access to needed capital for system maintenance and upgrades has made it increasingly difficult for the owner to meet regulatory mandates. As such, the Company has requested that the Town of Delaware assume ownership of the system. This will allow for increased access to state and federal funding needed to bring the system into regulatory compliance. The Town has commissioned Delaware Engineering, D.P.C. to prepare a Map, Plan and Report (MP&R) to assist the Town in making an informed decision as to the public benefit of forming a special water district.

Established in 1904, the community water system is owned by the Callicoon Water Company (CWC), a private corporation. The New York State Department of State Incorporation Record is included as Appendix A in this report. The water company has 168 accounts, serving both domestic and commercial users, and provides fire protection to the Hamlet. The system has been assigned the Public Water Supply ID# NY5203321 by the New York State Department of Health (NYSDOH).

Because the system is a privately held company, water rates are subject to the approval of the New York Public Service Commission (NYPSC), which has budgetary review and approval authority over all water company expenditures and proposed rate increases. Water rates have been fixed for the last seven years. If the Town assumes operation of the utility, it would no longer be subject to Public Service Commission oversight.

The Hamlet's water system is also subject to the regulatory authority of the New York State Department of Health (NYSDOH), New York State Department of Environmental Conservation (NYSDEC) and Delaware River Basin Commission (DRBC), and will continue to be following district formation.

Historically, the CWC has been unable to collect sufficient revenue to fund a capital reserve budget for infrastructure upgrades and improvements. Due to the increased costs associated with regulatory compliance and maintenance of the 100+ year old water system, the CWC has requested that the Town of Delaware assume ownership of the water system. Establishing the new water district would increase the likelihood of the Town obtaining state and/or federal funding to address system deficiencies. In accordance with NYS Town Law 12-A, the Town of Delaware commissioned Delaware Engineering, D.P.C. to prepare a Map, Plan, and Report (MP&R) and to assist with the district formation process. As part of this process, a project has

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been identified which will enhance the reliability of the system and ensure compliance with regulatory standards. The project was identified in a 2017 Engineering Report, prepared for the Town by Delaware Engineering, D.P.C, and in this MP&R. The project is currently listed on the NYS Environmental Facilities Drinking Water State Revolving Fund 2018 Annual Intended Use Plan (NYS EFC DWSRF 2018 IUP), which is the first step in applying for state funding for the project. A copy of the NYS EFC DWSRF 2018 IUP listing is included as Appendix B in this report.

Forming a special improvement district, whereby a specified area within a town receives services beyond what other town residents receive (e.g. water service), is permissible under NYS Town Law (Article 12 & 12-A). Residents within this district will be levied a separate user charge for this additional service. Currently, residents residing in the Hamlet of Callicoon pay water fees to the Callicoon Water Company (CWC). If the district were to be formed, the Town would acquire the CWC water facilities and assume control of operations and billing for utility service charges.

Forming a special improvement district is a multi-step process which will take several months. The initial step is for the Town to prepare a Map, Plan, & Report (MP&R) which will identify the limits of the district, the existing infrastructure that is in place, the upgrades necessary to meet current regulatory standards, estimated costs and financing for the upgrades (grants/loans), operations and maintenance (O&M) costs, and estimates for the fees that will be charged to the users to provide this service. Appendix C of this report includes a map of the existing water system, a proposed district map and a comprehensive list of parcels to be included in the new water district.

If the MP&R is acceptable to the Town, a public hearing will be held to review the Report with residents that would be affected by district formation. If the residents and the Town are in favor of doing so, the district could be formed following approval of the Town Board. District formation is subject to permissive referendum.

Pursuant to Article 8 of the New York State Environmental Conservation Law and its implementing regulations contained in 6 NYCRR Part 617, formation of the district is also subject to the requirements of the State Environmental Quality Review Act (SEQRA). At its regularly scheduled January 10, 2018 meeting, the Town Board unanimously passed Resolution #4-2018 *Declare Intent to Serve as Lead Agency (SEQR) for Creation of a Special Improvement District and to Affect System Repairs Needed to Bring the System into Regulatory Compliance*. A certified copy of this resolution along with all related SEQR documentation is included in Appendix D of this report. The Board determined the action to be Type 1, requiring a coordinated review with potentially involved agencies. Involved agencies are those agencies that have discretionary authority over a proposed project. For this project those agencies would include the NYS DOH, NYS DEC and the DRBC. A complete list of agencies contacted as part of this review and a copy of

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the *Full Environmental Assessment Form* is included in Appendix D of this report. The purpose of the coordinated review is to identify any potential negative environmental impacts that may result from the Board's action. Following notification to the other involved agencies, and upon receiving no objections, the Board completed the required State Environmental Quality Review. Subsequently, at its regularly scheduled February 14, 2018 meeting, the Town Board passed Resolution #16-2018 *Adopt A Negative Declaration for the Hamlet of Callicoon Water Supply Project*. A certified copy of this resolution, included in Appendix D, was submitted for publication in the New York State Department of Environmental Conservation's *Environmental Notice Bulletin*.

Formation of the water district may also be subject to the approval of the NYS Comptroller's Office. The need for Comptroller approval is dependent on the final user rates that will be levied, the financing plan for the improvements, and input from the residents that will be served. At a minimum, the Comptroller's office will need to be notified of the district formation, with documentation as to how it was formed, so that it can be recorded in state files. A copy of the New York State Comptroller's Office 2018 Special Districts Memo is included in Appendix E of this report.

If and when the district is established, it is recommended that a water code be written and incorporated into the Town Code. The water code will identify how water rents will be set and collected, terms of service connections, user requirements, etc.

The CWC holds title to the real property where the springs, wells and storage facilities are located. Formation of the district will require the transfer of all assets, including real property, to the new Town Water District. A complete list of real property assets is included in Section 8 of this report. Property Description Reports from the Sullivan County Office of Real Property Tax Services for all of the parcels are included as Appendix F of this report.

2.0 EXISTING COMMUNITY WATER SYSTEM

Source, Pumping and Treatment:

The Callicoon Water System consists of two wells, two springs, one 250,000 gal covered reservoir, one 8,000-gallon elevated storage tank, and approximately 3 miles of ductile and cast-iron service mains.

Well Sources

Well #1, the primary source for the water system, is a shallow caisson well that was originally brought into service in 1957. It is located at 6 Creamery Road (Tax Map ID 12.-1-39.2) on a

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0.92acre parcel owned by the CWC. Water from Well #1 is treated with sodium hypochlorite for disinfection and ortho-phosphate for corrosion control. Well #1 is metered as per a DRBC order issued in 2012.

Well #1 is located near the confluence of the Delaware River and the Callicoon Creek. While this location is advantageous in that the well is able to maintain production levels even during periods of low rainfall, it is located within the FEMA designated 100-year floodplain. The building does not meet current FEMA regulations for construction in a floodplain. When flooding does occur, the operator must remove the pump to prevent damage from flood waters. When Well #1 is taken offline, the Hamlet relies on reserve capacity from the reservoir and obtains additional water from a secondary spring source located on St. Joseph's Seminary Road.

During the 2006 flood, water levels rose to 6 ft. above the floor of the well house, flooding the building and destroying major electrical components. In response to the area flooding, Sullivan County cut a 60-foot-wide bypass channel from the Callicoon Creek to the Delaware River just west of the well house. The channel is within 50 feet of the well. During periods of heavy rainfall, high turbidity levels have been observed in Well #1. As such, filling in the channel would mitigate water quality impacts during high stream flow events.

The well is set to operate based on the water level in the 250,000 gallon Freemont Street water storage reservoir. A level sensor on the storage tank is connected to a phone line which relays the level signal to the well controller. When the reservoir reaches a low set point, the well is activated. When the level sensor senses that the reservoir is full, the well pump automatically shuts off.

Well #2 is a 160' drilled well located at 10 Railroad Avenue on a 0.02-acre parcel (TMID 14.-5-7.2) owned by the CWC. This was the original well for the water system and supplemented the original spring sources. In recent years, due to a decrease in water usage by the Delaware Valley Job Corps Academy (DVJCA) and the closing of a local summer camp, system demand has significantly decreased eliminating the need for Well #2. As such, Well #2 has not been actively used since 2013.

The pumphouse building houses the well head, pump, chemical treatment and electrical components. In order to bring Well #2 back online for regular use, the structure will need to be repaired and the well retested to ensure that the water quality is in compliance with New York State Part 5 regulations.

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Spring Sources

The Callicoon Water System currently employs two spring sources, SP-1 known also as Mitchell Spring and SP-2 known also as Blacker Spring. Both springs are located off of St. Joseph's Seminary Road, in the western part of the Hamlet. These sources are used to supplement withdrawals from Well #1, the water system's primary water source. Historically, the springs served as the Hamlet's only water source. In 2012, the DRBC ordered the metering of all source waters. A meter was installed in the spring house, but is not currently operational.

Water from the springs flows into the system when system pressure decreases to allow for flow from the springs. Sodium hypochlorite is added to disinfect the water before it enters the public water supply distribution system. Contact time is minimized due to the size of the outfeed line and proximity of the users. Spring source flows vary with seasonal conditions requiring the operator to regularly adjust chemical feed rates. It is anticipated that once the two wells are repaired and certified for use by the Department of Health, the springs will be eliminated as a water source.

Distribution:

The distribution system consists of nearly 17,000 feet (3.1 miles) of 4", 6", and 8" ductile and cast-iron pipes, valves and hydrants. The earliest part of the system dates to 1914 when Mitchell Spring was developed and the distribution pipes were installed for St. Joseph's Seminary (now the Delaware Valley Job Corps Academy). The majority of the system was installed between 1957 and 1967 when the system was expanded throughout the center of the Hamlet and west to Del Vue Terrace. The 1970s saw some minor expansion of the distribution system to previously unserved properties in the center of the Hamlet. In the 1990s, the service area was again expanded to include properties along Viaduct Road.

Based on metered source water flows, water demand for similarly sized communities, and wastewater returned to the Callicoon wastewater treatment plant (WWTP), it is suspected that the system loses a significant amount of water due to leakage in the distribution system. However, until such time as all sources and system users are metered, it is not possible to determine the extent of the problem. It has been noted by the system operator that the area of the Hamlet known as Del Vue Terrace consistently experiences the most problems with watermain breaks and leakage.

The Callicoon water system produces water in quantities far in excess of that produced by much larger communities. The table below summarizes some area communities and their water usage data.

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	POPULATION	# OF SERVICE CONNECTIONS	AVERAGE WATER PRODUCED	WATER USE PER CONNECTION
Village of Walton	3,088	1,198	305,600	255 gpd
Village of Franklin	374	199	50,000 gpd	251 gpd
Hamlet of Downsville	625	224	47,000 gpd	209 gpd
Hamlet of Callicoon*	172	167	125,000 gpd	645 gpd**
Hamlet of Cooks Falls	160	82	10,000 gpd	122 gpd

*Includes DVJCA, which averages nearly 18,000 gpd. It currently serves 173 students and has 105 staff members.

** For 166 service connections— NOT INCLUDING DVJCA

As part of the proposed upgrade, 7,150 feet of distribution pipe will be replaced. It is anticipated that repair of the distribution system will significantly decrease the volume of finished water that will be produced. If water production rates fall below 100,000 gallons per day (gpd), the water system will no longer be under the jurisdiction of the DRBC.

Storage Facilities:

The Callicoon water system has two water storage facilities. The primary capacity is held in a 250,000-gallon enclosed reservoir located at 110 Freemont St. on a 0.64-acre parcel (TMID 13.-3-15.2) owned by the CWC. The reservoir is in excess of 40 years old. In 2010, the roof was replaced as part of a capital improvement project. A pump house is located adjacent to the reservoir. Pump #1 supplies water to an 8,000-gallon elevated storage tank on Del Vue Road. Pumps #2 and #3 are owned and operated by the DVJCA, and supply water to an 80,000-gallon storage tank that exclusively serves the facility. The CWC supplies water to the DVJCA, but the Academy retains their own licensed operator to provide O&M for the campus’s distribution, pumping and storage facilities. The DVJCA is the largest user of the Callicoon Water System.

An 8,000-gallon elevated storage tank is located at 121 Del Vue Road on a 0.04-acre parcel (TMID 13.-3-21) owned by the CWC. It provides water to the Del Vue Terrace residential development. This tank has reached the end of its useful life and had been scheduled for replacement in 2009 as part of the capital improvement project that included the roof of the Freemont St. reservoir. Unfortunately, cost increases precluded the completion of both projects at that time. The tank is currently scheduled for replacement by the CWC in 2018. While the water system does have fire hydrants in the Del Vue Terrace area, the 8,000 gallon tank provides limited supply for firefighting purposes.

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3.0 PROPOSED NEW DISTRICT

Establishment of the water district will require the transfer of all CWC assets to the new Town water district. This includes all real property where the springs, wells, and reservoirs are located and all buildings, equipment and appurtenances located thereon.

The proposed new district bounds will encompass the existing system in the Hamlet of Callicoon. Parcels that are currently served by the existing system will be included in the new district. A complete list of parcels to be included in the new district is included in Appendix C of this report. Property owners will pay a fee for continued water service, albeit to the district instead of the water company. The Town of Delaware would assume control of the existing system including all O&M as well as billing and collection. There will be some parcels which have private water systems (wells) and some parcels that have no water service (vacant land), which are bounded in the newly formed district. Approximately 30 parcels are expected to fall into this category. Vacant Parcels are designated by property class code 300 -399 (Appendix C). While these parcel owners will not receive a bill for water usage, they will be responsible for fees associated with the debt service on the water system loan.

4.0 DESCRIPTION OF FACILITIES – NEEDED IMPROVEMENTS

Both wells will be need to be taken offline in order to complete the necessary upgrades. Since upgrades to well house #1 will require the well to be temporarily shut down, the rehabilitation of well house #2 should occur first to reestablish the well as a viable water source.

Well House #2

Well House #2 is a 12' X 24' block building with a gabled roof and steel panel roofing. It has three doors (one on front, and one on each side) and no windows. The exterior is in degraded but serviceable condition, and the roof appears to be only a few years old. The 160' well was drilled in 1948 and has an average capacity of 60 gallons per minute (gpm).

Recommended Improvements:

Exterior

- Replace front entrance door with new steel door
- Replace side access doors with windows for natural light
- Repair any degraded block, scrape and paint

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Interior

- Spray foam insulate interior block walls and roof rafter spaces and finish to meet Class C flame spread and smoke developed indexes for interior wall finishes
- Redevelop well
- Refurbish/replace well pump
- Upgrade electrical components and install transfer switch for back up electrical power in case of power failure while Well #1 is under reconstruction
- Install flow meter
- Install level probe
- New chemical injection system for disinfection and corrosion control
- Well testing in accordance with New York State Part 5 regulations

Well House #1

This well house is located in the Delaware River/Callicoon Creek flood plain. It currently houses the well, pump, chemical feed system and electrical components. Well #1 has a capacity of 167 gpm. There is a small addition on the rear of the building used for chemical storage.

In order to comply with NYS Building Code regulations for construction in a flood plain, the building will need to be raised such that the finished floor is elevated 2 feet above the base flood elevation (BFE) for the location. According to FEMA Map No. 36105C0243F, the BFE for that location is 757'. A map prepared for the CWC indicates the first floor elevation to be 751.3 feet. Minimally, the finished floor elevation of the well house will need to be raised 7.7 feet in order to be in compliance with NYS Building Code standards for buildings located in the floodplain. The FEMA Map is included as Appendix G in this report.

Currently, water from Well #1 is treated solely by chemical addition. Due to the shallow depth of the well (24.5 feet), the water is susceptible to the influence of surface water, although the NYSDOH has not determined it to be under the direct influence of ground water (GWUDI). A GWUDI determination would require filtration of the water supply. The planned upgrade project includes the addition of a redundant filtration system. This would preclude the possibility of any future GWUDI determination for the Well.

Recommended improvements:

- Demo existing structure
- Raise grade elevation to comply with NYSBC for construction in a flood plain
- Construct new 20' X 30' (600 sf) building to house the well, pump, chemical treatment facilities, new filtration system, and chemical storage.

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- Redevelop well
- Install a new generator system to supply emergency power

Water Meter Installation

In 2012, the DRBC issued an order requiring the CWC to install meters at all water service connections by 2022. At this time, only the service connections of the four largest consumers are metered. It is anticipated that the plumbing in user’s properties will need to be modified to allow for the installation of the meters. Costs for these modifications are included in the upgrade plan. It is anticipated the Town will engage a third-party contractor to modify the plumbing and install the meters. Modifications will include the installation of a meter horn and a shut off valve.

- Install digital remote read meters at all service connections
- Replace 4 existing meters with digital remote meters

Watermain Replacement

The distribution system consists of approximately 17,000 feet of 4”, 6” and 8” cast and ductile iron pipe of various ages. The 4” lines do not meet the minimum requirements for fire flow. As part of the system upgrade, all 4” lines will be replaced and upsized. According to the system operators, watermain breakage occurs most frequently in the Del Vue Terrace development.

Recommended Improvements:

- Replace the following watermains, valves, and hydrant assemblies as listed below.

<i>Location</i>	<i>Diameter of pipe (in.)</i>	<i>Length of pipe (ft.)</i>	<i>Type of pipe</i>	<i>Year of installation</i>
St. Joseph's Seminary Rd.	4	910	Unknown	1914
Railroad Ave. (W)	4	485	Unknown	1958
Mill St. (E)	4	640	Unknown	1960
Mitchell Ave.	4	235	DI	1966
Highview Ave.	4	235	Unknown	1977
Gregory St. (N)	4	230	DI	1992
High St.	4	390	Unknown	1992
Del Vue Rd.	6	1,955	Unknown	1960
Del Vue distribution line	6	1,050	Unknown	1960
Del Vue Terrace	6	<u>1,020</u>	Unknown	1965
Total		7,150		

This represents 43% of the total distribution system.

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Floodplain Reclamation

Following the flood of 2006, Sullivan County cut a bypass channel connecting the Callicoon Creek and the Delaware River. This put the well at risk for potential ground water contamination.

Recommended Improvements:

- Return the area that is now a bypass channel back to its original state by filling in with suitable granular material

5.0 PROPOSED DISTRICT OPERATIONS

Day to day operations of the water system will be turned over to the Town of Delaware. The Town could opt to hire out daily operations to a third-party operations contractor, or they may choose to hire a part-time operator. Either way, the NYS DOH requires that public water system operators obtain a public water supply operator certification. Additional administrative assistance may also be required to assist with billing and collections. In 2017, the CWC spent \$48,795 per year on personnel expenses.

The part-time operator will be responsible for the day to day operations of the system. Duties will include, but are not limited to:

- Operating pumps, valves, motors and related machinery and equipment;
- Maintenance work and minor repairs to machinery, equipment and instrumentation;
- Recording readings of meters, gauges and scales;
- Regulating and adjusting chemical feeders;
- Water sampling for testing;
- Keeping a log of plant operations and related records;
- Performing custodial duties in connection with maintenance of buildings and grounds;
- Testing water samples for color, turbidity, taste, odor, oxygen value, alkalinity, chlorides, pH value and related factors;
- Recording results of tests, maintaining a variety of laboratory records and preparing reports;
- Assisting the Water Department business office by explaining technical matters to the public and addressing consumer complaints.

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The proposed upgrades include the addition of remote read meters. Remote read meters will enable the Town to obtain water usage data without having to enter the service address. This saves considerable billing time and expense. The new water code rules and regulations will determine whether this will be done on a quarterly, semi-annual or annual basis. An employee will need to be designated to perform this function.

6.0 REGULATORY REVIEW AND APPROVAL REQUIRED PRIOR TO CONSTRUCTION

Design and construction of the proposed water system improvements will be in conformance with Recommended Standards for Water Facilities - Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers (2014) and commonly referred to as the Ten States Standards, applicable NYSDOH Design Standards and the NYS Uniform Building Code. Plans will be submitted to the NYSDOH for review and approval.

Plans will also be submitted to the Delaware River Basin Commission (DRBC) for review and approval. Because the system is located in an area identified as “special protection waters”, a Non-Point Source Pollution Control Plan is also required to be prepared and submitted.

With respect to the State Environmental Quality Review (SEQR) process, a coordinated review with all interested and involved agencies was completed in February 2018. Additional site-specific standards required and/or recommended by the involved agencies will be incorporated into the design documents. SEQR review is required to be completed prior to submittal of the NYSEFC DWSRF application. The deadline for application submittals is March 1, 2019.

Since the estimated cost to the typical property owner detailed in Section 8 is less than the 2018 threshold established by the NYS Comptroller’s office, Comptroller approval to form the district will not be required.

A detailed *Formation, Financing and Implementation Schedule* is included as Appendix H in this report.

7.0 MAXIMUM AMOUNT TO BE EXPENDED

For the Callicoon Water System to continue to provide quality water to the community, the system requires rehabilitation. Based on the project scope previously detailed, an estimated project cost of \$4,094,900 has been prepared. The project is currently listed on the NYSEFC

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DWSRF 2018 Intended Use Plan and has been determined to be eligible for a grant/loan package. The loan portion of the project cost is \$1,637,960. This represents 40% of the total project cost, and is the maximum amount to be expended by the Town to finance the improvements. This amount assumes a fixed loan rate of 0% for a term of 30-years based on a “hardship determination” letter received from the NYSEFC. A copy of this letter is included as Appendix I in this report.

Additional costs associated with the preparation of this *Map, Plan and Report*, and costs associated with obtaining the real property and facilities that constitute the water system will also be incurred. The maximum amount to be expended for these costs and the costs to rehabilitate the water system shall not exceed \$4,202,672.

8.0 DETAILED EXPLANATION OF COSTS

Costs for obtaining the water system:

The Town proposes to purchase the water system including the land with buildings and equipment thereon and all distribution lines, transmission lines and appurtenances, free of any liens or encumbrances. The following is a list of the assets to be obtained as part of the transfer of water system ownership. Once the Town accepts the title to the real property listed below, these parcels will become exempt from local land taxes.

	PROPERTY ADDRESS	T MID	TOTAL ACREAGE	DESCRIPTION	ASSESSED VALUE
1	6 Creamery Rd.	12.-1-39.2	0.92 ac	Well house (Well #1)/Treatment Building (184 sf)	\$5,369
2	121 Del Vue Rd.	13.-3-21	0.04 ac	Elevated 8,000 gal Water Storage Tank	\$10,146
3	State Route 97	13.-3-15.1	0.43 ac	Vacant Land	\$4,300
4	110 Freemont St.	13.-3-15.2	0.64 ac	Covered Reservoir and Pumps	\$27,347
5	10 Railroad Ave.	14.-5-7.2	0.02 ac	Well #2 Pump & Treatment Building (360 sf)	\$13,610
Subtotal Assessed Value: \$60,772					
6	N/A	333.-1-2	N/A	Special Franchise*	\$108,799
7	N/S Railroad Ave.	626.000-9999-206.200/1881	N/A	Water Transmission Mains	\$6,174
Total Assessed Value: \$175,745					

*Utility property located in the public right of way is subject to a special franchise assessment. The annual assessment of special franchise is the responsibility of the Office of Real Property Tax Services (ORPTS), Valuation Services Bureau (VSB).

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While the proposed improvements detailed in Section 4.0 are eligible for grant funding and low interest financing through the NYSEFC – DWSRF program, the costs associated with engineering services (which includes the preparation of the preliminary engineering report, this Map, Plan and Report, environmental reviews, and funding applications), the costs for obtaining the properties (title searches and legal fees), and the costs for the real property were not included in the original request for funding application. The Town will need to secure financing for these costs.

COSTS ASSOCIATED WITH FORMING THE WATER DISTRICT AND OBTAINING THE WATER SYSTEM	
Engineering Services:	\$35,000
Real Property:	\$60,772
Title Search/Easements:	\$12,000
Total:	\$107,772

ESTIMATED DEBT SERVICE FOR WATER DISTRICT FORMATION 10-YEARS @ 4%	
Debt:	\$107,772
Annual Debt Service	\$12,776
Annual Cost/EDU*:	\$37

*Estimated 343 EDUs for the Hamlet across 167 service connections

Costs for System Improvements:

The table below details the cost associated with the proposed improvements that are necessary to ensure that the water system can continue to provide safe, reliable drinking water to the Callicoon community. These costs include fees associated with the short-term financing that will be needed while closing on the long-term loan. A more detailed Capital Improvements Cost Estimate is included as Appendix J to this document.

ITEM	COST ESTIMATE
Construction and System Upgrades	\$2,922,800
Professional Services, Short Term Interest & NYSEFC Issuance Costs	\$817,100
Contingency	\$355,000
Total	\$4,094,900

An Engineering Report was completed in October 2017 and submitted to the NYSEFC along with a Drinking Water State Revolving Fund Intended Use Plan Project Listing Form. The Town will be submitting a complete application to the NYSEFC DWSRF program which, if approved, could provide funding through their grant (60%) and loan (40%) program. An estimated annual user

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cost associated with the financing is given below. These estimates are determined as a function of the cost to a typical single-family home or *Equivalent Dwelling Unit* (EDU). (EDUs are an equalization factor used for determining rate impacts on system users. A single-family home =1 EDU; a duplex =2 EDUs; a restaurant (depending on the number of seats) might be 3 EDUs, which means that the restaurant is considered to use the same volume of water as 3 single-family homes). The number of EDUs is typically based upon actual metered water use. Since the Hamlet’s water system is unmetered, an estimate of the number of EDUs, based upon the number and type of users, is given below. For this estimate, a typical single-family home was considered to use 167 gpd or 61,000 gallons/year. The Hamlet of Callicoon is estimated to have 343 EDUs, including an estimated 108 EDUs for the DVJCA. Appendix K has additional information concerning EDUs.

ESTIMATED NYSEFC DWSRF FINANCING FOR PROPOSED IMPROVEMENTS (60% GRANT/40% LOAN) 30-YEARS @ 0%	
Total funding request:	\$4,094,900
40% of total:	\$1,637,960
Annual Debt Service:	\$54,600
Annual Cost/EDU*:	\$159

*Estimated 343 EDUs for the Hamlet across 167 service connections

Water use fees will be collected by the Town to finance the costs associated obtaining the water system, O&M of the system, and financing of the proposed upgrades. In 2017, the CWC reported gross annual revenues of \$85,722, and O&M expenses of \$103,637. These figures are exclusive of property and payroll taxes paid by the CWC. The 2015, 2016 and 2017 CWC Profit & Loss statements are included in Appendix L of this report. Should the Town choose to assume ownership of the water supply, a number of expenses related to the operation of the system could reasonably be expected to be removed from the expense ledger. These include costs associated with office rent (\$4,243/yr) and property taxes (\$8,756/yr). Additional O&M expenses could reasonably be expected to decrease once the system upgrades are completed. These savings will primarily result from the decrease in the costs associated with water production. Once the watermains are repaired, the system should realize a significant decrease in the volume of water produced. Replacement filters for the new filtration system planned for Well#1 will be a new expense for the water system. Estimated costs for purification chemicals and filters are given below.

The Town will need to hire a part-time water system operator and potentially a part-time administrative assistant for office work. An estimate of annual water system O&M expenses is given below.

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ESTIMATED ANNUAL WATER SYSTEM OPERATIONS, MAINTENANCE AND ADMINISTRATIVE EXPENSES	
Operations and Maintenance Expenses:	\$35,000
Administrative Expenses:	\$20,000
Water Testing:	\$2,500
Purification Chemicals and Filters:	\$6,000
Repairs and Maintenance:	\$22,000
Insurance:	\$4,000
Miscellaneous Office Expenses:	\$2,500
Other (Professional Fees, Training, Licensing):	\$1,500
Energy Costs:	\$20,000
Contingency:	\$20,000
Total Expenses:	\$133,500
Annual Cost/EDU*:	\$389

*Estimated 343 EDUs for the Hamlet across 167 service connections

In 2016, CWC records indicate that the system produced 45.649 million gallons (MG) of water, or 125,000 gallons, on average, each day. Once the distribution lines are replaced, it is anticipated that the total volume of produced water will decrease. It is estimated that the Callicoon water system will reduce the volume of treated water to approximately 22MG/year or 60,000 gallons per day. This represents 48% of the current volume. Once the volume drops to less than 100,000 gpd, the Delaware River Basin Commission (DRBC) will no longer have regulatory or oversight authority.

9.0 COST TO THE TYPICAL PROPERTY

Since the majority of the service connections are not metered, users are charged water use fees based upon the number of fixtures (kitchens, baths, washing machines) at the service address. Under this scenario, larger homes generally pay more than smaller homes, regardless of actual water usage. The typical single-family home (SFH) currently pays approximately \$360/year for water.

For the purposes of this evaluation, a typical single-family home is assumed to have 1 kitchen, 1.5 baths, a set of laundry tubs, an automatic washing machine, and an outside hose connection. The rate structure currently used by the CWC for single family homes (service classification No.1) is included as Appendix M in this report. Cost to the typical property, based upon the rate structure currently in place, is given below.

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TYPICAL RATES AND POTENTIAL IMPACT FOR SINGLE FAMILY HOME* (SFH)	
40% Loan @ 0% Interest for	
Annual O&M Cost for Typical SFH:	\$389/year
Annual Debt Service for Planned Improvements:	\$159/year (for 30-years)
Annual Debt Service for District Formation:	\$37/year (for 10-years)
Estimated Total:	\$585/year
Estimated Current Costs to SFH:	\$360/year
Increase:	\$225/year (62% increase)

The planned system upgrade includes the installation of water meters at all service connections. Once the meters are in place, users will be charged based on actual water use.

Water rates have been set by the Water Company for the 4 users that are currently metered, and each user pays based upon actual water usage. Current metered users pay a base rate of \$2.56/1,000 gallons for the first 100,000 gallons, \$2.40/1,000gal for the next 150,000 gallons and \$2.12/1,000 gal for the remaining usage. Once all service connections are metered, these water rates will need to be adjusted to ensure that the costs associated with the O&M of the system are covered by the revenues.

Property owners can expect changes to their water billing structure over the next several years, with the first change occurring once the new water district has been formed. It is anticipated that the Town will discontinue using the fixture fee schedule currently in use by the Callicoon Water Company. For the Hamlet of Callicoon sewer district, the Town has established sewer rents based upon EDU count and will adopt a similar fee schedule to establish initial water rents. Ultimately, once all of the service meters are installed, the Town will develop water rates based upon actual metered use. Final rates for metered water usage will not occur until the Town has collected sufficient data to set a fee schedule that is able to fund the water budget detailed in Section 8 of this report.

10.0 METHOD OF FINANCE

The needed improvements to the water system are anticipated to be financed through the NYSEFC's DWSRF program. The Town has had an engineering report prepared and the project is listed on the NYSEFC 2018 Annual Intended Use Plan. EFC has awarded a score of 180 points for this project. The Town was notified that they are eligible for a grant/loan package from NYSEFC and have been encouraged to submit a complete application to determine a viable financing plan.

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Additionally, the EFC has determined that the Town is qualified for “hardship financing”, and as such, is eligible for 0% financing for the project.

11.0 STATEMENT AS TO BENEFIT ASSESSMENT

As required by Article 12-A of the Town Law, the costs associated with debt service and O&M for the Town Water District will be charged on a benefit basis. That is to say that, each holder of real property that will benefit from the district formation will be levied an equal share of the costs associated with forming the district, financing the upgrades, and O&M of the system.