Housatonic Water Works Company

Fair Market Value Opinion

Prepared for: Town of Great Barrington, MA

REPORT DATE / FEBRUARY 28, 2023
VALUE AS OF: JANUARY 1, 2023

RAFTELIS

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RAFTELIS

February 28, 2023
Joe Aberdale, Superintendent
Department of Public Works
Town of Great Barrington
334 Main Street
Great Barrington, MA 01230

Subject: Appraisal Report for the Housatonic Water Works Utility System

Dear Mr. Aberdale:

At the request of the Town of Great Barrington ("Town") Department of Public Works ("DPW"), Raftelis has prepared an appraisal of the Housatonic Water Works Company ("HWW") water utility system ("System") serving a portion of the Town (primarily the Village of Housatonic) and limited portions of the Towns of Stockbridge and West Stockbridge. The purpose of the appraisal was to render an opinion of the fair market value of the System for possible negotiated sale. This report is not intended for any other use.

This report is an appraisal report, which is intended to comply with a set of standards set forth by the Appraisal Foundation in its Uniform Standards of Professional Appraisal Practice ("USPAP") and the American Society of Appraisers Business Valuation Standards. Consistent with USPAP, this report presents a summary discussion of the data, reasoning, and analyses that were used in the appraisal process to develop the appraiser's opinion of value. Additional supporting documentation is retained in our project file. The depth of discussion and information provided in this report is specific to the needs of the Town and for the intended use stated above.

It has been a pleasure working with you, and we thank you and the Town for the support provided during the course of this work.

Sincerely,

John M. Mastracchio, ASA, CFA, P.E.
Executive Vice President

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List of Acronyms

AWWA	American Water Works Association
CAGR	Compound Annual Growth
CAPM	Capital Asset Pricing Model
CIAC	Contributions in Aid of Construction
CILM	Capitalization of Income Loss Method
CIP	Capital Improvement Plan
CWIP	Construction Work in Progress
DCF	Discounted Cash Flow
DEP	Department of Environmental Protection
DLOC	Discount for Lack of Control
DLOM	Discount for Lack of Marketability
DPU	Department of Public Utilities
DWP	Department of Water Protection
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
FY	Fiscal Year
GDP	Gross Domestic Product
GICS	Global Industry Classification Standard
GPM	Gallons per Minute
HWW	Housatonic Water Works Company
MG	Million Gallons
MGD	Million Gallons per Day
MVIC	Market Value of Invested Capital
NACWA	National Association of Clean Water Agencies
OCLD	Original Cost Less Depreciation
O&M	Operation and Maintenance
PFAS	Poly-Fluoroalkyl Substances
PUC	Public Utility Commission
RCN	Reproduction Cost New
RCNLD	Reproduction Cost New Less Depreciation
SDWA	Safe Drinking Water Act
SF	Square Feet
SIC	Standard Industrial Code
US	United States

USEPA	U.S. Environmental Protection Agency
USPAP	Uniform Standards of Professional Appraisal Practice
WACC	Weighted Average Cost of Capital
WTF	Water Treatment Facility

Executive Summary

Description and Scope of the Assignment

The purpose of this assignment was to estimate the fair market value of the Housatonic Water Works Company ("HWW") water system as of January 1, 2023 (the "valuation date"). This report was prepared for the Town of Great Barrington, Massachusetts ("Town") to support the potential sale of the System through a negotiated sale process. This report is not intended for any other use.

The scope of the assignment included gathering, analyzing, and applying relevant information necessary to appropriate valuation approaches, methods, and procedures to complete an opinion of the fair market value of the HWW System, expressed as a single dollar amount.

Business Interest Subject to this Appraisal

The subject of this appraisal is the entire private water utility system owned, operated and maintained by HWW, with its offices located at 80 Maple Avenue, Suite 1 in Great Barrington, Berkshire County, Massachusetts.

The HWW water utility system ("System") is a regulated water utility serving a total of approximately 849 customers. Major components of the System include a reservoir ("Long Pond"), a water treatment facility ("WTF"), a water storage facility, and a potable water distribution system for the provision of potable water to the customers served by the System. Additionally, System assets include appurtenances, such as valves, hydrants, services, and meters. Also included in the valuation are tangible assets such as land, transportation equipment and mechanical equipment for the operation of the System.

The business interest subject to this appraisal includes all of the assets relating to HWW's System, including land, buildings, water treatment, storage, and transmission and include miscellaneous equipment, construction work in progress, governmental permits, system drawings and records, asset management data and records, all machinery, equipment, vehicles, and tangible personal property, and all supplies and inventory related to the operation of the System.

Standard and Premise of Value

The definition of value used in this appraisal is fair market value and is defined as follows:

> *"the highest price which a hypothetical willing buyer would pay to a hypothetical willing seller in an assumed free and open market"*[1]

This definition of value is similar to the definition contained in the International Glossary of Business Valuation Terms, which defines Fair Market Value as:

[1] Epstein v. Boston Housing Authority, 317 Mass. 297 (1944)

"*The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.*"[2]

The appraisal was prepared based on the *fair market value* definitions identified above and the premise that the highest and best use of the System is its continued use as a potable water utility system. Fair market value as defined for this Report, therefore, includes the following assumptions:

1. Both the buyer and seller were considered hypothetical parties;
2. Even though a willing buyer and willing seller are hypothetical, they are presumed to be dedicated to achieving their individual maximum economic advantage, but absent any compulsion to buy or sell;
3. The hypothetical buyer is prudent, implying a rational buyer, and is considered to be a "financial" and not a "strategic" buyer. A financial buyer is motivated by the profit opportunity implicit in the subject on a stand-alone basis whereas a strategic buyer would potentially derive benefits from specific synergies with the subject entity that no other buyer would enjoy;
4. Both parties are assumed to understand the industry and other economic conditions and their effects on the subject assets, as of the valuation date;
5. A hypothetical buyer is assumed to be an independent third party; and
6. A hypothetical sale will be for cash.

Hypothetical Willing Buyers

The likely population of typical hypothetical willing buyers was considered to estimate the fair market value of the System. Based on the characteristics of the subject assets and the utility providers that are likely to invest in the System, the most likely typical willing buyers of the HWW System were identified as investor-owned water companies either operating within the Commonwealth of Massachusetts or in other states looking to expand into the Massachusetts water utility market.

Valuation Assessment

This valuation assessment was prepared in accordance with the business valuation and personal property standards of the American Society of Appraisers and the Uniform Standards of Professional Appraisal Practice ("USPAP"), which is promulgated by the Appraisal Foundation.

There are three generally recognized approaches to the determination of value of an asset, business, or business interest: the Income Approach, the Market Approach, and the Asset Approach. These

[2] International Valuation Glossary – Business Valuation, jointly published by the American Society of Appraisers, Chartered Business Valuators Institute, Royal Institute of Chartered Surveyors, and Saudi Authority for Accredited Valuers, November 2021.

approaches are widely accepted by financial institutions, courts, government agencies, businesses, and society in general, and they are comprised of theoretical concepts and systematic methods. These approaches were considered in developing the opinion of the fair market value of the System.

Income Approach

The Income Approach is most often used to value income producing properties and is based on the premise that the value of a property is the present value of the future economic benefits of owning the property. The underlying principle in this approach is that buyers invest in assets with the expectation of receiving the anticipated future net benefits. This approach is relevant when the property being valued generates or is anticipated to generate net income, profits, or free cash flows. In our Income Approach, we utilized the direct capitalization method.

The indication of fair market value of the System using the Income Approach as of the date of valuation is $2,220,000.

Market Approach

The Market Approach is a way of determining an indication of value of an enterprise by using one or more methods that compare the subject to similar businesses that have been sold. There are two applicable methods of estimating the value of an asset, business, or business interest under the Market Approach. These are (1) the Guideline Public Company Method, and (2) the Guideline Transactions Method. The Guideline Public Company Method is a method whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business and that are actively traded on a free and open market. The Guideline Transactions Method is a method whereby pricing multiples are derived from transactions involving companies engaged in the same or similar lines of business. If the sales comparisons are not exactly like the properties being valued, then the selling prices are adjusted to equate them to the characteristics of the properties being valued.

In applying the Market Approach, the Guideline Transactions Method was utilized. The Guideline Public Company Method was not utilized because no publicly traded companies were identified that were considered to be sufficiently comparable to the subject assets for use as a value indicator under the market approach. Based on the Guideline Transaction Method, the indicated fair market value of the system is $2,470,000 as of the valuation date.

Asset Approach

The Asset Approach provides an indication of the value of the System by subtracting the amount of depreciation from the replacement or reproduction cost of the assets. The value estimate under this approach is estimated by the sum of the parts of the system, i.e., physical asset components, real estate, intangibles, etc., which is termed the "asset accumulation method." Depreciation in this context represents the loss in value caused by physical deterioration, functional obsolescence, and economic obsolescence.

The asset accumulation method was applied under the asset approach by adding together the current value of tangible improvements, personal property (e.g., vehicles, equipment, office furnishings,

inventory, etc.), real estate, and intangible assets. Various forms of depreciation were applied to derive the value of the tangible property, including physical deterioration and functional obsolescence. The appraisal also considered a third form of depreciation, economic obsolescence. In simple terms, economic obsolescence is the inability of an asset to generate a return attributable to that asset. Economic obsolescence was quantified utilizing the Capitalized Income Loss Method. Economic obsolescence under this method was estimated by calculating the required annual return on assets and comparing this amount to the actual earnings of the System, with the difference attributed to income loss. The income loss was then capitalized to derive the total estimate for economic obsolescence.

Based on the Asset Approach and the methods described above, the indicated fair market value of the System is $3,000,000 as of the valuation date.

Valuation Synthesis

In the valuation synthesis, each of the three valuation approaches was considered, but more reliance was placed on the Income Approach than the Asset and Market Approaches. The opinion of the fair market value of the System is as shown in Table ES-1.

Table ES-1: Estimated Value of the Housatonic Water Works

Description	Value Indicator	x	Weighting	=	Weighted Value
Income Approach					
Direct Capitalization Method	$ 2,220,000		50%		$ 1,110,000
Market Approach					
Guideline Transaction Method	2,470,000		20%		494,000
Asset Approach					
Asset Accumulation Method	3,005,000		30%		901,500
Subtotal					$ 2,505,500
Discount for Lack of Marketability (DLOM)			10%		(250,550)
Opinion of Value (Rounded)					**$ 2,300,000**

Discounts for lack of control ("DLOC") and marketability ("DLOM") were considered. DLOC is applicable where there is a lack of control position in the subject assets due to a minority interest, and such lack of control would result in materially lower economic benefits to a potential owner of the minority interest. In this instance, since the entire system was valued for a possible negotiated sale, no DLOC adjustment was applied.

DLOM is applicable where the ownership interest in a special purpose market is not readily marketable due to the absence of a ready or existing market for the sale or purchase of the subject assets. Based on my review of marketability factors and considering the potential interest in the market for the System, a 10% DLOM was applied to the value conclusion.

Valuation Summary and Conclusions

Based on the valuation analyses completed, the fair market value of the operating assets of the System is:

$2,300,000

This conclusion of value consists of compensation amounts for the operating assets of the System, including tangible improvements, personal property (e.g., vehicles, equipment, office furnishings, inventory, etc.), real estate, and intangible assets as an assembled portfolio in use as a water utility system.

These findings and conclusions are qualified and subject to change per the assumptions and limiting conditions identified and described throughout this report. This report is qualified in its entirety by, and should be considered in light of, these assumptions and limitations.

1. Introduction

1.1. Description of the Assignment

The Town of Great Barrington ("Town") engaged Raftelis Financial Consultants, Inc. ("Raftelis") to render an opinion of value of the Housatonic Water Works ("HWW") Water System as defined herein as of January 1, 2023 (the "valuation date"). This report was prepared for the Town to support the potential sale of the System through a negotiated sale process. This report is not intended for any other use.

The following information summarizes the appraisal assignment:

Table 1-1: Description of the Assignment

Parameter	Description
Subject Property	Potable Water System owned and operated by the Housatonic Water Works Company.
Purpose and Intended Use of the Appraisal	Determine the fair market value of the entire system for potential sale through negotiated sale.
Type of Engagement	Appraisal
Type of Entity	Investor-owned water utility system owned by HWW
Form of Ownership	Private
State or Jurisdiction of Incorporation	Commonwealth of Massachusetts
Principal Business Location	Town of Great Barrington, Berkshire County, MA
Business Interest Under Consideration	The Water Utility System as a complete business enterprise
Level of Value and Control	Control, 100% interest and ownership of the System
Effective Date of the Appraisal	January 1, 2023

1.2. Summary Description of the Systems

The subject of this appraisal is the entire potable water utility system owned and operated and maintained by HWW with principal place of operations located at 80 Maple Avenue, Suite 1 in Great Barrington, Massachusetts.

The System is comprised of a water treatment plan, the Long Pond Reservoir, parcels of land around the reservoir, and a potable water distribution system, including services, meters and other normal appurtenances. For the purposes of this valuation, it is assumed to also include all properties taxed as "personal property" of HWW.

1.3. Purpose and Scope of the Assignment

The purpose of this assignment was to assess the fair market value of the HWW Water System as of the valuation date for the potential sale of the System through a negotiated sale process. The scope of the assignment included gathering, analyzing, and applying relevant information necessary to appropriate valuation approaches, methods, and procedures to complete and express an opinion of the value of the System, expressed as a single dollar amount. Specifically, the scope of work associated with this assignment included:

- Completion of independent research and analysis concerning the industry and economic environment in which the System operates;
- Review and analysis of HWW historical financial performance as reported to the Massachusetts Department of Public Utilities ("DPU");
- Completion of a visual inspection of the System, which occurred on February 7, 2023;
- Completion of independent research and analysis of private water and wastewater companies operating in the regional water and wastewater sector;
- Completion of independent research and analysis of other water and wastewater system acquisitions;
- Review of historical financial information regarding the System provided by the Town and HWW.
- Estimation of future financial performance of the System based on review and analysis of relevant and available data and information and discussion with Town and HWW representatives.
- Application of appropriate valuation approaches, methods, and procedures to obtain an opinion of value of the System.

1.4. Standard and Premise of Value

The definition of value used in this appraisal is fair market value and is defined as follows:

> *"the highest price which a hypothetical willing buyer would pay to a hypothetical willing seller in an assumed free and open market"*[3]

This definition of value is similar to the definition contained in the International Glossary of Business Valuation Terms, which defines Fair Market Value as:

> "*The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.*"[4]

[3] Epstein v. Boston Housing Authority, supra citation 1.
[4] International Valuation Glossary – Business Valuation, supra citation 2.

The appraisal was prepared based on the *fair market value* definitions identified above and the premise that the highest and best use of the System is its continued use as a potable water utility.

Fair market value as defined for this Report, therefore includes the following assumptions:

1. Both the buyer and seller were considered hypothetical parties;
2. Even though a willing buyer and willing seller are hypothetical, they are presumed to be dedicated to achieving their individual maximum economic advantage, but absent any compulsion to buy or sell;
3. The hypothetical buyer is prudent, implying a rational buyer, and is considered to be a "financial" and not a "strategic" buyer. A financial buyer is motivated by the profit opportunity implicit in the subject on a stand-alone basis whereas a strategic buyer would potentially derive benefits from specific synergies with the subject entity that no other buyer would enjoy;
4. Both parties are assumed to understand the industry and other economic conditions and their effects on the subject assets, as of the valuation date;
5. A hypothetical buyer is assumed to be an independent third party; and
6. A hypothetical sale will be for cash.

1.5. Sources of Information

The sources of information that were reviewed, considered, or used to complete the appraisal of the System included the following:

1. Epstein v. Boston Housing Authority, 317 Mass. 297 (1944).
2. International Valuation Glossary – Business Valuation, jointly published by the American Society of Appraisers, Chartered Business Valuators Institute, Royal Institute of Chartered Surveyors, and Saudi Authority for Accredited Valuers, November 2021.
3. Valuing Machinery and Equipment. The Fundamentals of Appraising Machinery and Technical Assets, American Society of Appraisers, Fourth Edition.
4. Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021, The Appraisal Foundation.
5. An Act to Incorporate the Housatonic Water Works Company, Commonwealth of Massachusetts Acts of 1897, Chapter 229.
6. Housatonic Water Works Company, Water System Evaluation, prepared by AECOM for the Town of Great Barrington, January 23, 2021.
7. Return Statements of the Housatonic Water Works Company, submitted to the Massachusetts Department of Public Utilities, for Fiscal Years 2017 – 2021.
8. U.S. Private Water Utilities: Drivers, Competitive Landscape and Acquisition Trends, Bluefield Research, 2019.

9. Clean Water Act: A Summary of the Law, Congressional Research Service, Claudia Copeland, October 18, 2016.
10. Principles of Public Utility Rates, J. Bonbright, A. Danielsen, and D. Kamerschen, 2nd Edition, 1988.
11. Water Infrastructure Funding Parity Report, prepared by Raftelis and Tetra Tech for the National Association of Clean Water Agencies, dated July 21, 2022.
12. Updated Fact Sheet: Bipartisan Infrastructure Investment and Jobs Act, published by the White House Briefing Room, August 2, 2021.
13. Fifty Years of Clean Water Achievement, National Association of Clean Water Agencies, 2021.
14. Annual Report of the Massachusetts Department of Public Utilities Submitted to the General Court of the Commonwealth of Massachusetts Pursuant to G.L. c. 25, sec.2, 2021.
15. Commonwealth of Massachusetts G.L. c. 164, § 96, and G.L. c. 165, § 2
16. Water and Wastewater Maintenance Index, Bureau of Labor Statistics.
17. Buried No Longer: Confronting America's Water Infrastructure Challenge, American Water Works Association, 2012.
18. 2017 Infrastructure Report Card, Drinking Water, published by the American Society of Civil Engineers.
19. U.S. Census Bureau, 5-Year American Community Survey results for the City. Accessed at data.census.gov.
20. Water Pricing and Affordability in the US: Public vs. Private Ownership, X. Zhang, M. Gonzalez Rivas, M. Grant, and M.E. Warner, World Water Council, Water Policy Vol 24 No 3. 2022.
21. Water and Wastewater Rate Survey, published by American Water Works Association, April 2021.
22. Water and Sewer Medians, Fitch Ratings. 2020.
23. Survey of Professional Forecasters, published by the Philadelphia Federal Reserve Bank of Philadelphia, November 14, 2022.
24. Livingston Survey, Federal Reserve Bank of Philadelphia, December, 2022.
25. Valuation of Railroad and Utility Property. Arlo Woolery, CAE.
26. Valuing a Business, The Analysis and Appraisal of Closely Held Companies, 5th Edition, Shannon P. Pratt.
27. Business Valuation Standards, American Society of Appraisers, 2009.
28. Appraisal Handbook, Unit Valuation of Centrally Assessed Properties, Western States Association of Tax Administrators, Committee on Centrally Assessed Property, August 2009.
29. Cost of Capital Navigator, Kroll, 2022.

30. Duff & Phelps, Valuation Handbook – U.S. Guide to Cost of Capital, 2019.

31. Financial Valuation, Applications and Models, 3rd Edition, James R. Hitchner.

32. Handy-Whitman Index of Public Utility Construction Costs, Whitman, Requardt & Associates, North Atlantic Region, 2022.

33. Consumer Price Index for All Urban Consumers, U.S. City average, Bureau of Labor Statistics, 2011-2022.

34. Valuation of Discounts and Premiums. Fundamentals, Techniques & Theory. National Association of Certified Valuation Analysts. 1995-2012, Chapter 7.

35. Discount for Lack of Marketability: Job Aid for Valuation Professionals. Internal Revenue Service. September 2009.

36. Certain other information and referenced sources pertaining to wastewater utility sales transactions as cited in this report.

37. Certain other water and wastewater industry and business valuation reference sources as cited in this report.

1.6. Assumptions and Limiting Conditions

The appraisal results presented in this report are subject to several extraordinary assumptions as defined by Uniform Standards of Professional Appraisal Practice ("USPAP").[5] The use of this Extraordinary Assumption might have affected the assignment results. These extraordinary assumptions include the following:

1. In preparation of this report and the conclusions contained herein, we have relied on certain assumptions and information provided by others with respect to conditions which may exist or events which may occur in the future. Data and information associated with the System and its property and assets were obtained from the Town and HWW, and were assumed to be complete, accurate, and reliable. These assumptions and sources of information are identified throughout the report. We believe such sources are reliable and the information obtained to be accurate and appropriate for the analysis undertaken and the conclusions reached herein. If any inaccuracies or incomplete information are subsequently discovered, then the value conclusions ascribed in this report are subject to change.
2. All existing liens and encumbrances, if any, were assumed to have been discharged and the subject assets were appraised as though free and clear.
3. It was assumed that the System is in full compliance with all applicable federal, state, and local environmental regulations and laws unless otherwise stated or specified in this report. Similarly, it was assumed that all applicable zoning and land use regulations and restrictions

[5] Uniform Standards of Professional Appraisal Practice (USPAP) 2020-2021, The Appraisal Foundation. The 2020-2021 edition of USPAP was extended through December 31, 2023. USPAP defines an extraordinary assumption as an assignment-specific assumption as of the effective date regarding uncertain information used in an analysis, which, if found to be false, could alter the appraiser's opinion or conclusions.

have been complied with, unless non-conformity is otherwise stated or specified in this report.

4. It was assumed that all required licenses, certificates of occupancy, consents, and other legislative or administrative authority from any local, state, or national government, public entity or organization have been or can be obtained or renewed for any use on which the system value is based.
5. It was assumed that any and all permits and easements required to operate the Systems can be transferred in the event of an acquisition with reasonable time and effort.
6. It was assumed that there are no hidden or unapparent conditions of the system, property, soil, or structures, which would render the assets more or less valuable. Further, the existence of hazardous material or any other environmental problems or conditions is unknown. The opinion of value contained in this report is predicated on the assumption that there are no such materials or conditions on or in the property that would cause a loss in value. No responsibility is assumed for any such conditions, or for any expertise or knowledge required to discover them.

The appraisal results presented in this report are subject to the following limiting conditions:

1. This appraisal was prepared based on data and information obtained as of the date of this report. Any additional information that is provided or received after the date of this report could have a material effect on the findings and conclusions contained in this report.
2. Any estimates or statements contained in this report are not predictions of the future and were created for the specific purpose of this appraisal.
3. The opinions and conclusions contained in this report are as of the stated effective valuation date, for a specific use and purpose, and made under specific assumptions and limiting conditions. The reader is cautioned and reminded that the conclusions presented in this appraisal apply only as to the effective date indicated. Raftelis makes no warranty, expressed or implied, with respect to the opinions and conclusions contained in this report. Raftelis makes no representation as to the effect on the subject property of any unforeseen events after the effective date of the appraisal. Any statement in this report involving estimates or matters of opinion, whether or not specifically designated, are intended as such, and not as representation of fact.
4. No responsibility is assumed for legal matters, nor does this report provide any opinion on title related to the System. It was assumed that any title is good and marketable.
5. No responsibility is assumed for the absence or presence of any endangered species which would prevent, restrict, or adversely affect any transfer or improvement of the subject system.

2. Background and Description

2.1. Town Background

The Town is located in the southern portion of Berkshire County approximately 40 miles west of the City of Springfield and 10 miles north of the Connecticut state border. It is part of the Pittsfield Metropolitan Statistical Area, which includes all of Berkshire County. As of the 2020 Census, the Town has a population estimated at 7,172.

The potable water system serving much of the Town is the state chartered HWW. In 2021, HWW served approximately 849 customer accounts. Exhibit 1 on Appendix C provides a history of the number of customer accounts served by HWW since 2017.

2.2. The Housatonic Water Works Company

The Housatonic Water Works Company was incorporated in 1897 under the Commonwealth of Massachusetts Acts of 1897[6] and originally owned by Pearson family. In 1984, the System was sold to the current owners of the System, the Mercer family of Housatonic.

HWW owns and operates all facets of the potable water supply system serving a portion of the Town as well as limited portions of the Towns of Stockbridge and West Stockbridge. The following sections provide detail on the physical and other non-financial assets of the System, as summarized in the report titled "Water System Evaluation" prepared by AECOM in 2021 (the "2021 AECOM Report").[7]

2.2.1. HWW Treatment and Storage Assets

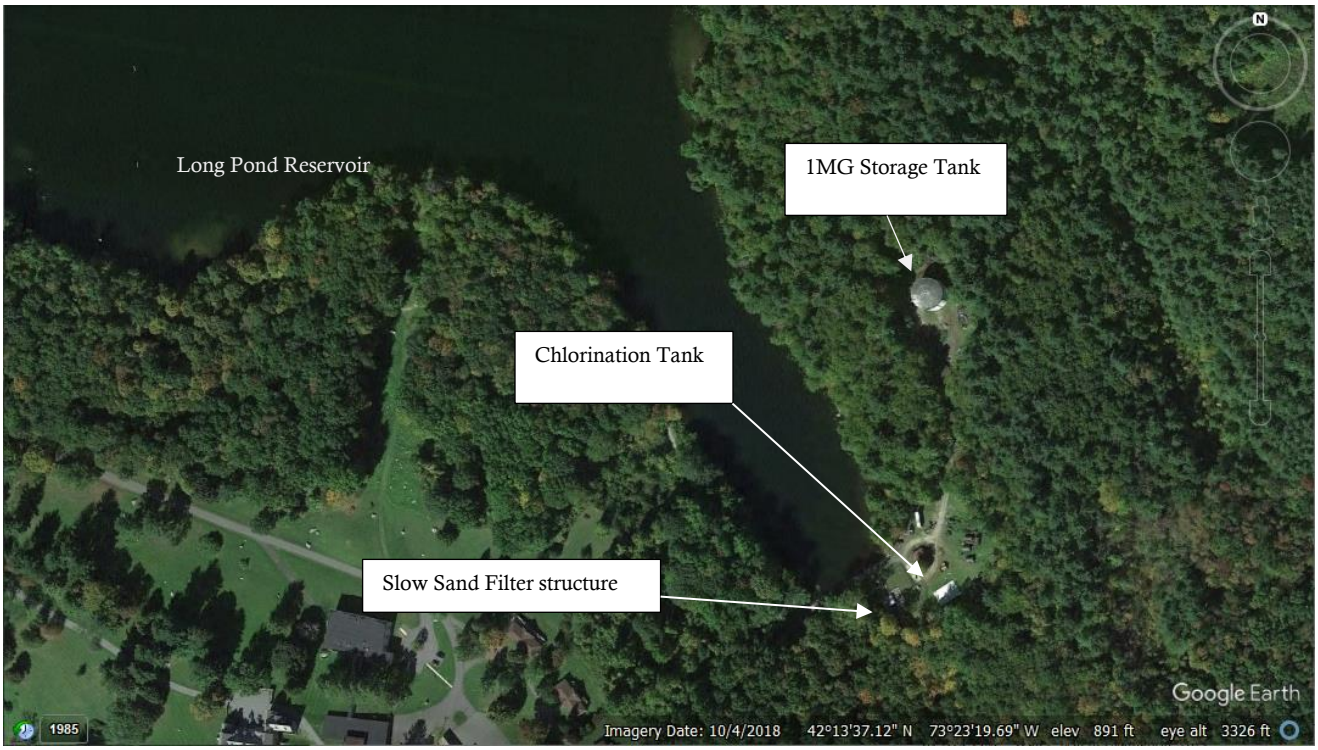
The water system is supplied by water from the Long Pond Reservoir. The water is then filtered and chlorinated at a water treatment facility ("WTF") located on land adjacent to the reservoir. The water is then pumped into a one million gallon ("MG") at-grade storage tank. Water from the storage tank flows into the distribution system via gravity. An arial view of the reservoir, WTF, and storage tank are shown in Figure 2-1.

These assets were visually inspected during a February 7, 2023 site visit and appear to conform to the detailed descriptions provided in the 2021 AECOM Report.

[6] An Act to Incorporate the Housatonic Water Works Company, Commonwealth of Massachusetts Acts of 1897, Chapter 229.

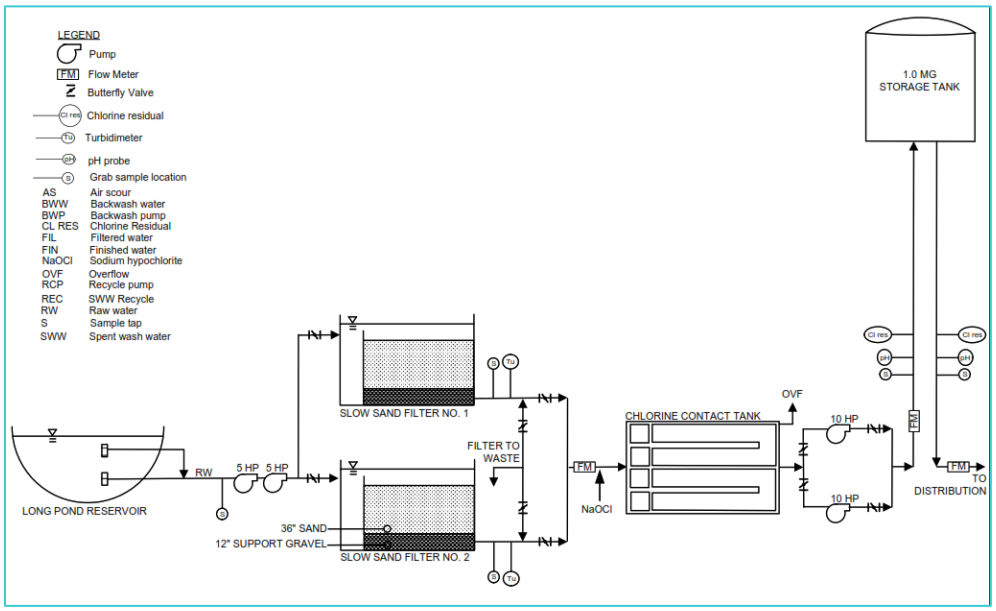
[7] Housatonic Water Works Company, Water System Evaluation, prepared by AECOM for the Town of Great Barrington, January 23, 2021.

Figure 2-1: Aerial Image of the Reservoir, WTF, and Storage Tank



The WTF is a slow sand filtration facility common at the time of its construction. As of 2021, the facility appeared to continue to operate in accordance with it design. The existing chlorination facilities were reportedly constructed in 1997. The 2021 AECOM report identifies this facility's ability to provide the needed disinfection in accordance with current water treatment rules. The storage tank, also constructed in 1997, provides System storage capacity for both normal demands and fire flow requirements. A schematic of these assets, including assets for boosting pressure from the chlorination facility into the storage tank, is provided in Figure 2-2.

Figure 2-2: WTF Process & Storage Schematic



As part of the 2021 AECOM Report, engineering inspections of the reservoir (specifically its dam), the treatment facilities, and the storage tank were conducted. The table below summarizes the findings of these inspections.[8]

Table 2-1: Condition Assessment of Major System Components – Reservoir, Treatment, Storage, and Distribution

Component	Inspector	Inspection Type	Reported Condition
Long Pond Dam	Lenard Engineering, Inc.	Visual	Adequate, with noted maintenance needed
Treatment Plant - Physical	AECOM	Visual	Noted plant age and historical water treatment compliance issues; recommended replacements of certain process equipment; further recommended considering replacement within the next 5 years
Treatment Plant - Electrical	AECOM	Visual	Recommended replacement of certain assets and installation of on-site back-up generation.
Disinfection Facility	AECOM	Visual	Noted issues with Disinfection by-products, recommended process modifications
Booster Pumping Facility	AECOM	Visual	Adequate; no recommendations included.

[8] Water System Evaluation Report prepared by AECOM, supra citation 7.

Component	Inspector	Inspection Type	Reported Condition
1MG Storage Tank	Underwater Solutions, Inc.	Visual	Adequate Condition; recommendations for standard repairs and maintenance and installation of a tank mixing system.

2.2.2. HWW Distribution System Assets

The HWW owns and operates a distribution system that dates from the late 1800s. The distribution system is constructed of a number of different pipe materials with main diameters ranging from 2 inches and below up to 12-14 inches. The overall length of the distribution system is approximately 19.5 miles with approximately 16% of the system (by footage) replaced in the 1990's. The estimated pipe lengths, as documented in the 2021 AECOM Report, are shown in Table 2-2.

Table 2-2. Estimated Length of HWW Distribution Pipe by Size and Material of Construction

Diameter	Material	Approximate Length (LF)
2-inch	various	9,365
4-inch	various	23,009
6-inch	various	26,116
8-inch	various	29,398
10-inch	various	4,355
12-inch	various	11,141
various	AC	13,370
various	CI	72,539
various	DI	13,604
various	PVC	2,075
various	Unknown	1,798
Subtotal		89,244
New 8" Pipe	DI	14,140
Total Length (Ft)		**103,384**

HWW also owns, operates and maintains the appurtenant valves and hydrants connected to the water mains, as well as approximately 850 customers services and their attendant water meters. An evaluation of the distribution system was completed by AECOM in 2021 as documented in the 2021 AECOM Report. In summary, the report recommended the replacement and up-sizing of significant portions of the distribution system to increase fire flow availability and recommendations for use of industry best practices for system flushing the maintenance of hydrants and valves.

2.2.3. HWW Miscellaneous Assets

In addition to the treatment, storage and distribution assets, HWW owns other tangible assets including real estate associated with booster stations and sundry capital assets associated with their operation of the System.

2.2.4. HWW System Capital Needs

In 2021, AECOM finalized its review of the system and provided a set of recommendations for needed capital upgrades to the System. These recommendations are summarized in Table 2-3 below and total approximately $31 Million. The 2021 AECOM Report recommended completion of these investments over the next 20 years. These recommendations were made to ensure the long-term ability of HWW to maintain compliance with drinking water quality regulations and ensure adequate fire flow capacities throughout the distribution system. A summarized list of the recommended projects and the cost of each is presented in Table 2-3 below.

Table 2-3: Recommended Capital Improvements[9]

Item	Estimated Construction Cost (2021 $)	Estimated Engineering and Owner's Contingency (40%)	Estimated Total Project Cost (2021 $)	Recommended Timeframe for Improvements		
				0-5 Years	6-10 Years	11-20 Years
Water Supply						
Analysis of spillway capacity		$7,500	$7,500	$7,500		
Remove trees around Long Pond Dam	$6,000	$2,000	$8,000	$8,000		
Remove, repair or replace training wall	$20,000	$8,000	$28,000	$28,000		
Water Treatment						
Installation of a mixing system in the 1.0 MG Storage Tank	$50,000	$20,000	$70,000	$70,000		
Replacement of sodium hypochlorite day tank with one with graduations and a clear calibration tube	$500	$200	$700	$700		
Installation of onsite emergency generator to power two 10 HP pumps in event of a power failure	$150,000	$60,000	$210,000	$210,000		
Replace the existing utility pole on the property	$10,000	$4,000	$14,000	$14,000		
Install a combined filtered effluent turbidimeter and incorporate a high turbidity alarm into the plant's SCADA system	$15,000	$6,000	$21,000	$21,000		
Incorporate a high and low point of entry chlorine residual alarm into the plant's SCADA system	$3,000	$1,000	$4,000	$4,000		
Conduct pilot study to evaluate proposed treatment technologies		$300,000	$300,000	$300,000		
Phase 1: Supplemental Greensand Filter and New Treatment Building	$1,000,000	$400,000	$1,400,000	$1,400,000		
Phase 2: Additional Greensand Filter and IEX Process	$1,100,000	$440,000	$1,540,000	$1,540,000		
Upgrade electric service to 480-volt for new WTP	$100,000	$40,000	$140,000	$140,000		
Water Distribution						
Replacement of 49,307 LF of 2", 4" and 6" with 8" Water Main	$15,000,000	$6,000,000	$21,000,000	$10,500,000	$10,500,000	
Replacement of 8,674 LF of 8" and 10" with 12" Water Main	$2,700,000	$1,080,000	$3,780,000		$3,780,000	
Clean and Line 8,714 LF 12" Water Main	$1,800,000	$720,000	$2,520,000			$2,520,000
Further Studies and Investigations						
Identify the location of both intakes to the WTP and decommission the shallower of the two intakes		$10,000	$10,000	$10,000		
Total	**$21,955,000**	**$9,099,000**	**$31,053,000**	**$14,253,000**	**$14,280,000**	**$2,520,000**

[9] Table 6-1, Water System Evaluation, AECOM, 2021.

2.2.5. Intangible Assets

In addition to the tangible assets described above, the HWW System has a number of intangible assets. These include:

- Existing Operational Permits.
- Completed engineering studies to improve the operations of the utility.

2.3. Financial Statement Analysis

Exhibits 2 through 3 in Appendix C provide a summary of the HWW's historical balance sheets and income statements from fiscal year ("FY") 2017 through FY 2021. The HWW's fiscal year is from January 1 through December 31 each yar. FY 2021 was the most recent audited financial information available. Several financial ratios analyzing information from these statements are included in Exhibit 6 of Appendix C. Historical financial statements were analyzed to assess the HWW historical financial performance over time as this can provide some indication of future growth potential and financial performance. However, past performance may not be indicative of future results due to various factors, including changing market conditions and unforeseen circumstances.

As shown in Exhibits 3 and 6, the HWW operated at a small net loss in FY 2018 to FY 2021. The return on assets followed the same general trend. The asset turnover ratio remained generally consistent from FY 2017 to FY 2021, and the return on equity was variable over the same period.

Year-over-year customer account growth has been flat over the forecast period. Total assets increased 1.2% to 3.5% per year due to plant and general equipment investments over this period.

Sales revenues increased moderately from FY 2017 to FY 2019. Sales revenues has varied due to changes in billed volumes from one year to the next.

3. Water Sector and Local Economy

3.1. Sector Overview

3.1.1. General

The water industry in the United States ("U.S.") is fragmented with approximately 148,031 public drinking water systems in the U.S. based on the latest comprehensive information on drinking water systems published by the U.S. Environmental Protection Agency ("USEPA").[10] Each of these systems regularly supplies drinking water to at least 25 people or 15 service connections. There is a total of approximately 50,022 non-transient community water systems that supply water to a population of customers year-round. Of these non-transient community water systems, the vast majority are relatively small or very small systems that serve less than 10,000 people.

Government-owned water and wastewater utility services have annual revenue of about $116 billion. The number of private or investor-owned water utilities (approximately 4,800) is small compared to the number of government-owned utilities, and the combined annual revenue of private water and wastewater utilities is roughly $15 billion.[11] Public entities own and operate water systems that serve about 86 percent of this population, and privately-owned utilities serve 14 percent. Further, private water service is concentrated in several states, such as Connecticut, and Idaho where private water utilities serve more than 35 percent of the population, and in Pennsylvania, Ohio, West Virginia, Kentucky, and Nebraska where private water utilities serve between 25 to 35 percent of the population. In Massachusetts, private water utilities serve less than 5% of the population.[12] In aggregate, revenues for U.S. water, sewerage and other systems are forecasted to grow at an annual compounded rate of approximately 4% between 2019 and 2023.[13]

3.1.2. Competitive Landscape

Demand for utility services depends on commercial and residential water needs, which are related to population growth, the level of economic activity, and efficiency of water usage. The profitability of individual water and wastewater companies depends on efficiency of operations because prices are fixed by public utility commissions ("PUCs"). Large companies have economies of scale in operations and the ability to raise capital for infrastructure improvements. Small companies can compete successfully through superior engineering or by serving desirable local markets. The U.S. industry is concentrated with the 50 largest companies accounting for about 75% of the revenue. High barriers to entry, such as capital investments, make the industry resistant to competition; many companies operate as *de facto* monopolies. The cost of constructing a new water system in an existing market is high, and regulatory approval must be secured. Utilities may face competition from industrial customers supplying their own water.

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[10] USEPA National Drinking Water Activity Dashboard available at https://echo.epa.gov/trends/comparative-maps-dashboards/drinking-water-dashboard?state=National. 2019 data for number of systems, 2016 data for population served.
[11] Dun & Bradstreet, First Research Industry Profile, Water & Sewer Utilities, December 17, 2019.
[12] The State of Public Water in the United States, published by Food & Water Watch, February 2016.
[13] Dun & Bradstreet, supra citation 11.

Though there are many more public than private utilities, market activity (mergers and acquisitions) among private water and wastewater companies is more prevalent than among government-owned utilities and takes place in major markets across the country. Between 2015 and 2020 there were approximately 716 acquisitions of community water and wastewater systems. Approximately 66% percent were transactions involving water systems, and the remaining 18% and 16% were for wastewater and combined water and wastewater systems, respectively. Overall, the deal sizes were mostly smaller tuck-ins made by companies like American Water and Aqua America that average approximately 2,500 customers for water systems. In addition, the majority of transactions (approximately 60%) were comprised of private companies acquiring other private companies, approximately 24% involved private companies acquiring municipal systems, 11% involved municipal agencies acquiring private company systems, and only approximately 5% involved municipal agencies acquiring systems from other municipal agencies.[14] Many of the transactions involving municipal agencies acquiring private company systems were eminent domain transactions or transactions consummated under the threat of condemnation. In 2021, there were approximately 210 utility transactions that occurred, which primarily involved acquisitions by private water and wastewater companies.[15]

3.1.3. Industry Regulation

The principal law governing water systems is the Federal Safe Drinking Water Act ("SDWA"). In Massachusetts, the provisions of this legislation are enforced by the Massachusetts Department of Environmental Protection ("DEP") through its Drinking Water Program ("DWP") staff. Generally, the SDWA provides standards which must be met in the quality of drinking water provided by a utility and the DEP & DWP oversee the implementation of these requirements. Provisions included ensuring acceptable levels of contaminants in a drinking water supply and the providing a licensing and oversight framework for the operation and maintenance of the systems.

Private water utilities and some government owned utilities are economically regulated by PUCs. Regulation represents third-party intervention by a government agency as an arbitrator between the water company and the customers it serves. Ideally, regulation attempts to maximize the net benefits of efficiency, equity, and innovation by seeking fair profits and "just and reasonable" rates.[16] As such, utility rates charged by water companies typically require review and approval by state PUCs. State PUCs also set conditions and standards for services and often must approve long-term financing programs, capital expenditures, and reorganizations (including assets sales and acquisitions). Accountability of utility rates charged by government-owned water and wastewater utilities are typically assured through municipal governance and governing boards. Public agencies are non-profit service providers and typically cannot charge their customers/ratepayers a higher price for water than the actual cost of providing the service.

Accountability of utility rates charged by government-owned water and wastewater utilities is typically assured through municipal governance and governing boards. Public agencies are non-

[14] U.S. Private Water Utilities: Drivers, Competitive Landscape and Acquisition Trends, Bluefield Research, 2019.
[15] 34% Jump in M&A Emphasizes Banner Year for Water Industry, Bluefield Research, March 28, 2022. Accessed at: https://www.bluefieldresearch.com/ns/34-jump-in-ma-emphasizes-banner-2021-for-water-industry/
[16] Principles of Public Utility Rates, J. Bonbright, A. Danielsen, and D. Kamerschen, 2nd Edition, 1988, p.6.

profit service providers and typically cannot charge their customers/ratepayers a higher price for water than the actual cost of providing the service.

For private water companies, utility rates, revenues, and earnings are primarily based on a "utility basis" approach to establishing revenue requirements. Under this approach, PUCs allow water companies the opportunity to recover O&M expenses, including depreciation, and earn a rate of return on rate base. Rate base is typically comprised of the depreciated original cost value of the utility's property that is used and useful to serving the public and may include reasonable allowances for interest used during construction and for working capital.[17] The annual depreciation expense component of the revenue requirement allows the utility to recover its capital investment over the anticipated useful life of the depreciable assets. The return on rate base component is intended to compensate the utility for annual interest expenses on outstanding debt and provide a fair rate of return for the total equity capital employed to finance facilities used to provide water service.[18]

3.1.4. Water Sector Risks and Challenges

There are a number of challenges facing the water sector including growing regulation, emerging pollutants, such as per- and poly-fluoroalkyl substances ("PFAS"), the need for infrastructure replacement, and expectation for greater service levels. With these challenges and the water sector's cost continuing to rise, economic challenges of funding wastewater costs are among the top challenges in the sector.

At the same time, water utilities are concerned about customer affordability, and the continued ability to charge full cost pricing while responding to those customers that experience economic hardship.[19] The affordability of water and wastewater service has become a significant issue for low-income households and a higher priority for water and wastewater utilities that struggle to reconcile the need to adequately fund infrastructure while not overly burdening those who cannot afford rate increases. Water and wastewater rates in the U.S. have increased by an average of approximately 4% annually since 2016.[20]

Deteriorating infrastructure is a critical issue for water and wastewater utilities. Water utilities must invest in the coming decades to replace and update aging water treatment plants, storage tanks, and pipe, as well as other drinking water supply infrastructure. U.S. water and wastewater systems will need to spend an estimated $2.9 trillion in infrastructure investments over the next 20 years, according to a report published by the National Association of Clean Water Agencies ("NACWA").[21] Most of the buried water infrastructure in the U.S. is designed to last up to 60 to 80 years, and much of it is nearing or has passed that lifespan, according to the American Society of

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[17] Ibid, p.211.
[18] Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1. 7th Edition, American Water Works Association. p.14.
[19] Fifty Years of Clen Water Achievement, National Association of Clean Water Agencies, 2021.
[20] Water and Wastewater Maintenance Index, Bureau of Labor Statistics.
[21] Water Infrastructure Funding Parity Report, prepared by Raftelis and Tetra Tech for the National Association of Clean Water Agencies, dated July 21, 2022.

Civil Engineers.[22] Spending requirements to meet federal standards in the commercial portion of the industry are smaller but just as urgent.

Additional challenges include the need to continue to recover resources for both economic and environmental benefits. Utilities will need to spend more money on resource recovery and building awareness and support for its benefits. Water utilities are also challenged to embrace continuous improvement to address inefficiencies and to stretch monetary resources.

3.2. Regional Overview

3.2.1. General

In the Commonwealth of Massachusetts, the Department of Public Utilities ("DPU") is responsible for the oversight of investor-owned utilities in the Commonwealth. The mission of the DPU is to ensure that consumers' rights are protected, and that utility companies are providing the most reliable service at the lowest possible cost.

The Rates and Revenue Requirements Division of the DPU is responsible for providing the technical expertise to determine the appropriate levels of revenues to recover through rates and to determine the rate design for investor-owned utilities, including 17 investor-owned water companies conducting business in Massachusetts.[23]

3.2.2. DPU Economic Regulation of Water Utilities

The DPU establishes rates for utilities under its jurisdiction in rate case proceedings. Investor-owned utilities operating in the Commonwealth are required to file an application with the DPU in support of utility rate changes. Changes to base rates are typically based on historic test year cost of service regulation or a performance-based rate mechanism. Under cost-of-service pricing, the DPU reviews the costs incurred by utility companies during a historical test year adjusted for known and measurable changes to determine the reasonableness of such costs and to determine whether they were prudently incurred. The categories of costs include the companies' annual operation and maintenance expenses, depreciation, taxes, capital investments, cost of debt, and rate of return for shareholders (i.e., return on equity). Appropriate annual expenses plus a return on rate base (i.e., return on net capital investment and working capital) make up the company's cost of service or the revenue requirement upon which rate structures must be designed to recover.[24]

DPU's regulatory authority over investor-owned water systems is in certain areas concurrent with that of the Massachusetts DEP. In situations where crossover issues are involved, such as in water conservation and adequacy of service, the DPU works with the DEP to ensure that the provisions of the agencies' respective duties are implemented.

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[22] 2017 Infrastructure Report Card, Drinking Water, published by the American Society of Civil Engineers.
[23] Annual Report of the Massachusetts Department of Public Utilities Submitted to the General Court of the Commonwealth of Massachusetts Pursuant to G.L. c. 25, sec.2, 2021, p.44.
[24] Ibid, p.45

The following are recent equity returns and total returns allowed on rate base that were approved by the DPU:

- East Northfield Water Company: ROE 10.5%, Cost of Debt 4.75%, 50% Debt, 50% Equity, RORB 7.63% (March 31, 2020 Decision, Docket No. 19-57).
- Hutchinson Water Company: ROE 10.5%, Cost of Debt 5.5%, 53.83% Debt, 46.17% Equity, RORB 7.81% (September 10, 2019, Docket No. 18-156)
- Colonial Water Company: ROE 10.75%, Cost of Debt 3.36%, 50.21% Debt, 49.79% Equity, RORB 7.04% August 30, 2019 Decision, Docket No. 18-105)
- Housatonic Water Works Company: ROE 10.5%, Cost of Debt 10%/6.25%, 34.9% Equity, 37.63% Existing Debt, 6.25% Proposed Debt, RORB 9.14% (August 24, 2016 Settlement Motion, Docket No. 15-179).

If a private water company were to acquire the HWW, the DPU rate setting process would apply to the acquiring company. While the DPU would provide the acquiring company with a reasonable opportunity to recover its return of and on its capital investments in the HWW System, the DPU does not guarantee that return. Further, while the acquiring water company may have some control over certain factors that affect its ability to achieve its authorized return, such as O&M expenses and management decisions regarding its operations of the System, there are other factors, such as the economy, weather, pandemics, and economic regulation timing that the acquiring company would have little, if any, control over, which adds to the business risk of owning the HWW System.

Regarding the potential acquisition of the HWW by an investor-owned water company regulated by the DPU, the DPU has authority to ensure that regulated water companies pay a fair and reasonable price to acquire municipal water and wastewater systems. The process that DPU uses to evaluate such acquisitions is through an open docketed process that allows DPU to consider evidence, submitted by parties including the Office of Consumer Counsel, relating to the establishment of a reasonable purchase price.

Massachusetts General Law allows public utility companies to consolidate or merge with one another or sell and convey all or substantially all of their properties to another of such companies if the DPU has determined that such purchase and sale, consolidation or merger, and the terms thereof, are consistent with the public interest. In determining whether a purchase and sale, consolidation or merger is consistent with the public interest, the DPU shall, at a minimum, consider: potential rate changes, if any; the long term strategies that will assure a reliable, cost effective energy delivery system; any anticipated interruptions in service; or other factors which may negatively impact customer service.[25]

3.3. Local Economy

The Town of Great Barrington is a community in western Massachusetts encompassing just under 45 square miles of area mostly within the drainage area of the Housatonic River. The two closest larger cities, Pittsfield and Springfield lie 20 miles to the north and 45 miles to the east, respectively.

[25] Commonwealth of Massachusetts G.L. c. 164, § 96, and G.L. c. 165, § 2

U.S. Route 7 and State Route 41 run through the Town and connect to U.S. Interstate Highway 90 (the Massachusetts Turnpike) at Stockbridge, approximately 14 miles north of the Town center.

The U.S. Census Bureau estimated its population as 7,172 as of the 2020 decennial Census, growing approximately 1% between 2010 and 2020. The median household income in the Town is $65,192 based on the U.S. Census Bureau, 5-Year American Community Survey in 2021, which is slightly above the average for Berkshire County ($63,159) but below the Massachusetts state average of $89,026. The median value of owner-occupied housing in the Town is estimated at $379,900, which is significantly above the median for Berkshire County ($232,900).

The Town is home of Bard College at Simon's Rock, a private liberal arts college offering both Associate and Bachelor of Arts degrees and a campus of Berkshire Community College. Educational attainments of its residents include 95.7% of adults who have attained high-school diploma or higher and 46.9% of adults who have received a bachelor degree or above. Major health care needs of City residents are provided by the Fairview Hospital located in the Town, which provides a full range of inpatient, outpatient and ambulatory surgical services.

The Town has established a vibrant community of businesses and cultural resources known as the Downtown Great Barrington Cultural District, which support the community and its presence as a hub for tourism in the Berkshire region.

3.4. Economic Conditions and Covid-19

In March 2020, the World Health Organization declared the disease first detected in 2019 caused by the novel strain of coronavirus ("COVID-19") a pandemic. The impact of COVID-19, from a social and economic perspective, has been severe and has reached every population around the world. As of the date of this Report, efforts to mitigate these impacts have progressed significantly with much of the adult U.S. population receiving a vaccine. However, a consensus among health experts continues to indicate that the ease with which COVID-19 is transmitted, the emergence of new variants of COVID-19 both globally and domestically, and unequal access to vaccines in large parts of the world will likely result in COVID-19 shifting from a pandemic disease to an endemic one. An endemic disease remains persistently present but is generally manageable from a health perspective.

The analyses contained in this Report are therefore based on an assumption of a COVID-19 endemic existing for multiple years beyond 2022. Under this scenario, the presence of a COVID-19 endemic is not expected to create additional severe social and economic restrictions like the events responsible for the most recent recession.

Beyond 2022, returning to "normal" implies that COVID-19 would be a manageable health issue. However, more recently, performance of national, state, and local economies has been impacted by the relatively high cost of inflation and a rapid rise in interest rates. The extent to which these conditions will cause an economic recession is currently unknown. However, since the HWW System provides an essential service to the residents and businesses in Great Barrington, a recession is not likely to have a significant impact on the financial performance of the utility.

3.5. Growth Potential

In conjunction with the Massachusetts Secretary of the Commonwealth, the University of Massachusetts, Donahue Institute projects that the Great Barrington community is not expected to grow significantly over the next 20 years, with the potential for a slight population decrease through 2040.[26] This projection correlates with the Massachusetts Department of Transportation's 2020 Regional Transportation Plan for Berkshire County.[27]

The 2021 AECOM Report identifies a potential future growth in maximum day demand ("MDD") for the water system to 0.39 MGD, increasing from the current MDD of 0.30 MGD. Both figures are derived from the "2016 Water Master Plan," which was not reviewed as part of this appraisal.

[26] http://www.pep.donahue-institute.org/

[27] https://www.mass.gov/lists/socio-economic-projections-for-2020-regional-transportation-plans

4. Valuation Approaches and Methods

4.1. Valuation Approaches

There are three generally recognized approaches to the determination of value of an enterprise: the Income Approach, the Market Approach, and the Asset Approach (also sometimes referred to as the Cost Approach). These approaches are widely accepted by financial institutions, courts, government agencies, businesses, and society in general, and they are comprised of theoretical concepts and systematic methods. These approaches were considered in estimating the fair market value of the HWW System. The remainder of this section provides a general description of the valuation approaches that were considered.

4.1.1. Income Approach

The Income Approach is based on the premise that the value of a property is the present value of the future economic benefits of owning the property. The underlying principle in this approach is that buyers invest in assets with the expectation of receiving the anticipated future net benefits. The Income Approach is relevant when the property being valued generates or is anticipated to generate net income, profits, or free cash flows, and is used when the projected future economic benefits or income directly associated with the property can be reasonably estimated. There are generally two methods of estimating value under the Income Approach. These are (1) the direct capitalization method, or single-period model, and (2) the discounted cash flow ("DCF") method, a multi-period method.

The direct capitalization method measures value by capitalizing a projected net income or cash flow stream in perpetuity by a capitalization rate. It assumes there will be stable earnings, no variation in the capitalization rate, and no termination of the income stream. Reduced to its simplest terms, the concept of direct capitalization of income involves estimating value by determining the present value of money that will be received sometime in the future. The value under this approach can be determined by dividing the economic income by a capitalization rate, where the capitalization rate is used to convert anticipated economic benefits of a single period into a measure of value. This translates to more income, which means more value, and more risk and more time between the current date and future receipt of income, which means less value.[28] In the unique case where the economic income is a constant amount into the future, the capitalization rate equals the discount rate. In any other case where growth is expected from the base level of economic income being capitalized, then that expected growth is reflected in the capitalization rate, and the difference between the discount rate and the capitalization rate is the annual compound rate of growth in the economic income.[29]

[28] Valuation of Railroad and Utility Property. Arlo Woolery, CAE, p.67-72

[29] Valuing a Business, The Analysis and Appraisal of Closely Held Companies, 5th Edition, Shannon P. Pratt., p.238-240.

The DCF method measures value by projecting future expected (debt-free) net cash flows and discounting these cash flows to present value using a discount rate.[30] When either of these methods are used, it presumes that the cash flow stream is generated by employing all the assets associated with the water system that are used and useful. As such, there are no additions to the value estimate under this method for various asset components (e.g., land, tangible improvements) that comprise the system and are used in the provision of service because those assets are part of the whole system and are used to generate the income stream. This theory was supported by the appeals court decision in the South Bay Irrigation District vs. California-American Water Company case, which stated that "*When the capitalization-of-income approach is used as a basis for an opinion of, or considered in determining the market value of, an operating enterprise, the result is a determination of the total value of all of the items of property which are part of that enterprise."*[31]

Under the direct capitalization or DCF methods, the debt-free net cash flows, or "free cash flows" represent the total after-tax cash flow generated by the enterprise and available to the providers of the subject's invested capital: stockholders (equity) and creditors (debt). Debt-free net cash flow is defined as follows:

> Debt free net cash flows = Net income + depreciation and amortization + interest expense - working capital additions - capital expenditures

Net cash flow is generally defined as cash that a business or project does not have to retain and invest in order to generate the projected cash flows in future years. Generally, net cash flow comes from operations, but may result from other sources, such as interest income where appropriate. Capital expenditures that are deducted from net cash flows are those amounts needed to match the revenue and expense forecast. In other words, they represent the amounts needed for replacement of plant and/or equipment that are retired in the normal course of business, for increase in capacity consistent with projected revenues, and for the replacement of existing plant and/or equipment. Debt free net cash flow represents cash flow to the total invested capital and adds back interest expense and preferred stock, if any, since total invested capital includes debt, equity and preferred capital.[32]

These cash flows are discounted to present value at a discount rate that reflects the risks inherent in the investment and the returns reflective of current market conditions. If the cash flow stream is expected to continue beyond the projection period, a terminal or residual value is estimated. The sum of the discounted cash flows and the discounted terminal value provides an indication of the value of the enterprise.

The discount rate is the compounded rate (expressed as an annual rate) at which each increment of expected economic income is discounted back to its present value. The discount rate reflects both the time value of money and the risk associated with the expected income stream. The discount rate in totality represents the cost of capital. The cost of capital is the expected rate of return that market

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[30] American Society of Appraisers, Business Valuation Standards, 2009, p.27.
[31] South Bay Irrigation District. v. California-American Water Co., 61 Cal.App.3d 944,988 (1976).
[32] Cost of Capital Application and Examples, Shannon P. Pratt and Roger J. Grabowski, Fifth Edition, 2014, p.18-23.

participants require in order to attract funds to a particular investment. The cost of capital reflects opportunity cost, that is, the cost of foregoing the next best alternative investment, and it is a function of the investment not the investor.[33]

The discount rate may be derived using the Weighted Average Cost of Capital ("WACC"). The WACC represents the after-tax return on each element of invested capital, weighted by their relative percentage of the capital structure,[34] and can be expressed with the following equation:

$$WACC = (k_e \times W_e) + (k_d [1\text{-}t] \times W_d)$$

Where:

k_e = cost of equity

W_e = weight of equity capital in the capital structure

k_d = cost of debt capital (pre-tax)

t = income tax rate

W_d = weight of debt capital in the capital structure

The WACC used in the Income Approach is intended to represent the cost of capital of the population of the typical willing buyers of the enterprise.

The equity portion of WACC may be calculated using several methods, including the Build-Up Method, the DCF Method, and the Modified Capital Asset Pricing Model ("CAPM") Method. Under the Build-Up Method, the equity return is calculated by adding together the systematic risk and unsystematic risks associated with the subject company.[35] The basic formula for this method is as follows:

$$K_e = R_f + RP_m + RP_s + RP_i + RP_c$$

Where:

R_f = Risk-free rate

RP_m = Equity risk premium associated with the market

RP_s = Size premium

RP_i = Industry risk premium

RP_c = Company Specific Risk Premium

Under the DCF Method, the equity return is estimated using the Gordon Growth Model. This model is based on the theory that the value of a company's stock is the present value of the cash flows received from dividends including the dividend growth rate.

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[33] Ibid., p.3-6.

[34] Duff & Phelps, Valuation Handbook – U.S. Guide to Cost of Capital, 2019.

[35] Financial Valuation, Applications and Models, 3rd Edition, James R. Hitchner, p.194.

$$PV = NCF_1 / (k_e - g)$$

Where:

NCF_1 = Net cash flow in year 1

PV = Present value

k_e = cost of equity capital

g = Expected growth in net cash flows.

An implied cost of equity capital can be estimated using this model by applying the DCF model in reverse. The basic formula using the single-stage constant growth DCF Model is as follows:

$$k_e = (D_1 / P_o) + g$$

Where:

D_1 = Expected or announced stock dividend in year 1

P_o = Current stock market price

g = Expected growth in dividends per share.

The equity return determined using this method is a market-based model since publicly traded peer group companies are used to prepare an indication of the cost of equity. Under this method, indication of cost of equity for the subject company may include an adjustment for a company-specific risk premium.

The cost of equity (k_e) may also be derived using the Modified CAPM. In simple terms, the CAPM suggest that a rate of return on an asset is a function of a risk-free rate of return, plus a market risk premium. The CAPM formula is typically modified to reflect the additional risk associated with the size of the subject company and company-specific risk factors. The formula for the modified CAPM is as follows:

$$k_e = R_f + \beta \times (RP_m) + RP_i + RP_s + RP_c$$

Where:

R_f = Risk-free rate

β = Beta (measurement of systematic risk)

RP_m = Equity risk premium associated with the market

RP_i = Industry risk premium

RP_s = Size premium

RP_c = Company Specific Risk Premium

Beta (β) is a measure of the systematic risk of a stock, and the tendency of a stock's price to correlate with changes in the market. The equity risk premium (RP_m) is the extra return that investors demand to compensate them for investing in a diversified portfolio of large common stocks, rather than investing in risk-free securities. The size premium (RP_s) represents the difference between actual historical excess returns and the excess return predicted by beta. The "size effect" is based on

the empirical observation that companies of smaller size are associated with greater risk, and therefore, have a greater cost of capital. The industry risk premium (RP_i) reflects the amount that investors expect the future return of the industry to exceed the return on the overall market. The company specific risk premium (RP_c) is additional risk premium that may be necessary to reflect lack of diversification, depth of management, lack of a public market, potential upward bias of the cash flow forecast, or a variety of factors that may make the company more or less risky than comparable companies.

4.1.2. Market Approach

The Market Approach is a way of determining an indication of value of an enterprise by using one or more methods that compare the subject to similar businesses or similar businesses that have been sold. There are two methods of estimating the value of a business under the Market Approach. These are (1) the Guideline Public Company Method, and (2) the Guideline Transactions Method. The Guideline Public Company Method is a method whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business and that are actively traded on a free and open market.[36] The Guideline Transactions Method is a method whereby pricing multiples are derived from transactions involving companies engaged in the same or similar lines of business.[37] If the sales comparisons are not exactly like the properties being valued, then the selling prices are adjusted to equate them to the characteristics of the properties being valued. Certain factors, such as the location, date of sale, physical characteristics, and technical and economic factors relating to the transaction are analyzed for their comparability to the subject system. This approach is most reliable and applicable when there is an active market providing a sufficient number of sales of comparable properties that can be independently verified through reliable sources.

4.1.3. Asset Approach

The Asset Approach is defined as a way of determining a value indication of a business or business ownership interest using methods based on the value of assets, net of applicable liabilities. The Asset Approach can be applied using the asset accumulation method, which involves the valuation of each of the entity's assets. The Asset Approach is typically considered in situations where a system has a large quantity of tangible assets associated with it, when a grouping of assets is not frequently traded in the market or when other circumstances make this approach applicable to the situation at hand.

The Cost Approach is typically used in conjunction with the asset accumulation method to value tangible property assets. Under the Cost Approach, the value of the assets is typically derived by subtracting the amount of depreciation from the replacement or reproduction cost of the assets. The value estimate under this approach is estimated by the sum of the parts of the system, i.e., physical asset components, property rights, etc. Depreciation in this context represents the loss in value caused by physical deterioration, functional obsolescence, and economic obsolescence. Replacement cost is the current cost of a similar new property having the nearest equivalent utility as the property

[36] Business Valuation Standards, American Society of Appraisers. p.28.
[37] Ibid., p.30.

being valued. Reproduction cost is the current cost of reproducing a new replica of the property being valued using the same or closely similar materials.[38]

There are several methods that are used to estimate the current cost of a property. The Detail Method, also known as the Summation Method, involves assigning a current new cost to each individual component of an asset or property, itemizing, and aggregating the cost of each of the assets so that the sum of the components reflects the cost of the whole. The Trending Method is a method of estimating reproduction cost by indexing or trending historical cost to an estimate of current cost.

Economic obsolescence, sometimes referred to as external obsolescence, is a form of depreciation that reflects the loss in value caused by negative externalities, i.e., factors external to the property, such as economic regulation. These external factors can be temporary or permanent but are almost always incurable.[39] These factors include an increased cost of raw materials, labor or utilities (without an increase in product price), reduced demand for the product, increased competition, environmental or other regulations, or similar factors.[40]

Due to the regulated nature of the private water and wastewater utility sector, the Asset Approach must consider the economic obsolescence of the general practice by state regulatory agencies to limit the rate of return on the unrecouped asset value or rate base that an investor-owned public utility may earn. This is because the ability of a public utility to set rates, generate revenues, and produce income is limited and governed by state regulatory agencies. In general, the buying entity may have a limited opportunity to recover its excess in acquisition cost over rate base due to economic regulation, or a portion may be added as an acquisition premium depending upon the regulator's decision. Even under a scenario where a regulated investor-owned water utility may be acquired by a government entity that is not regulated by a public utility commission, economic obsolescence should still be considered.

There are several methods of estimating economic obsolescence within the Asset Approach. These include the following:

- The Inutility Method
- Comparison of Similar Properties With and Without External Obsolescence
- Capitalization of Income Loss Method

Inutility is a method that measures the impact of unneeded or overcapacity. For example, whenever the operating level of a plant or asset is significantly less than the rated or design capacity, and this condition is expected to persist, the asset may be less valuable than it otherwise would be. The Inutility Method measures the loss of value from this form of economic obsolescence by comparing

[38] Valuing Machinery and Equipment, American Society of Appraisers, The Fundamentals of Appraising Machinery and Technical Assets, American Society of Appraisers, Fourth Edition.
[39] The Appraisal of Real Estate, Appraisal Institute, Fifteenth Edition, 2020 p.591.
[40] Valuing Machinery and Equipment, supra citation 38. p.69.

the actual operating level to the rated capacity of the asset.[41] If a water or wastewater utility has excess capacity but the state regulatory agency allows the utility to include the entire cost of capacity in rate base, then there would not be any economic obsolescence due to inutility.

Comparison of similar properties with and without external obsolescence is another way to estimate economic obsolescence. In this method, economic obsolescence is estimated by comparing the value of the subject property with economic obsolescence with the value of the property without economic obsolescence. This method can be the most persuasive measurement of the effect of negative externalities on value when enough data is available for the analysis to be completed.[42] However, this method can be difficult to apply to public utility assets because there is often a lack of sufficiently comparable transactions with and without external obsolescence that can be compared and analyzed using this method. One potential way of applying this method to water utility assets is to compare purchase prices of recent market transactions of water utilities where state regulatory commissions have applied rules that incentivize the consolidation of utility systems by allowing the purchase price of these utilities to be included in the rate base for rate setting purposes with purchase prices associated with utility transactions where regulatory rules require that the pre- and post-acquisition rate base remain the same at original cost less depreciation rate base. The difference in purchase prices associated with these transactions could be used to estimate economic obsolescence.

The Capitalization of Income Loss Method ("CILM") is an alternative to the direct comparison of properties with and without external obsolescence and measures the reduction in annual income due to the effect of the externality. The procedure for applying this method is comprised of two steps. First, the market is analyzed to quantify the income loss. Next, the loss or reduction in annual net operating income is capitalized to estimate the total amount of economic obsolescence.[43] Economic obsolescence is then subtracted from the Reproduction Cost New Less Depreciation ("RCNLD") estimate to derive the estimate of value under the Asset Approach. Under this approach, the profitability of the subject assets in the current period may be compared to (1) prior periods when there was no identified economic obsolescence, (2) the profitability of guideline companies, or (3) the profitability based on projections that led to the investment decision.

Other methods for quantifying economic obsolescence within the cost approach include the following:[44]

- Analyses of industry returns – compare the returns on invested capital in the industry in which the subject property operates as compared to the returns in industries with similar risk characteristics.
- Analysis of the rate of return that the business, or industry as a whole, experienced historically as compared to the rate of return in the period just prior to the measurement date.
- Analysis of income projections for the subject property at the time of the acquisition, as compared to the actual income performance of the asset, measuring any income shortfall.

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[41] Valuing Machinery and Equipment, supra citation 38, p.68.
[42] The Appraisal of Real Estate, supra citation 39, p.594.
[43] Valuing a Business, Pratt, supra citation 29, p.1104.
[44] Valuing Machinery and Equipment, supra citation 38, p.72.

- Supply / demand relationships – determine if competition is increasing because of a surplus of supply or a decline in demand causing margins to decline and developing a relationship showing a supply / demand imbalance.
- Gross margin analysis – comparing historical or normal gross margin to current or expected gross margin showing how gross margins are declining.
- Stock prices – compare the stock price of companies in the subject industry to a benchmark such as the company net book value, or a similar ratio in the general market to show a lower stock price / net book value ratio for stocks in the subject industry.
- Sales transactions – calculate the magnitude of economic obsolescence for a similar property acquired in the market by comparing the cost indicator of value prior to deducting economic obsolescence to the actual sales price. The difference is economic obsolescence.
- The relationship between replacement cost new and the expected cash flow that the hypothetical replacement facility is capable of generating. Compare the replacement cost new to the income indicator of value for the same property. The difference is economic obsolescence.

These and other methods utilize evidence that the value of the subject property has been reduced by external factors.

5. Valuation of the System

The valuation of the System was prepared considering the approaches and methods described in the previous section. The consideration and use of these approaches and methods for valuing the System is described below. For those methods deemed to be applicable, a summary of the estimation of system value under the method is also presented.

5.1. Hypothetical Willing Buyers

The likely population of hypothetical willing buyers was considered to estimate the fair market value of the System. Both the buyer and seller were considered to be hypothetical parties. The potential benefit that a particular buyer would derive from specific synergies with the subject entity that no other buyer would enjoy was excluded from consideration. This type of value is referred to as investment value.[45] This eliminates the element of a specific tangible benefit (i.e., unique synergies) to one buyer that no other buyers could realize from being considered in the appraisal. In addition, the buyer was assumed to be motivated by the profit opportunity implicit in the subject on a stand-alone basis. This is referred to as a financial buyer, rather than a strategic buyer, and such financial buyers would not consider unique synergistic benefits of a particular buyer arising from the combination of the subject with existing or future holdings.[46] In the water and wastewater market, the likely population of willing buyers in the pool of market participants may include companies that own multiple water systems, and therefore, might expect to derive value from synergistic benefits, but those synergies would not be described as those available only to one buyer.

Based on the characteristics of the System and the utility providers that are likely to invest in the System, the most likely typical willing buyers of the System were identified as either a local municipality, such as the Town or private or investor-owned water utility companies either operating within the Commonwealth of Massachusetts or in other states looking to expand into the Massachusetts market. Investor-owned utilities would likely be interested in acquiring the System if they have the capabilities to operate the System, the financial capital to acquire the System, an opportunity to earn a reasonable return on their investment, and the acquisition was aligned with their strategic goals. Examples of investor-owned water companies that may be interested in acquiring the System include Aqua America owned by Essential Utilities, Aquarion Water Company (subsidiary of Eversource Energy), Connecticut Water Company (subsidiary of SJW Group), among other active participants in the market.

Market data shows that private water companies are much more active in buying and selling utility systems than municipalities. For example, according to a Bluefield Research industry report,[47] private to private water utility transactions dominate the market, representing 60% of the total number of deals between 2015-2018, municipal to private represented another 24% of the deals. Private to municipal only comprised 11% of the deals, with most of those being eminent domain actions, rather than open market transactions. Furthermore, during 2019 to 2020, 199 water and wastewater transactions were identified. Of these, only 23 or

[45] Valuing a Business, Pratt, supra citation 29, p.388.
[46] Valuing a Business, Pratt, supra citation 29, p.327.
[47] Bluefield Research, supra citation 14.

approximately 12% were private to public transactions, and most of these were either small developer built and owned systems or eminent domain transactions.

It was also considered whether potential willing buyers might also include one or a few municipalities, such as the Town. Typically, it is only the municipality operating with jurisdiction within close proximity of the service area of the subject property that may have an interest in acquiring the subject property. We have been unable to locate a single instance in which multiple non-profit or government buyers bid for ownership of a municipally-owned or an investor-owned utility. Generally, municipalities do not have an interest in acquiring water systems outside their political jurisdiction and as such, are not regularly in the business of doing so. However, in this case, the Town was identified as a potential specific buyer.

A municipal utility is typically regulated by a municipal council, commission, or board and acts as a guardian or fiduciary of public funds. As a not-for-profit entity, it typically sets rates to recover costs without profit. Municipal utilities set rates based on cost-of-service, which means that rates are charged to customers reflective of the demands that they place on the system and the costs that they cause the utility to incur.[48] Therefore, if a municipal utility does not pay taxes, for example, then tax recovery is not included in the revenue requirement or utility rates so as not to over-recover the utility's annual revenue requirements. This is reflected in market data that shows that utility rates charged by investor-owned utilities are generally significantly higher than utility rates charged by municipally owned utilities.[49]

In assessing the return on investment required by municipal systems, one can look to the few municipal systems that serve customers outside their jurisdictional boundaries and utilize the utility-basis approach for establishing their revenue requirements. Under the utility-basis approach, the utility recovers capital costs through depreciation and a rate of return on rate base, like an investor-owned utility. The rate of return component compensates the municipal utility for their interest expense and the amount of municipal funds used to fund capital infrastructure for the benefit of outside-jurisdictional customers, i.e., equity capital. A review of the equity returns included in these outside-jurisdictional pricing arrangements reveals that the returns required by municipal entities to serve outside-jurisdictional customers are within the range of investor-owned returns.[50] Furthermore, the risks of ownership of a utility system by a not-for-profit, public entity are similar to the risks of ownership of a utility system by an investor-owned utility.[51] Therefore, one would expect the required equity returns to be similar.

In assessing the capital structure of municipal utility systems, one can look to market data published by major U.S. credit rating agencies. According to a 2020 survey of 180 municipal water and wastewater systems, municipal utilities in the western U.S. and those with strong AAA and AA credit ratings, have debt to net plant asset ratios (i.e., capital structures) of between 27% and 41%, which is similar to the capital structure of investor-owned utilities.[52] Therefore, the most significant difference in a municipal utility's weighted average cost of capital as compared to an investor-owned water utility is the cost of debt, which is typically lower for municipal utilities than investor-owned utilities with the same credit rating because the interest earned by

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[48] Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1. 7th Edition, American Water Works Association, p.3-4.
[49] Water Pricing and Affordability in the US: Public vs. Private Ownership, X. Zhang, M. Gonzalez Rivas, M. Grant, and M.E. Warner, World Water Council, Water Policy Vol 24 No 3. 2022.
[50] 2021 Water and Wastewater Rate Survey, published by American Water Works Association, April 2021.
[51] See Exhibit 7 in Appendix C for a comparison of risks between investor-owned and municipally owned systems.
[52] 2020 Water and Sewer Medians, Fitch Ratings, p.8 & 14.

investors in municipal debt is often tax exempt. However, while a lower cost of debt may be an advantage of a specific potential strategic buyer, it is not considered representative of the pool of typical hypothetical buyers.

In assessing the motives of municipalities that seek to acquire utility systems, we relied on Raftelis' experience working with over 1,200 municipal utilities nationwide. Typically, when a municipal entity is interested in acquiring a water or wastewater system within or adjacent to its municipal boundaries, it looks to the more active market of buying and selling of utilities by investor-owned utilities in assessing utility system value. Simply because a municipal utility may have a lower cost of capital than an investor-owned utility does not mean that the municipality would be willing to pay more for a utility system than the value in the marketplace. As discussed above, municipal entities report to councils, commissions, or boards and act as a guardian or fiduciary of public funds. Furthermore, most municipal entities looking to acquire a nearby utility system do not have motivations of a typical investor-owned company buyer (e.g., no profit motive), and likely may have different strategic objectives (e.g., direct control and oversight over the utility, controlling, reducing, or otherwise mitigating customer utility rates, improving service, more direct connection and communication with customers, and responsiveness, etc.). Based on these motivations, a municipal buyer may be considered a strategic buyer but would not likely offer more than what a typical investor-owned utility may offer.

These considerations suggest that the typical likely hypothetical buyers that would set the price of the HWW System would be private or investor-owned water companies. For the reasons described above, a municipality may be a particular buyer or a strategic buyer of the subject property rather than considered a hypothetical, financial buyer. Therefore, in estimating the fair market value of the System, we considered private or investor-owned utilities as the most likely and typical population of hypothetical willing buyers.

5.2. Income Approach

The valuation estimate under the Income Approach was prepared using the direct capitalization method because the because Raftelis did have access to company management's financial projections and the net earnings and cash flows were expected to be relatively stable over time.

5.2.1. Normalized Cash Flow

Completing the Income Approach using the direct capitalization method required the preparation of a normalized cash flow estimate for the System. The normalized cash flow estimate was prepared based on company financial information, review and analysis of Massachusetts DPU economic regulation of private water companies, and applying our water sector knowledge and experience. The following steps were completed:

1. Relevant past and present financial and operating data available for the System were reviewed, including sources of revenues, operating and capital expenses, depreciation, customer growth and usage patterns, and known or anticipated changes to future operations, customer base, or similar factors.
2. Revenues for the System were normalized to reflect a rate of return on existing rate base consistent with the cost of capital for the System.
3. Operating expenses for the System were normalized by applying cost escalation factor to the historical operating expenses considering the trend in the historical operating expenses over time.

4. An estimate of the normalized debt free net cash flows for the System was prepared based on the normalized revenues and expenses described above. The normalized net cash flow estimate includes consideration that annual capital expenditures will be required to keep the system in good operating condition and in compliance with existing water quality regulations.

The normalized net cash flow estimate used in the direct capitalization method is detailed in Exhibit 7 of Appendix C.

5.2.2. Discount Rate

An analysis of the fair market value of the System considered the cost of capital of the typical population of hypothetical willing buyers, the business and financial risks associated with the System, as well as the rates of return on rate base authorized by the Massachusetts DPU for other water and wastewater systems in Massachusetts. According to Valuing a Business, by Shannon Pratt, 6th Edition, "*allowable rates of return for regulated companies can be viewed as a reasonable benchmark for a minimum boundary of the overall cost of capital.*"[53] This is because allowed rates of return generally are based on public utility commissions' perceptions of the cost of debt capital and the cost of equity capital based on studies by their staffs.

The Massachusetts DPU authorizes a cost of capital for investor-owned water utilities through rate case proceedings. Under DPU economic regulation, an overall rate of return is calculated based on a market-based cost of common equity, and the debt cost rate relative to the applicant's outstanding debt. Then, the overall cost of capital is determined by weighting the cost on equity and the cost of debt based on an authorized capital structure. The latest approved cost of capital for several regulated water utility companies are presented in Table 5-1.

Table 5-1. DPU Approved Capital Structures for Regulated Utilities in Massachusetts

	Class of Capital	% of Total	Cost	Weighted Cost
Housatonic Water Works Company (2016) [54]				
	Long-Term Debt	65.10%	8.42%	5.48%
	Common Equity	34.90%	10.50%	3.66%
	Total			9.14%
Colonial Water Company (2019) [55]				
	Long-Term Debt	50.21%	3.36%	1.69%
	Common Equity	49.79%	10.75%	5.35%
	Total			7.04%
Hutchinson Water, LLC (2019)[56]				
	Long-Term Debt	53.83%	5.50%	2.96%

[53] Valuing a Business, Pratt, supra citation 26, p.248.
[54] MA DPU Decision, Docket 15-179, Petition of Housatonic Water Works Company, Inc. – Approval of a General Rate Increase, October 13, 2016.
[55] MA DPU Decision, Docket 18-105, Petition of Colonial Water Company – Plymouth Division – Approval of a General Rate Increase, August 30, 2019.
[56] MA DPU Offer of Settlement Approval, Docket 18-156, Hutchinson Water, LLC, September 10, 2019.

	Class of Capital	% of Total	Cost	Weighted Cost
	Common Equity	46.17%	10.50%	4.85%
	Total			7.81%
East Northfield Water Company (2020)[57]				
	Long-Term Debt	50.00%	4.75%	2.38%
	Common Equity	50.00%	10.50%	5.25%
	Total			7.63%

An independent analysis was completed to estimate the cost of capital of a proxy group of publicly traded, investor-owned companies that own and operate water utilities, which represent the typical hypothetical willing buyers. The proxy group was selected from the Global Industry Classification Standard (GICS) 551040 - Water Utilities.[58] Companies whose primary business comprised the delivery of public water and wastewater service were selected. The independent analysis involved preparing return of equity estimates using the Build-Up, Modified Capital Asset Pricing Model, and DCF models, as well as an analysis of the cost of corporate debt. These models were used to estimate the equity cost of capital because the models are those that are often used by regulated utility companies to support their cost of capital estimates for rate setting and by investors looking to invest in utility companies.

The results of cost of capital analysis are presented in Exhibits 8 through 10 of Appendix C and indicate an after-tax cost of capital of 7.70% is supportable. The selected rate of return is comparable to the rates of return approved by the Massachusetts DPU in its recent rate case decisions (See Table 5-1).

5.2.3. Long-Term Growth Rate

The long-term growth rate used as part of the income approach is intended to reflect the long-term average growth rate of the future benefits stream for the subject into perpetuity. For regulated public utilities, this growth rate is significantly dependent upon the long-term growth in utility rate base, which is influenced by its capital investment level, long-term inflation, and the growth in number of customers. As discussed in Section 3.5, the projected growth in population and water demands over the next 20 years was estimated to be flat or slightly decreasing. The selection of the long-term growth rate also considered forecasts in expected long-term inflation of approximately 2.5% to 2.6% per annum,[59] and the expected long-term growth in the overall economy as measured by the gross domestic product. The Livingston Survey forecasts a long-term Gross Domestic Product ("GDP") (nominal) growth rate of approximately 4.5%.[60] A long-term growth rate for system cash flows of between the rate of customer growth plus inflation (estimated at approximately 2.3%) and the expected long-term GDP growth rate of approximately 4.5% was considered. However, it is anticipated that long-term growth of the System will be less than the long-term GDP growth rate given the maturity of the utility sector and considering that the potential for long-term customer growth is limited and that earnings growth is tied to utility rate base. Therefore, a long-term growth rate of 3.4% was selected for

[57] MA DPU Decision, Docket 19-57, Petition of East Northfield Water Company – Approval of a General Rate Increase, March 31, 2020.
[58] GICS was developed by S&P Dow Jones Indices, which is an independent international financial data and investment services company, and MSCI, an independent provider of global indices and benchmark-related products and services.
[59] Survey of Professional Forecasters, published by the Philadelphia Federal Reserve Bank of Philadelphia, November 14, 2022.
[60] The Livingston Survey prepared by Federal Reserve Bank of Philadelphia, December 16, 2022.

the System. This growth rate assumes that as cost inflation and rate base associated with the system grows over time, the system will be able to achieve a consistent growth in earnings that corresponds with the estimated Massachusetts DPU allowable rates of return.

5.2.4. Indication of Value Using the Income Approach

The indication of value of the HWW Water System using the Income Approach, as of the valuation date is:

$2,220,000

A summary of the valuation estimate using the direct capitalization method is shown in Table 5-2.

Table 5-2: Valuation Estimate of the System Using the Direct Capitalization Method

Description	Amount
Normalized Debt Free Net Cash Flows[1]	$ 95,538
Discount Rate	7.70%
Growth Rate	3.40%
Value Indicator (Rounded)	$ 2,220,000

[1]Calculated based on the prospective 12 month debt free net cash flows following the date of value. See Exhibit 7 in Appendix C for additional details.

An analysis of the sensitivity of the value indicator to changes in the discount rate and long-term growth rate is presented in Exhibit 11. This analysis shows that the indication of value is sensitive to these key variables. For the reasons described in this Section above and in Section 5.2.2 and 5.2.3, the discount and long-term growth rate estimates used to derive the value indicator using the direct capitalization method are supportable.

5.3. Market Approach

5.3.1. Guideline Company Method

A search was completed for publicly traded water companies listed in the Global Industry Classification Standard ("GICS") 551040 for Water Utilities that were similar to the subject system. The criteria for establishing the relevance of the guideline companies to the System included company comparability and diversity of services and products offered, size, growth, location, and regulatory environment that the company operates under. Based on this research, no publicly traded companies were identified that were sufficiently comparable to the subject assets for use as a value indicator under the Market Approach. Therefore, the guideline company method was not utilized in the Market Approach analysis.

5.3.2. Guideline Transaction Method

A search was completed for utility transactions that were similar to the subject system. The criteria used in filtering the sales transaction information for comparability with the System included the following:

- System. Transactions involving water, wastewater, and combined water and wastewater systems providing retail utility service were considered. Transactions involving multiple types of utility systems

besides water and wastewater systems (e.g., gas and electric) were not considered unless the value of the water and wastewater portion of the system comprised the most significant portion of the utility's operation.

- Location. Transactions that occurred in Massachusetts and in states outside of Massachusetts, if they had similar economic regulation, were considered potentially relevant.
- Size. Transactions that involved water and wastewater systems with similar order-of-magnitude of size as compared to the HWW System were considered potentially relevant. Sales transactions involving much smaller or much larger water systems were generally excluded from consideration or included for only limited purposes.
- Willing Seller. Transactions involving a municipal taking of assets through, or in lieu of, eminent domain were generally excluded because they did not involve a willing seller.
- Transaction Date. Transactions of water and wastewater utility systems within approximately five to eight years of the valuation date were considered potentially relevant. This timeframe was considered reasonable since generally the economic regulation of utilities has remained relatively consistent over the period and the public utility market is generally stable. Older transactions were considered with adjustments to price multiples to reflect current prices given the limited number of relevant transactions that were identified.
- Availability of Information. Transactions where very limited information was available regarding the system, customer base, and details regarding the transaction were excluded from consideration.
- Pending transactions. Transactions that were pending before a PUC were excluded from consideration because the transaction details could change based on the PUC ruling or the PUC could disapprove of the transaction. However, given the limited number of potential transactions, one pending transaction was included as a guideline transaction – the Pinehills Water Company transaction.

Based on our research, we identified 10 potentially relevant transactions for use in the Market Approach. Information on the transaction details were obtained from PUC filings and decisions, annual financial reports, and other similar reports. These transactions were filtered based on the considerations described above, resulting in seven transactions that were considered relevant for use in the Market Approach. A comparison of the fundamental financial results and customer data for the acquired water systems associated with these transactions as compared to the HWW System is provided in Table 5-3. Descriptions of these transactions are provided in Appendix D.

Table 5-3: Fundamental Statistics for Selected Guideline Transactions

Buyer/Seller	State	Type	Transaction Date	Purchase Price	Customer Connections	Net Utility Plant	Operating Revenues	EBITDA	EBIT
Aqua Utilities / Captain's Cove Utility Company Inc	VA	W&WW	8/4/15	$ 2,643	957 / 272	$3,376	$966	$439	$345
CT Water Services / Heritage Village Water Company	CT	W&WW	2/27/17	$19,520	5,128 / 2,972	$28,116	$3,532	$1,077	$592
City of Chesapeake / Aqua Virginia Inc. - Indian River	VA	W	4/14/19	$1,932	505	$1,259	$269	$0	$0
Utilities Inc. / Pennsylvania Utilities	PA	W&WW	6/13/19	$3,141	595 / 596	$3,128	$609	$226	$117

Buyer/Seller	State	Type	Transaction Date	Purchase Price	Customer Connections	Net Utility Plant	Operating Revenues	EBITDA	EBIT
Morgantown Utility Board / River Road Public Service District	WV	W	8/15/19	$2,616	791	$3,425	$502	$208	$52
Suez / Heritage Hills Waterworks Corp.	NY	W	9/24/19	$5,200	2,700	$4,774	$1,458	$326	$176
Aquarion Water Company / Pinehills Water Company	MA	W	1/11/23	$15,000	2,700	$10,706	$2,059	$755	$554
Housatonic Water Works System	MA	W	n/a	n/a	849	$1,698	$720	$158	$65

Purchase Price, Net Utility Plant, Revenues, and earnings before interest and taxes (EBIT), and EBITDA values in $000s.

Net utility plant reflects the original cost of assets less depreciation, net of contributions in aid of construction.

Other statistics for guideline transactions are for the selling company for latest fiscal year ending prior to the transaction date.

Housatonic Water Works statistics based on 2021 Return for Housatonic Water Works that was submitted to the Massachusetts Department of Public Utilities.

In accordance with USPAP, an appraiser must analyze the effect on value of past sales of ownership interests in the business enterprise being appraised.[61] We are not aware of any prior sales of the subject property in the five years prior to the date of this report.

Since the selected transactions occurred over an extended timeframe, adjustments were made to the purchase price per customer connection to adjust to an equivalent price as of the date of value as follows:

- The price for each transaction was documented.
- An inflation adjustment was applied to the purchase price to reflect the passage of time between the transaction date and the valuation date of this report. The average of the Consumer Price Index[62] and the Handy-Whitman Index of Public Utility Construction Costs[63] was used to adjust the prices for inflation for use in the price per connection comparisons.

In valuing the System under the Guideline Transaction Method, the transaction prices were compared based on the following potential value multiples:

- Price to Sales
- Price to Customer Connection
- Price to Original Cost Less Depreciation ("OCLD")
- Price to EBIT
- Price to EBITDA

In the potential value multiples identified above, price was measured by the market value of invested capital ("MVIC"). The MVIC is the market value of equity plus the carrying value of long-term debt. This is

[61] USPAP, supra note 4., Standard Rule 9-4.
[62] Consumer Price Index for All Urban Consumers, U.S. City average, Bureau of Labor Statistics, 2011-2022.
[63] Handy-Whitman Index of Public Utility Construction Costs, Whitman, Requardt & Associates, North Atlantic Region, 2022

sometimes referred to as Enterprise Value. A summary of these potential value multiples is provided in Table 5-4.

Table 5-4: Potential Value Multiples for Guideline Transactions

Transaction[1]	Price[2] ($000s)	Price / Sales	Price / Conn[3]	Price / OCLD[4]	Price / EBITDA	Price / EBIT
Aqua Utilities / Captain's Cove Utility Co	$2,643	2.74	2,862	0.78	6.02	7.65
CT Water Services / Heritage Village Water	$19,520	5.53	3,083	0.69	18.13	32.97
Chesapeake / Aqua Virginia – Indian River	$1,932	7.19	4,600	1.53	n/a	n/a
Utilities Inc. / Pennsylvania Utilities	$3,141	5.15	3,173	1.00	13.92	26.91
Morgantown Utilities Board / River Road	$2,616	5.21	3,970	0.69	12.59	50.18
Suez / Heritage Hills Waterworks Corp	$5,200	3.57	2,310	1.09	15.93	29.62
Aquarion Water Company / Pinehills Water	$15,000	7.29	5,556	1.40	19.88	27.07
Mean	$7,150	5.24	3,648	1.03	14.41	29.07
Median	$3,141	5.21	3,166	1.00	14.93	28.35
Std Deviation		1.57	1,044	0.31	4.47	12.44
Coefficient of Variation[5]		0.30	0.29	0.30	0.31	0.43

[1]Statistics for guideline transactions are for the latest fiscal year ending prior to the transaction date with adjustments.

[2]Price is measured based on market value of invested capital (MVIC), excluding cash and cash equivalents.

[3]For the Price/Connection, the enterprise value reported at the time of the transaction was adjusted from the transaction date to the valuation date of this report to reflect time value of money. An escalation factor was applied based on the average of the published consumer price index and the Handy-Whitman Index.

[4]OCLD is original cost less depreciation.

[5]Coefficient of variation was calculated as the standard deviation / mean and is a measure of the predictive value of the value multiple. The lower the coefficient of variation, the tighter is the data around the mean and the higher the predictive value of the data

Five value multiples were selected. The Price/Connection multiple reflects that the value of a system is related to the number of customer connections, which is supportable because generally the size of the system and value of net plant increases with a larger customer base, and a larger customer base generally provides an opportunity for the owner of the system to have higher cash flows. The Price/Sales multiple reflects that the value of the system is related to the amount of revenues, which is supportable because larger revenues typically correspond to the potential for larger economic benefits. Price/OCLD reflects the invested fixed asset value that is related to the amount of rate base that the systems can earn a return on. Price to EBIT and price to EBITDA were selected because the future benefits of ownership relate to the earnings generated by the company.

The resulting indication of value for the System using the Market Approach is summarized in Table 5-5. Details pertaining to the derivation of each value indicator are provided in Exhibits 12 through 16 of Appendix C.

Table 5-5: Indication of Value Using the Guideline Transaction Method

Description[1]	HWW Parameter[2] (in 000s)		Value Multiple		Indication of Value ($000s)		Weight[3]		Weighted Indication of Value[4]
Price / Sales	$720,259	x	5.21	=	$3,756,148	x	0.20	=	$751,230
Price / Connection	$849,000	x	3.166	=	$2,688,285	x	0.20	=	$537,657
Price / OCLD	$1,663,340	x	1.00	=	$1,669,992	x	0.20	=	$333,998
Price / EBIT	$65,231	x	28.35	=	$1,848,984	x	0.20	=	$369,797
Price / EBITDA	$158,400	x	14.93	=	$2,364,663	x	0.20	=	$472,933
Weighted indication of value							1.00		$2,465,614
Weighted Indication of Value (rounded)									**$2,470,000**

[1]Price is measured based on market value of invested capital (MVIC), excluding cash and cash equivalents.
[2]Estimated as of the valuation date. Shown in $000s for sales and OCLD.
[3]Weighting based on coeficient of variation results.
[4]Values in $000s.

5.3.3. Indication of Value Using the Market Approach

The indication of value of the HWW System using the Market Approach, as of the valuation date is

$2,470,000

5.4. Asset Approach

The HWW Water System has a large quantity of tangible assets associated with it and the specific characteristics make the assets relatively unique in their combination. The assets are dedicated for the specific purpose of the delivery of water services to the residences and businesses within the service area. Therefore, the Asset Approach was deemed to be potentially applicable for consideration of the value of the System.

The steps that were completed to estimate the value of the System under the Asset Approach were as follows:

1. Relevant information regarding the tangible improvements and personal property assets of the system and their use were gathered from the publicly available records.
2. Estimates of reproduction cost new ("RCN") of the assets were prepared using current estimates for construction of a similar set of assets. Reproduction cost new is the cost of reproducing a new replica of a property (or asset) on the basis of current prices with the same or closely similar materials, as of a specific date.[64] In cases where relatively recent construction costs were available, this was completed by applying cost indices to the original cost of the assets.[65] In cases where asset construction values were unavailable, an estimate was made using current construction cost estimates for similar assets.
3. Depreciation estimates associated with the subject assets were made considering two main categories of depreciation: physical deterioration and functional obsolescence. Physical deterioration is a form of depreciation in which the loss of value, or usefulness, of a property is due to the using up or expiration of its useful life caused by wear and tear, deterioration, exposure to various elements,

[64] Valuing Machinery and Equipment, American Society of Appraisers, supra citation 38, p.548.
[65] Ibid.

physical stresses, or similar factors. Depreciation estimates due to physical deterioration were made based on the current age and physical condition of the assets. Functional obsolescence is the loss of value or usefulness caused by inefficiencies or inadequacies of the property itself. Depreciation estimates from functional obsolescence were made based on the operational condition of the assets and regulatory considerations.

4. An assessment of economic obsolescence depreciation was completed using the capitalizing net income loss method. The estimate of economic obsolescence was then subtracted from the asset amounts described above to derive the indication of value under the Asset Approach.
5. Depreciation was deducted from the total RCN estimate to derive a current estimate of depreciated asset cost.
6. An adjustment was made to include the value of intangible assets, e.g., water rights, system reports & records, maps and engineering drawings, etc.

5.4.1. Calculation of RCNLD

A number of assumptions were used in the calculation of RCNLD for assets owned by the HWW System that were constructed decades ago and original construction cost data was unavailable. Similarly, in the case of assets such as distribution piping, where data to support the physical depreciation of individual assets was unavailable, industry standard guidelines were used made to estimate RCNLD based upon the expected life of similar assets in other water systems. The assumptions used are detailed on Tables 5-6 and 5-7.

Table 5-6: RCN and Depreciation Assumptions for Water System Assets

Description	Assumption / Basis
Basis for Calculating RCN	
WTP Assets	Current construction cost estimates for updated plant per AECOM recommendations, less plant expansion and pilot test
Rolling Stock	Original cost new, adjusted for inflation using the CPI Transportation index
Distribution system piping	Current construction cost estimates (See Table 5-7 for details)
Basis for Estimating Depreciation Life	
WTP Assets	60 years, typical life of a blend of concrete, structures, and mechanical systems
Rolling Stock	7 years, expected life of commercial vehicles
Distribution system piping	Varies, industry estimates (See Table 5-7 for details)

Table 5-7: RCN and Depreciation Assumptions for Distribution System Assets[66]

Description	Assumption / Basis
Pipe Unit Costs by Diameter	RCN Estimate ($/LF)[1]
8" or smaller	$275
10"	$285
12" or larger	$300

[66] As included in the 2021 AECOMM Report and CIP Cost Estimates.

Description	Assumption / Basis
Pipe Material Type	Estimated Useful Life[2]
Asbestos Cement/Transite	92.5
Cast Iron	115
Ductile Iron	82.5
PVC	100

[1]Current construction cost estimates for distribution system piping by linear foot, inclusive of valves and hydrants at normal spacing.

[2]Pipe typical life estimates based on median life estimate, from report titled "Buried No Longer - Confronting America's Water Infrastructure Challenge," American Water Works Association, 2012.

The assumptions shown in Tables 5-6 and 5-7 were extended across the HWW System based upon the type and quantity of the assets that comprise the HWW System, as described in Section 2.2 of this report.

5.4.2. Indication of Value Using the Asset Approach

The indication of value using the Asset Approach was derived by adding the estimated values of tangible assets and subtracting depreciation, including physical deterioration, functional obsolescence, and economic obsolescence depreciation. The indication of value as of the valuation date is as summarized in Table 5-8:

Table 5-8: Value Indicator Using the Asset Approach

Asset Categories	Original Cost	Original Cost Less Depr	Reproduction Cost	Reprod Cost Less Depr	Value Estimate
Tangible Property					
Supply and Treatment	$ 1,374,494	n/a	$ 2,536,266	$ 315,286	
Transmission / Distribution	1,010,914	n/a	29,736,274	7,573,681	
Storage	-	n/a	2,641,955	1,541,141	
Hydrants	62,292	n/a	Inc in T&D	Inc in T&D	
Meters & Services[1]	368,500	n/a	325,425	227,798	
Rolling Stock / Vehicles	124,718	n/a	111,655	63,517	
Other Misc	109,072	-	109,072	97,214	
Subtotal Tangible Property	$ 3,049,990	$ 1,698,816	$ 35,460,648	$ 9,818,637	$ 9,818,637
Land / Real Estate[2]	3,757	n/a	n/a	n/a	448,100
Intangible Assets					
Intangible Plant[3]	94,151	94,151	94,151	94,151	94,151
Subtotal	$ 3,147,898	$ 1,792,967	$ 35,554,799	$ 9,912,788	$ 10,360,888
Less: Economic Obsolescence (From Exhibit 17)				71%	(7,356,230)
Value Indicator (Rounded)					**$ 3,005,000**

[1]Services reflect those services owned by HWW and exclude services owned by customers.

[2]Estimate of the current market value of real estate from information provided by the Town Assssor's office.

[3]Includes organization, franchises & consents, water rights, water distribution monitering, corrosion control, manganese project costs, and other intangible plant as reported in the HWW 2021 Return Statement.

5.5. Adjustments

5.5.1. Adjustment for Lack of Control

The subject interest that is valued in this report is the 100% interest, ownership, and control of the System. Therefore, no adjustment or discount for lack of control of the subject interest was applied.

5.5.2. Adjustment for Lack of Marketability

Ownership of an interest in the assets in a special purpose market may not be readily marketable, and therefore, a discount for lack of marketability ("DLOM") may be appropriate for the determination of a conclusion of value of the subject assets. Theoretically, the use of a DLOM arises from the risks associated with a potential sale of the subject assets. These risks can generally be categorized as follows:[67]

- Uncertainty in operating condition and function of the assets
- Uncertainty in the time horizon to complete a sale
- Cost to prepare for and execute a sale
- Risk as to the eventual sale price and future expenses
- Non-cash and deferred transaction proceeds
- Inability to borrow against the estimated value of the assets

These categories can be viewed as the absence of a ready or existing market for the sale or purchase of the subject assets in contrast to the purchase of a publicly traded stock interest. Some of the common factors that have been identified as impacting marketability that are applicable to the subject assets are provided in Table 5-9.[68]

Table 5-9: Marketability Factors and Analysis Summary

Marketability Factor	Assessment
Dividend Paying History	Not applicable
Dividend Yield	Not applicable
Attractiveness of the subject business	Fair (the water sector risk and returns are low to moderate)
Attractiveness of the industry	Good (stable)
Prosects of a sale or public offering	Fair (contingent on potential buyers)
Number of identifiable buyers	Fair to Poor (limited number of potential buyers)
Availability of access to reliable information	Good (readily available subject system information)
Management	Not applicable / Not assessed
Earnings	Variable (impacted by the ability to secure utility rate increases and by large capital reinvestment needs)

[67] Ibid.
[68] Discount for Lack of Marketability: Job Aid for Valuation Professionals. Internal Revenue Service. September 2009. Page 6.

Marketability Factor	Assessment
Revenues	Stable
Financial condition	Stable
% of Shares held by insiders	Not applicable
% of Independent directors	Not applicable
Business Risk	Fair

The application of a DLOM in an appraisal is relatively subjective and can range from zero (0%) to approximately 40% or more depending upon the marketability factors identified above and the circumstances associated with the subject assets. Based on my review of the marketability factors, the marketability of the System is fair to poor with expected limited interest in the market by potential buyers of the System. Therefore, a DLOM adjustment of 10% was applied to the value conclusion.

5.6. Summary and Conclusions of Value

The opinion of value of the HWW System as of the valuation date (January 1, 2023) is $2,300,000, as summarized in Table 5-10. This conclusion of value was based on the consideration of the value indicators using the Income, Market, and Asset Approaches. More reliance was placed on the Income Approach than the Asset Approach and the Market Approach due to (1) the relative appropriateness of the approaches applied; (2) the availability and anticipated accuracy of the data collected, and the calculations made under each approach; and the (3) the quantity and relevance of the data available for each approach.

A hypothetical willing buyer will look to the market for guideline companies and transactions in considering the value of the System. However, my opinion relied upon the Market Approach but gave consideration to the limited number of relevant guideline transactions that were identified, and their quality and comparability to the HWW System.

My opinion of value also relied upon the Asset Approach with consideration of prevalence of economic obsolescence. The economic obsolescence analysis indicates that the RCNLD estimate of the tangible property without considering economic obsolescence significantly overstates the value of the HWW System. The conclusion on economic obsolescence is supported by the economic obsolescence analysis presented and the fact that private utility companies in Massachusetts are generally allowed to generate a rate of return on rate base that is valued at OCLD rather than RCNLD. Furthermore, OCLD typically has a closer relationship to the purchase price in most situations than RCNLD since rate base for private water utilities in Massachusetts is primarily comprised of OCLD. Due to the significant presence of economic obsolescence and the inter-relationship of the economic obsolescence measure to the Income Approach, the Asset Approach was relied upon to a lesser extent than the Income Approach.

Table 5-10: Estimated Value of the HWW System

Description	Value Indicator	x	Weighting	=	Weighted Value
Income Approach					
Direct Capitalization Method	$ 2,220,000		50%		$ 1,110,000
Market Approach					
Guideline Transaction Method	2,470,000		20%		494,000
Asset Approach					
Asset Accumulation Method	3,005,000		30%		901,500
Subtotal					$ 2,505,500
Discount for Lack of Marketability (DLOM)			10%		(250,550)
Opinion of Value (Rounded)					**$ 2,300,000**

6. Valuation Conclusion

Based on the valuation analyses contained in this report, the fair market value of the HWW System is:

$2,300,000

This conclusion of value consists of compensation amounts for the operating assets of the System, including tangible improvements, personal property (e.g., vehicles, equipment, office furnishings, inventory, etc.), real estate, and intangible assets as an assembled portfolio in use as a water utility system.

This finding and conclusion is qualified and subject to change per the assumptions and limiting conditions identified and described throughout this report. This report is qualified in its entirety by, and should be considered in light of, these assumptions and limitations.

APPENDIX A:

Valuation Representation

Valuation Representation

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions. Any statement in this report involving estimates or matters of opinion, whether so specifically designated, are intended as such, and not as representation of fact.
3. I have no present or prospective interest in the property that is the subject of this report, and we have no personal interest with respect of the parties involved.
4. I have not provided services as an appraiser or in any other capacity in connection with the subject property within the three-year period immediately preceding the agreement to perform this assignment.
5. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
6. The engagement in this assignment was not contingent upon developing or reporting predetermined results.
7. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this valuation assessment.
8. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
9. Toby Fedder and Phil Sapone provided significant assistance in researching the subject, guideline companies, and transaction information, and in completing the asset approach. No others provided significant assistance in the preparation of this report.
10. In preparation of this report and the conclusions contained herein, I have relied on certain assumptions and information with respect to conditions which may exist or events which may occur in the future. While I believe such assumptions are reasonable, sources are reliable, and the information obtained to be accurate and appropriate for the analysis undertaken and the conclusions reached herein, as is often the case, there may be differences between actual and projected results, some estimates used in this report may not be realized, and unanticipated events and circumstances may occur.
11. This report summarizes the work completed up to the date of the issuance of this report. Changed conditions occurring or becoming known after such date could affect the opinions and conclusions contained herein to the extent of such changes. I have no responsibility for updating this report for changes that occur after the date of this report.

Raftelis Financial Consultants, Inc.
By: _____ February 28, 2023
John M. Mastracchio, ASA, CFA, PE

APPENDIX B:

Professional Qualifications of the Principal Valuation Analyst

John Mastracchio ASA, CFA, PE

Executive Vice President

Specialties

- Transactional due diligence support
- Valuation and appraisals
- Financial analysis & modeling
- Financial planning, cost of service, rate design
- Bond feasibility studies
- Government consolidation/regionalization
- Public-private partnerships
- Inter-municipal agreement support
- Expert witness & litigation support
- Benchmarking
- Capital financing & project planning
- Business process improvement
- Asset management/business case evaluations

Professional History

- Raftelis: Vice President (2017-present)
- Arcadis, U.S., Inc. (2003-2017)
- Arthur Andersen (2001-2002)
- Parsons Corporation (1994-2000)

Education

- Master of Business Administration, Finance - Cornell University (2001)
- Master of Science, Civil & Environmental Engineering - Clarkson University (1994)
- Bachelor of Arts - State University of New York, College at Geneseo (1993)

Certifications

- Accredited Senior Appraiser (ASA)
- Chartered Financial Analyst (CFA)
- Professional Engineer (PA)
- Lean Six Sigma
- Series 50 Municipal Advisor Representative

Professional Memberships

- American Society of Appraisers
- AWWA: Chair of Finance, Accounting, & Management Controls Committee
- CFA Institute
- Water Environment Federation

PROFILE

Mr. Mastracchio is an Executive Vice President with Raftelis Financial Consultants, Inc. serving in a national role and leading the Northeast practice. He has 27 years of experience as a financial and management consultant serving the utility, governmental, and private sectors. His extensive experience includes over 250 financial projects covering technical areas including utility valuation, investment decision-making, transactional consulting, capital financing, financial planning, cost of service and rate studies, alternative project delivery procurement support, capital financing, and financial analysis. His experience spans several industries, including utilities (water, wastewater, electric, solid waste, stormwater), transportation, ports, and federal and municipal general government.

Mr. Mastracchio's business valuation experience includes appraisals for mergers and acquisitions, reorganizations (recapitalization and restructuring), eminent domain condemnation, real estate, tangible property valuation, cost to cure economic damages analyses, and litigation support. His valuation experience also includes providing acquisition and transactional advisory services to equity investors, business owners, and government officials on deals ranging in size from $2 million to $2.5 billion. He has provided other valuation-related services include due diligence investigations, development of financial projections, remaining useful life analyses, customer and supplier contracts, purchase price allocation, strategic investment decision-making, and deal structuring support, including the following representative appraisal experience:

- NY Wastewater Utility
- CT Water Utilities (Multiple)
- MA Water Utility
- PA Water & Wastewater Utilities (Multiple)
- AZ Water & Wastewater Utilities (Multiple)
- VA Water & Utilities (Multiple)
- CA Water & Wastewater Utilities (Multiple)
- TX Water & Wastewater Utilities (Multiple)

Mr. Mastracchio is an Accredited Senior Appraiser (ASA), has earned the Chartered Financial Analyst (CFA) designation, is a Series 50 Municipal Advisor Representative, and is also a Licensed Professional Engineer. He is a member of several industry associations, including the CFA Institute, and American Water Works Association, and is the past chairperson of the Finance, Accounting, and Management Controls Committee of AWWA.

He has authored manuals of practice and utility industry papers on valuation, infrastructure investment, capital financing, financial management practices, and rate-setting, including a technical paper titled "How much is it worth? An overview of valuing water utilities," an industry research report titled "New and Emerging Capital Providers for Infrastructure Funding – Addressing the Infrastructure Gap," and an industry manual of practice titled "Water Capital Financing, Manual of Practice M29."

APPENDIX C:

Supporting Schedules and Exhibits

Exhibit 1: Historical HWW Water Accounts

Municipality	2017	2018	2019	2020	2021
Housatonic	749	753	753	753	750
Stockbridge	23	23	23	23	23
West Stockbridge	66	66	66	66	66
Vacancies	10	10	10	10	10
Total	848	852	852	852	849

Source: Annual Report of Housatonic Water Works Company - 2017-2021.

Exhibit 2: Historical Balance Sheets for HWW

Description	As of Fiscal Year End December 31 FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
ASSETS					
Investments					
Plant Investment	$ 2,596,663	$ 2,769,620	$ 2,799,659	$ 2,802,435	$ 2,819,957
General Equipment	196,812	197,388	206,251	206,251	233,790
Unfinished Construction	108,763	30,150	37,155	37,155	-
Miscellaneous Physical Property	-	-	-	-	-
Other Investments	62,952	59,788	60,490	60,621	130,085
Net Capital Assets	$ 2,965,190	$ 3,056,946	$ 3,103,555	$ 3,106,462	$ 3,183,832
Current Assets					
Cash	$ 102,431	$ 73,330	$ 61,428	$ 189,977	$ 148,449
Special Deposits	-	-	-	-	-
Notes Receivable	679,205	777,634	813,255	782,300	675,291
Accounts Receivable	124,703	123,723	132,187	140,388	151,942
Interest and Dividends Receivable	-	-	-	-	-
Materials and Supplies	70,888	32,895	26,969	23,921	21,198
Other Current Assets	6,020	4,988	4,988	4,988	7,973
Total Current Assets	$ 983,247	$ 1,012,570	$ 1,038,827	$ 1,141,574	$ 1,004,853
Reserve Funds					
Sinking Funds	$ -	$ -	$ -	$ -	$ -
Insurance and Other Funds	-	-	-	-	-
Total Reserve Funds	$ -	$ -	$ -	$ -	$ -
Prepaid Accounts					
Prepaid Insurance	$ 1,936	$ 2,580	$ 1,464	$ 7,803	$ 8,920
Prepaid Interest	-	-	-	-	-
Other Prepayments	2,917	3,538	4,887	5,212	1,837
Total Prepaid Accounts	$ 4,853	$ 6,118	$ 6,351	$ 13,015	$ 10,757
Unadjusted Debits					
Unamortized Dept Discount Exp	$ 19,156	$ 17,642	$ 16,128	$ 14,615	$ 13,101
Property Abandoned	-	-	-	-	-
Other Unadjusted Debits	168,989	187,556	168,795	147,875	367,939
Total Unadjusted Debits	$ 188,145	$ 205,198	$ 184,923	$ 162,490	$ 381,040
TOTAL ASSETS	$ 4,141,435	$ 4,280,832	$ 4,333,656	$ 4,423,541	$ 4,580,482

Exhibit 2: Historical Balance Sheets for HWW (Cont'd)

Description	As of Fiscal Year End December 31 FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
LIABILITIES AND NET POSITION					
Capital Stock					
Common Stock	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Preferred Stock	-	-	-	-	-
Employees' Stock	-	-	-	-	-
Total Capital Stock	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Bonds, Coupon, and Long-Term Notes					
Bonds, Coupon, and Long-Term Notes	$ -	$ -	$ -	$ -	$ -
Coupon and Long Term Notes	1,158,559	1,036,260	928,021	942,347	829,207
Total Bonds, Coupons, and Long-Term Notes	$ 1,158,559	$ 1,036,260	$ 928,021	$ 942,347	$ 829,207
Current Liabilities					
Notes Payable	$ -	$ -	$ -	$ -	$ -
Accounts Payable	76,927	107,221	64,089	10,190	25,408
Customers' Deposits	-	-	-	-	-
Matured Interest Unpaid	-	-	-	-	-
Dividends Declared	-	-	-	-	-
Other Current Liabilities	-	-	-	-	-
Total Current Liabilities	$ 76,927	$ 107,221	$ 64,089	$ 10,190	$ 25,408
Accrued Liabilities					
Tax Liability	$ -	$ 22,745	$ 42,438	44,457	9,800
Interest Accrued	5,191	5,553	4,720	3,732	3,201
Other Accrued Liabilities	1,437,865	1,622,838	1,771,663	1,874,519	1,968,870
Total Accrued Liabilities	$ 1,443,056	$ 1,651,136	$ 1,818,821	$ 1,922,708	$ 1,981,871
Unadjusted Credits					
Premium on Bonds	$ -	$ -	$ -	$ -	$ -
Other Unadjusted Credits	373,422	405,525	404,066	388,574	63,544
Total Unadjusted Credits	$ 373,422	$ 405,525	$ 404,066	$ 388,574	$ 63,544
Reserves					
Insurance and Casualty Reserves	$ -	$ -	$ -	$ -	$ -
Depreciation Reserve	1,077,150	1,121,903	1,189,518	1,272,790	1,354,931
Other Reserves	-	-	-	-	-
Total Reserves	$ 1,077,150	$ 1,121,903	$ 1,189,518	$ 1,272,790	$ 1,354,931
Appropriated Surplus					
Sinking Fund Reserves	$ -	$ -	$ -	$ -	$ -
Contributions for Extensions	202,876	202,876	202,876	202,876	147,303
Surplus Invested In Plant	-	-	-	-	-
Total Appropriated Surplus	$ 202,876	$ 202,876	$ 202,876	$ 202,876	$ 147,303
Profit and Loss Balance	$ (230,555)	$ (284,089)	$ (313,735)	$ (355,944)	$ 138,218
TOTAL LIABILITIES AND NET POSITION	$ 4,141,435	$ 4,280,832	$ 4,333,656	$ 4,423,541	$ 4,580,482

Source: Annual Report of Housatonic Water Works Company - 2017-2021.

Exhibit 3: Historical Income Statements for HWW

Description	For the Year Ending December 31st FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenues:					
Revenues from Sale of Water					
Metered Sales to General Consumers	$ 552,029	$ 556,781	$ 579,565	$ 632,026	$ 625,562
Flat-Rate Sales to General Consumers	42,458	42,518	44,806	46,438	46,737
Sales to Other Water Companies	-	-	-	-	-
Municipal Hydrants	44,642	46,015	48,009	50,017	47,960
Miscellaneous Municipal Revenues	-	-	-	-	-
Total Revenues from Sale of Water	$ 639,129	$ 645,314	$ 672,380	$ 728,481	$ 720,259
Miscellaneous Revenues					
Rent from Property Used in Operations	$ -	$ -	$ -	$ -	$ -
Miscellaneous Operating Revenues	-	-	-	5,900	-
Total Miscellaneous Revenues	$ -	$ -	$ -	$ 5,900	$ -
Total Revenues	$ 639,129	$ 645,314	$ 672,380	$ 734,381	$ 720,259
Expenses:					
Source of Water Supply	$ 2,825	$ 5,466	$ 2,900	$ 5,048	$ -
Pumping	31,901	37,306	32,440	15,523	16,547
Purification	51,966	69,071	58,342	44,116	51,138
Transmission and Distribution	1,638	19,486	4,770	4,930	44,515
General and Miscellaneous	370,412	443,349	486,307	612,669	605,322
Total Operating Expenses	$ 458,742	$ 574,678	$ 584,759	$ 682,286	$ 717,522
Non-Operating Income:					
Mdse. And Jobbing Revenue	$ -	$ -	$ -	$ -	$ -
Rent from Appliances	-	-	-	-	-
Miscellaneous Rent Income	-	-	-	-	-
Interest and Dividend Income	6,365	15,662	19,799	6,197	2,086
Inc. from Sink. And Other Res. Funds	-	-	-	-	-
Amortization of Premium on Bonds	-	-	-	-	-
Miscellaneous Non-Operating Income	9,116	4,890	1,021	10,091	23,361
Total Non-Operating Revenues	$ 15,481	$ 20,552	$ 20,820	$ 16,288	$ 25,447
Non-Operating Expense:					
Miscellaneous Rents	$ -	$ -	$ -	$ -	$ -
Interest on Bonds and Coupon Notes	49,831	72,938	63,430	56,136	48,200
Miscellaneous Interest Deductions	-	-	-	-	-
Amortization of Discount	1,104	1,514	1,514	1,514	1,514
Miscellaneous Deductions from Income	-	-	-	-	-
Total Non-Operating Expenses	$ 50,935	$ 74,452	$ 64,944	$ 57,650	$ 49,714
Taxes	$ 141,131	$ 70,270	$ 73,143	$ 52,942	$ 20,975
Change in Net Position	$ 3,802	$ (53,534)	$ (29,646)	$ (42,209)	$ (42,505)

Source: Annual Report of Housatonic Water Works Company - 2017-2021.

Exhibit 4: Historical Rate Base for HWW

Description	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Intangible Property:					
Beginning					
Organization	$ -	$ -	$ -	$ -	$ -
Misc Intangible Invest	-	-	-	-	-
Total Beginning	$ -	$ -	$ -	$ -	$ -
Plus: Additions	-	-	-	-	-
Plus: Adjustments	-	-	-	-	-
Less: Disposals	-	-	-	-	-
Less: Adjustments	-	-	-	-	-
Ending	$ -	$ -	$ -	$ -	$ -
Tangble Property:					
Beginning					
Land	$ 3,757	$ 3,757	$ 3,757	$ 3,757	$ 3,757
Structures	1,089,694	1,089,194	1,089,194	1,089,194	1,102,557
Pumping Plant Equipment	67,184	67,184	67,184	69,735	69,735
Misc. Pumping Plant Equipment	-	-	-	-	-
Purification System	152,869	152,869	184,571	189,557	202,202
Transmission and Distribution Mains	605,030	895,233	1,001,300	1,001,300	1,001,300
Services	34,200	34,200	34,200	34,200	34,200
Consumers' Meters	102,670	192,484	213,586	223,492	199,060
Consumers' Meter Installation	49,157	114,904	128,990	134,040	135,240
Hydrants	39,232	44,838	44,838	52,384	52,384
Fire Cisterns, Basins, Fountains	-	-	-	-	-
Water Rights	2,000	2,000	2,000	2,000	2,000
Miscellaneous Expenditures	-	-	-	-	-
Total Beginning	$ 2,145,793	$ 2,596,663	$ 2,769,620	$ 2,799,659	$ 2,802,435
Plus: Additions	569,123	109,935	30,039	30,256	19,522
Plus: Adjustments	-	97,390	-	-	-
Less: Disposals	(118,253)	(34,368)	-	-	-
Less: Adjustments	-	-	-	(27,480)	(2,000)
Ending	$ 2,596,663	$ 2,769,620	$ 2,799,659	$ 2,802,435	$ 2,819,957
General Equipment:					
Beginning					
Office Equipment	$ 42,316	$ 25,027	$ 25,027	$ 22,423	$ 22,423
Shop Equipment	-	-	-	-	-
Stores Equipment	-	-	-	-	-
Transportation Equipment	75,262	89,994	89,994	100,712	100,712
Laboratory Equipment	-	-	-	-	-
Miscellaneous Equipment	86,117	81,791	82,367	83,116	83,116
Total Beginning	$ 203,695	$ 196,812	$ 197,388	$ 206,251	$ 206,251
Plus: Additions	35,481	576	48,371	-	60,863
Plus: Adjustments	-	-	-	-	-
Less: Disposals	(42,364)	-	(39,508)	-	(33,324)
Less: Adjustments	-	-	-	-	-
Ending	$ 196,812	$ 197,388	$ 206,251	$ 206,251	$ 233,790
Unfinished Construction					
Total Beginning	$ -	$ 108,763	$ 30,150	$ 37,155	$ 37,155
Plus: Additions	108,763	18,777	7,005	-	-
Plus: Adjustments	-	-	-	-	-
Less: Disposals	-	-	-	-	-
Less: Adjustments	-	(97,390)	-	-	(37,155)
Ending	$ 108,763	$ 30,150	$ 37,155	$ 37,155	$ -
Total Balance	$ 2,902,238	$ 2,997,158	$ 3,043,065	$ 3,045,841	$ 3,053,747
Depreciation Reserve	$ (1,077,150)	$ (1,121,903)	$ (1,189,518)	$ (1,272,789)	$ (1,354,931)
TOTAL RATE BASE	$ 1,825,088	$ 1,875,255	$ 1,853,547	$ 1,773,052	$ 1,698,816

Source: Annual Report of Housatonic Water Works Company - 2017-2021.

Exhibit 5: Historical EBITDA and Cash Flow for HWW

Description	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Total Revenues	$ 654,610	$ 665,866	$ 693,200	$ 750,669	$ 745,706
Less: Operating Expenses	458,742	574,678	584,759	682,286	717,522
Gross Margin	$ 195,868	$ 91,188	$ 108,441	$ 68,383	$ 28,184
Add: Depr and Amort Expenses	61,783	76,353	79,743	84,920	93,169
EBITDA	$ 257,651	$ 167,541	$ 188,184	$ 153,303	$ 121,353
EBITDA / Sales Ratio	39.4%	25.2%	27.1%	20.4%	16.3%
Net Income (Before Transfers)	$ 3,802	$ (53,534)	$ (29,646)	$ (42,209)	$ (42,505)
Add: Depr and Amort Expenses	62,887	77,867	81,257	86,434	94,683
Add: Interest Expense	49,831	72,938	63,430	56,136	48,200
Less: Working Capital Additions[1]	14,492	14,492	1,260	12,191	4,405
Less: Capital Additions	(713,367)	(129,288)	(85,415)	(30,256)	(80,385)
Debt Free Net Cash Flows	$ (582,355)	$ (17,525)	$ 30,886	$ 82,296	$ 24,398

[1]Assumes 45 days of working capital. Additions calculated as increases in operating expense x 45/360 .

Exhibit 6: Historical Financial Ratio Analysis for the HWW

	For the Year Ending December 31st				
Description	2017	2018	2019	2020	2021
Profitability					
Net Income Margin	0.6%	-8.3%	-4.4%	-5.7%	-5.9%
Asset Turnover	35.0%	34.4%	36.3%	41.4%	42.4%
Return on Assets	0.2%	-2.9%	-1.6%	-2.4%	-2.5%
Financial Leverage	94.0	-25.1	-13.1	-8.3	2.5
Return on Equity	30.9%	129.9%	41.8%	37.3%	-13.1%
Growth - YOY					
Customer Accounts	n/a	0.5%	0.0%	0.0%	-0.4%
Total Assets	n/a	3.4%	1.2%	2.1%	3.5%
Sales Growth	n/a	1.0%	4.2%	9.2%	-1.9%
Net Income Growth	n/a	-1508.0%	-44.6%	42.4%	0.7%

Exhibit 7: Normalized Net Cash Flows for the HWW System

Description	FY 2020[1]	FY 2021[1]	Normalized[2]
Operating Revenues:			
User Rates, Fees, and Charges-	$ 678,464	$ 672,299	$ 772,573
Hydrant Rentals	50,017	47,960	47,960
Miscellaneous	5,900	-	1,126
Operating Revenues	$ 734,381	$ 720,259	$ 821,659
Expenses:			
Source of Water Supply	$ 5,048	$ -	$ 5,500
Pumping	15,523	16,547	17,521
Purification	44,116	51,138	54,147
Transmission and Distribution	4,930	44,515	47,134
General and Miscellaneous	442,829	418,984	393,637
Depreciation Expense	84,920	93,169	81,502
Taxes Other than Income	27,851	30,675	32,480
Expenses	$ 625,217	$ 655,028	$ 631,921
Net Operating Income	$ 109,164	$ 65,231	$ 189,737
Non-Operating Income and Expenses			
Interest and Dividend Income	$ 6,197	$ 2,086	$ -
Miscellaneous Income	10,091	23,361	-
Interest Expense	56,136	48,200	43,832
Amortization of Discount	1,514	1,514	-
Pre-Tax Income	$ 67,802	$ 40,964	$ 145,905
Income Taxes	25,091	(9,700)	39,861
Net Income	$ 42,711	$ 50,664	$ 106,044
Debt Free Net Cash Flow			
Net Income	$ 42,711	$ 50,664	$ 106,044
Plus: Depreciation	84,920	93,169	81,502
Plus: Interest Expense	56,136	48,200	43,832
Less: Working Capital Additions	11,947	3,726	2,177
Net Cash Flow - Before CAPEX	$ 171,820	$ 188,307	$ 229,202
Less: Annualized CapEx	30,256	80,385	133,663
Net Cash Flow	$ 141,564	$ 107,922	$ 95,538

[1]FY 2020 and FY 2021 revenues, expenses, net income, and net cash flow from HWW Return Statements submitted to the Massachusetts DPU.

[2]Normalized income and net cash flow assumes that revenues recover O&M and depreciation expense, and provide an 7.7% return on rate base. Annualized recurring CAPEX was assumed to be approximately 1.6 times depreciation, consistent with water sector medians.

Exhibit 8: Cost of Equity Analysis

Modified CAPM Method:

$k_e = R_f + \beta \times (RP_m) + RP_s + RP_c$

R_f = Risk-free rate
β = Beta (measurement of systematic risk)
RP_m = Equity risk premium
RP_s = Size premium
RP_c = Company-specific risk premium

R_f =	3.69%	*Spot 20-Year Treasury Yield, from Kroll Cost of Capital Navigator.*
β =	0.52	*Full-information Beta, from Kroll Cost of Capital Navigator.*
RP_m =	6.00%	*Kroll recommended, from Kroll Cost of Capital Navigator.*
RP_s =	4.80%	*Decile 10 (Market Cap of $10.588M - $289.007M), from Kroll Cost of Capital Navigator, 2023.*
RP_c =	0.00%	*Premium for Company-Specific Risk.*
k_e	**11.61%**	

Build-Up Method:

$k_e = R_f + RP_m + RP_s + RP_i + RP_c$

R_f = Risk-free rate
RP_m = Equity risk premium
RP_s = Size premium
RP_i = Industry-specific risk premium
RP_c = Equity risk premium

Build-Up Method 1:

R_f =	3.50%	*Kroll Normalized risk-free rate applies expected inflation forecasts to long-term real interest rates.*
RP_m =	6.00%	*Kroll estimated ERP using various historical, supply-side, and implied estimates of ERP. See Exhibit 16.*
RP_i =	-3.06%	*GICS 551040 Median Vasicek-Adjusted Beta. From Kroll Cost of Capital Navigator.*
RP_s =	4.80%	*Decile 10 (Market Cap of $10.6M - $289M). Kroll Cost of Capital Navigator. See Exhibit 9.*
RP_c =	0.00%	*See report text for description and rationale.*
k_e	**11.24%**	

Build-Up Method 2:

R_f =	4.09%	*Spot 20-Year Treasury Yield, from Kroll Cost of Capital Navigator.*
RP_m =	6.22%	*Supply-side long-term ERP. From Kroll Cost of Capital Navigator, 2022.*
RP_i =	-3.06%	*GICS 551040 Median Vasicek-Adjusted Beta. From Kroll Cost of Capital Navigator.*
RP_s =	4.80%	*Decile 10 (Market Cap of $10.6M - $289M). Kroll Cost of Capital Navigator. See Exhibit 9.*
RP_c =	0.00%	*Premium for Company-Specific Risk.*
k_e	**12.05%**	

DCF Method:

$k_e = (D_1 / P_0) + g + RPs + RP_c$

$D_1 / P_0 + g$ =	8.16%	*Dividend yield of Guideline Public Companies = Earnings per share growth forecasted by Value Line for GPTCs.*
RP_s =	3.46%	*Decile 10 (Market Cap of $10.6M - $289M). Kroll Cost of Capital Navigator. See Exhibit 9.*
RP_c =	0.00%	*Premium for Company-Specific Risk.*
k_e	**11.62%**	

k_e Median	11.60%
k_e Average	11.60%
Select	11.60%

Exhibit 9: Center for Research in Security Prices (CRSP) Size Premiums by Deciles

Description	Market Capitalization Range Smallest Company	Largest Company	Decile	Size Premium (Return in Excess of CAPM)
	(in $1,000s)	(in $1,000s)		
1	$ 36,160,584	$ 2,324,390,219	1	-0.22%
2	1,675,939	36,099,221	2	0.43%
3	8,216,356	16,738,364	3	0.55%
4	5,019,883	8,212,638	4	0.54%
5	3,281,009	5,003,747	5	0.89%
6	2,170,315	3,276,553	6	1.18%
7	1,306,402	2,164,524	7	1.34%
8	629,118	1,306,038	8	1.21%
9	290,002	627,803	9	2.10%
10	10,588	289,007	10	4.80%
Breakdown of the 10th Decile:				
10A	190,487	289,007	10A	3.31%
	251,715	289,007	10w	2.34%
	190,487	251,505	10x	4.54%
10B	10,588	190,440	10B	7.89%
	127,920	190,440	10y	6.34%
	10,588	127,729	10z	11.17%
Proxy Group	298,676	28,252,514	2 - 9	0.43% - 2.10%
Proxy Group Median		1,105,860	7	1.34%
Housatonic Water Works		<289,007	10	4.80%
Size Premium Spread				3.46%

Source: Kroll Cost of Capital Navigator, Accessed 12/30/22.

Exhibit 10: Weighted Average Cost of Capital

Weighted Average Cost of Capital:

WACC = (k_e x W_e) + (k_d [1-t] x W_d)

k_e = cost of equity

W_e = weight equity capital in the capital structure

k_d = cost of debt capital (pre-tax)

t = income tax rate

W_d = weight of debt capital in the capital structure

k_d =	4.80%	*From cost of debt calculations. Based on A-rated corporate debt. See k_d tab.*
k_e =	11.60%	*From cost of equity calculations. See K_e tab.*
D/E =	1.00	*Recent Mass DPU approved capital structures. See Table 5-1.*
W_d =	50.0%	*Calculated.*
W_e =	50.0%	*Calculated.*
t =	21.0%	*Federal corporate tax rate of 21%*
st=	8.0%	*Massachusetts corporate tax rate of 8.0%.*
Eff t =	27.3%	Effective Tax Rate

Component	Capital Structure	Cost of Capital	Tax Rate	After Tax Cost of Capital	Contribution to Weighted Average
Debt	50.0%	4.80%	21.0%	3.79%	1.90%
Equity	50.0%	11.60%	n/a	11.60%	5.80%
WACC					**7.70%**
Select					**7.70%**

Exhibit 11: Sensitivity Analysis of the Direct Capitalization Value Indicator

HWW Indication of System Value

		Long-Term Growth Rate										
	$2,220	2.15%	2.40%	2.65%	2.90%	3.15%	**3.40%**	3.65%	3.90%	4.15%	4.40%	4.65%
Discount Rate	6.70%	1,800	1,900	2,020	2,150	2,300	2,480	2,680	2,920	3,210	3,550	3,990
	6.90%	1,780	1,880	1,990	2,110	2,250	2,410	2,600	2,820	3,070	3,380	3,760
	7.10%	1,760	1,860	1,960	2,080	2,210	2,360	2,530	2,730	2,960	3,230	3,560
	7.30%	1,750	1,840	1,940	2,050	2,170	2,310	2,470	2,650	2,860	3,100	3,400
	7.50%	1,730	1,820	1,910	2,020	2,130	2,260	2,410	2,580	2,770	2,990	3,260
	7.70%	1,720	1,800	1,890	1,990	2,100	**2,220**	2,360	2,510	2,690	2,900	3,130
	7.90%	1,710	1,790	1,870	1,970	2,070	2,180	2,310	2,460	2,620	2,810	3,020
	8.10%	1,700	1,770	1,850	1,940	2,040	2,150	2,270	2,410	2,560	2,730	2,930
	8.30%	1,690	1,760	1,840	1,920	2,020	2,120	2,230	2,360	2,500	2,660	2,840
	8.50%	1,680	1,750	1,820	1,900	1,990	2,090	2,200	2,320	2,450	2,600	2,770
	8.70%	1,670	1,740	1,810	1,890	1,970	2,060	2,170	2,280	2,400	2,540	2,700

Value Indicator shown in $000s

Exhibit 12: Price to Sales Value Indicator Details

Sales Date	Seller	Buyer	State	Final Sales Price ($1,000s)	Annual Revenue ($1,000s)	Price to Revenue Multiple
8/4/2015	Captain's Cove Utility Company, Inc.	Aqua Utilities	VA	$2,643	$966	2.74
2/27/2017	Heritage Village Water Company	Connecticut Water Services	CT	$19,520	$3,532	5.53
4/14/2019	Aqua Virginia Inc. - Indian River	City of Chesapeake	VA	$1,932	$269	7.19
6/13/2019	Pennsylvania Utilities	Utilities, Inc.	PA	$3,141	$609	5.15
8/15/2019	River Road Public Service District	Morgantown Utility Board	WV	$2,616	$502	5.21
9/24/2019	Heritage Hills Water System	SUEZ	NY	$5,200	$1,458	3.57
1/11/2023	Pinehills Water Company	Acquarion Water Company	MA	$15,000	$2,059	7.29
Median Price to Revenue Multiple						5.21
Mean Price to Revenue Multiple						5.24
HWW Revenue					$720	
Value Indicator based on Median Price to Revenue Multiple (in $000s)						**$3,756**

Exhibit 13: Price to Connection Value Indicator Details

Sales Date	Seller	Buyer	State	Final Sales Price ($1,000s)	Inflation Adjustment	Adjusted Sales Price ($1,000s)	Water Customers	Wastewater Customers	Price Per Customer
8/4/2015	Captain's Cove Utility Company, Inc.	Aqua Utilities	VA	$2,643	1.33	$3,510	957	272	$2,856
2/27/2017	Heritage Village Water Company	Connecticut Water Services	CT	$19,520	1.28	$24,922	5,128	2,972	$3,077
4/14/2019	Aqua Virginia Inc. - Indian River	City of Chesapeake	VA	$1,932	1.20	$2,323	505	0	$4,600
6/13/2019	Pennsylvania Utilities	Utilities, Inc.	PA	$3,141	1.20	$3,772	595	596	$3,166
8/15/2019	River Road Public Service District	Morgantown Utility Board	WV	$2,616	1.20	$3,140	791	0	$3,970
9/24/2019	Heritage Hills Water System	SUEZ	NY	$5,200	1.20	$6,238	2,700	0	$2,310
1/11/2023	Pinehills Water Company	Acquarion Water Company	MA	$15,000	1.00	$15,000	2,700	0	$5,556
Median Price Per Customer									$3,166
Mean Price Per Customer									$3,648
HWW Customers (Estimated as of the Valuation Date)							849		
Value Indicator based on the Median Price / Customer (in $000s)									**$2,688**

Number of Connections from Annual Report of Housatonic Water Works Company, 2017-2021

Exhibit 14: Price to OCLD Value Indicator Details

Sales Date	Seller	Buyer	State	Final Sales Price ($1,000s)	OCLD Net CIAC ($1,000s)	Price to OCLD Multiple
8/4/2015	Captain's Cove Utility Company, Inc.	Aqua Utilities	VA	$2,643	$3,376	0.78
2/27/2017	Heritage Village Water Company	Connecticut Water Services	CT	$19,520	$28,116	0.69
4/14/2019	Aqua Virginia Inc. - Indian River	City of Chesapeake	VA	$1,932	$1,259	1.53
6/13/2019	Pennsylvania Utilities	Utilities, Inc.	PA	$3,141	$3,128	1.00
8/15/2019	River Road Public Service District	Morgantown Utility Board	WV	$2,616	$3,785	0.69
9/24/2019	Heritage Hills Water System	SUEZ	NY	$5,200	$4,774	1.09
1/11/2023	Pinehills Water Company	Acquarion Water Company	MA	$15,000	$10,706	1.40
Median Price to Original Cost Less Depreciation						1.00
Mean Price to Original Cost Less Depreciation						1.03
HWW OCLD					$1,663	
Value Indicator based on Median Price to OCLD Multiple (in $000s)						**$1,670**

HWW OCLD normalized from 2021 to reflect 2022 plant investment less depreciation.

Exhibit 15: Price to EBITDA Value Indicator Details

Sales Date	Seller	Buyer	State	Final Sales Price ($1,000s)	Annual EBITDA ($1,000s)	Price to EBITDA Multiple
8/4/2015	Captain's Cove Utility Company, Inc.	Aqua Utilities	VA	$2,643	$439	6.02
2/27/2017	Heritage Village Water Company	Connecticut Water Services	CT	$19,520	$1,077	18.13
4/14/2019	Aqua Virginia Inc. - Indian River	City of Chesapeake	VA	$1,932	$0	
6/13/2019	Pennsylvania Utilities	Utilities, Inc.	PA	$3,141	$226	13.92
8/15/2019	River Road Public Service District	Morgantown Utility Board	WV	$2,616	$208	12.59
9/24/2019	Heritage Hills Water System	SUEZ	NY	$5,200	$326	15.93
1/11/2023	Pinehills Water Company	Acquarion Water Company	MA	$15,000	$755	19.88
Median Price to Earnings Multiple						14.93
Mean Price to Earnings Multiple						14.41
HWW EBITDA					$158.40	
Value Indicator based on the Median Price to EBITDA Multiple (in $000s)						**$2,365**

HWW EBITDA from HWW 2021 Return Statement.

Exhibit 16: Price to EBIT Value Indicator Details

Sales Date	Seller	Buyer	State	Final Sales Price ($1,000s)	Annual EBIT ($1,000s)	Price to EBIT Multiple
8/4/2015	Captain's Cove Utility Company, Inc.	Aqua Utilities	VA	$2,643	$345	7.65
2/27/2017	Heritage Village Water Company	Connecticut Water Services	CT	$19,520	$592	32.97
4/14/2019	Aqua Virginia Inc. - Indian River	City of Chesapeake	VA	$1,932	$0	
6/13/2019	Pennsylvania Utilities	Utilities, Inc.	PA	$3,141	$117	26.91
8/15/2019	River Road Public Service District	Morgantown Utility Board	WV	$2,616	$52	50.18
9/24/2019	Heritage Hills Water System	SUEZ	NY	$5,200	$176	29.62
1/11/2023	Pinehills Water Company	Acquarion Water Company	MA	$15,000	$554	27.07
Median Price to Earnings Multiple						28.35
Mean Price to Earnings Multipe						29.07
HWW EBIT					$65.23	
Value Indicator based on Price to EBIT Multiple (in $000s)						**$1,849**

HWW EBITDA from 2021 HWW Return Statment.

Exhibit 17: Indication of Economic Obsolescence Based on the Capitalized Income Loss Method

Line No.	Description	Asset Approach Amounts	Required Return[2]	Amount	Reference
1	Tangible Property	$ 9,818,637			Table 5-8.
2	Real Estate	448,100			Table 5-8.
3	Intangible Assets	94,151			
4	Subtotal Tangible and Intangible Plant (in $000s)	$ 10,360,888	7.7%	$ 797,788	Calculation
5	Required Annual Return on Total Operating Assets			797,788	Line 5
6	Normalized Debt Free Net Cash Flows[2]			229,200	Exhibit 7
7	Annual Economic Obsolescence			(568,588)	Line 7 - Line 6
8	Capitalization Rate[1]			7.7%	
9	Capitalized Income Loss			$ (7,384,264)	Line 8 / Line 9
10	Estimated Economic Obsolescence % (rounded)			71.0%	Line 10 / Line 5

[1]Discount rate less 0% long-term growth rate. 0% growth rate used since additional assets would be requred to generate growth

[2]Debt free net cash flow excludes deduction for capital expense for comparison with the required return on tangible assets.

APPENDIX D:

Descriptions of Recent Water and Wastewater Utility Sales Transactions

SALES TRANSACTIONS
CONSIDERED TO BE COMPARABLE GUIDELINE TRANSACTIONS

System: Captain's Cove Utility Company, Inc.

Buyer: Aqua Utilities Captain's Cove, Inc.
Seller: Captain's Cove Utility Company, Inc.
State: Virginia
Date: 08/04/2015

Aqua Utilities Captain's Cove, Inc., a wholly-owned subsidiary, of Aqua Virginia, purchased Captain's Cove Utility Company, Inc, a publicly owned water and wastewater provider located in Accomack County, Virginia. The transaction occurred on August 4, 2015, and involved Captain's Cove Utility Company, Inc. transferring all water and sewer assets for $2,432,735 in a cash transaction plus $30,000 per year for 10 years for a total compensation of $2.64 million.[69]

The acquired water utility system included water utility assets including two operating wells, drilled wells, future well lots, well horse pump stations, hydro tanks, storage tank, chlorination feed equipment, distribution system, service lines, shut off valves, permits, hydrants, flush offs, valves, land, and easements pertaining to the water assets, or other tools, trucks, equipment, and any other appurtenances of the water system. The acquired sewer utility system included sewer utility assets including single lined lagoons, air compressors, pump stations. Included in this transaction was all other tangible and intangible assets owned of held by the seller and used or useful in providing water/sewer service to the Seller's customers.

At the time of the transaction, Captain's Cove Utility Company, Inc. served 957 water customer connections and 272 sewer customer connections, had a net utility plant value of $3,367,000, operating revenues of $966,000, and EBITDA of $439,000 in 2016.

Aqua Utilities Captain's Cove, Inc., a wholly-owned subsidiary of Aqua Virginia, which in turn is wholly-owned by Aqua America, Inc. Aqua America is one of the largest U.S based publicly traded water and sewer holding companies. Aqua Virginia, Inc. currently owns and operates 170 water systems and 7 sewer systems, serving over 30,000 premises or about 75,000 individuals in and throughout the commonwealth.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, the size of the system was within an order of magnitude of the HWW System, and there was no apparent regulatory incentive for Aqua Utilities to acquire the system.

Sources:

Joint Petition of Aqua Utilities Captain's Cove, Inc. and Captain's Cove Utility Company, Inc. for Approval of a Transfer of Utility Assets, Case No. PUE-2015-000014.

Order Granting Approval of the Joint Petition of Aqua Utilities Captain's Cove, Inc. and Captain's Cove Utility Company, Inc. for approval of a transfer of utility assets, August 4, 2015.

Compliance Filing for Aqua Utilities Captain's Cove, Inc., November 30, 2016.

[69] Commonwealth of Virginia State Corporation Commission Joint Petition of Aqua Utilities Captain's Cove, Inc., and Captain's Cove Utility Company, Inc. for Approval of a Transfer of Utility Assets; Case No. PUE-2015-000014

System: The Heritage Village Water Company

Buyer: Connecticut Water Service, Inc.
Seller: The Heritage Village Water Company
State: Connecticut
Date: 02/27/2017

Connecticut Water Service, Inc. ("CWS") purchased The Heritage Village Water Company ("HVWC"), a privately owned water and wastewater provider located in Connecticut. The transaction occurred on February 27, 2017, and involved the HVWC transferring all water and sewer assets to CWS in a stock transaction for a total enterprise value of $20.9 million, including the assumption by CWS of approximately $4.8 million in debt of HVWC.[70]

HWVC provides wastewater and water service to the towns of Southbury, Middlebury, and Oxford in Connecticut. The acquired water system included five water production wells, two covered and reinforced concrete reservoirs with a combined capacity of 2.2 million gallons, a water treatment plant with chlorination, eight pump stations, 423,789 feet of distribution main, services and other system appurtenances. The acquired sewer system included an activated sludge five-stage wastewater treatment plant with seasonal chlorination and tertiary oxidation, sewer pump stations, and a sewer collection system.

At the time of the transaction, HVWC served 5,128 water customers and 2,972 wastewater customers, had a net utility plant value of $28.1 million, operating revenues of $3,532,000, and EBITDA of $1,077,000 in 2015.

At the time of the transaction, CWS served approximately 95,100 customers throughout 56 communities in Connecticut.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, the size of the system was within an order of magnitude of the HWW System, and there was no apparent regulatory incentive for Aqua Utilities to acquire the system.

Sources:

Joint Application of Connecticut Water Service, Inc and the Heritage Village Water Company for Approval for Change of Control, Docket No. 16-07-xx, dated July 7, 2016.

Connecticut Public Utilities Regulatory Authority Decision on Joint Application of the Avon Water Company, the Heritage Village Water Company, and the Connecticut Water Company Application to Merge into the Connecticut Water Company, October 14, 2020.

Annual Report of the Heritage Village Water Company for the Year Ended December 31, 2015.

[70] Joint Application of Connecticut Water Service, Inc and the Heritage Village Water Company for Approval for Change of Control, Docket No. 16-07-xx, dated July 7, 2016.

System: Indian River Water System

Buyer: City of Chesapeake
Seller: Aqua Virginia, Inc.
State: Virginia
Date: 4/14/2019

Aqua Virginia is an investor-owned water and wastewater public service company operating under the laws of the Commonwealth of Virginia. The City of Chesapeake is a municipal corporation and political subdivision of the Commonwealth of Virginia. The Indian River Water System was owned by Aqua Virginia and the System's service area is located within the political boundaries of the City.

The buyer and seller agreed that the City would acquire the Indian River Water System for a purchase price of $1,931,600 paid in full at the time of closing the transaction.

The acquired water utility system included wells, well lots, well houses, well treatment, storage tankage, booster pumps, distribution system piping and valves, flush offs, service lines to each connection, and other appurtenances.

At the time of the transaction, The Indian River Water System served 505 water customer connections, had a net utility plant value of $1,259,000, and annual operating revenues of approximately $269,000 in 2018.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, and the size of the system was within an order of magnitude of the HWW System.

Sources:

Joint Petition of Aqua Virginia, Inc. and the City of Chesapeake, Virginia, Case No. PUR-2018-00184.

Order Granting Approval of the Joint Petition of the City of Chesapeake and Aqua Virginia for approval of a transfer of utility assets, March 14, 2019.

System: Pennsylvania Utility Company

Buyer: Community Utilities of Pennsylvania, Inc.
Seller: Pennsylvania Utility Company
State: Pennsylvania
Date: 6/13/2019

Community Utilities of Pennsylvania, Inc. ("CUPA"), a subsidiary of Utilities, Inc., a privately owned water and wastewater utility operating across 18 states purchased Pennsylvania Utility Company, a privately owned water and wastewater utility in Pennsylvania providing water and wastewater service to customers located in Tamiment, Lehman Township, Pike County, Pennsylvania. The transaction occurred on June 13, 2019, and involved the Pennsylvania Utility Company transferring all water and wastewater assets for $3,141,702 in a cash transaction.[71]

The acquired utility system is located in the resort community of Tamiment in the Poconos of Pennsylvania. This community was a resort community with a ski resort, golf course, and a playhouse. In 2005, the resort was liquidated to make room for a residential condominium development.

The acquired system included two separate, but physically connected water systems. The first system contains two deep wells with a combined yield of approximately 300,000 gpd; one steel, elevated water storage tank with a capacity of 125,000 gallons; one submersible pump; one electric motor; one chemical feed with a 30-gallon solution tank; and approximately 12,000 feet of six-inch and eight-inch diameter plastic distribution main and related appurtenances. The second system contains one deep well with a yield of approximately 432,000 gpd; one submersible pump; one steel standpipe with a capacity of 350,000 gallons; chemical feed pumps, chemical solution tanks and mixers; approximately 55,010 feet of six-inch and eight-inch diameter plastic distribution main and related appurtenances. The acquired sewer system included five pump stations, a sewage treatment plant, and 58,000 feet of one-and-a-half-inch through eight-inch diameter plastic collection mains.

At the time of the transaction, Pennsylvania Utility Company served 506 residential customers, four commercial water customer connections, and 506 residential and four wastewater connections. In addition, the utility charges 273 unoccupied lots an availability charge. Pennsylvania Utility Company had operating revenues of $609,000, and EBITDA of $226,000 in 2017.

CUPA is owned by Utilities, Inc., which is a private utility company operating in the United States. Utilities, Inc. has yearly revenues approximately $441 million and is headquartered in Chicago, IL.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar asset components to the HWW System, and the size of the system was within an order of magnitude of the HWW System.

Sources:
Pennsylvania Public Utility Commission Joint Application, docket no. A-2018-3005432.
Response to questions from the Public Utility Commission, dated January 7, 2019.

[71] Pennsylvania Public Utility Commission Joint Application, docket no. A-2018-3005432, p.9.

System: River Road Public Service District

Buyer: City of Morgantown (Morgantown Utility Board)
Seller: River Road Public Service District
State: West Virginia
Date: 8/15/2019

Morgantown Utility Board, a public utility board, purchased River Road Public Service District, a publicly owned water utility provider located in West Virginia providing water service to customers located in Monongalia County. The transaction occurred on August 15, 2019, and involved River Road Public Service District transferring all water assets for $2,616,000 in a cash purchase.[72]

The acquired utility system included water utility assets including pump houses, water transmission and distribution lines, water storage tanks, booster stations, mains, extensions, laterals, valves, connections, services, meter, and all other equipment and personal property used and useful in providing water service to the customers. Along with all other tangible and intangible assets owned of held by the seller and used or useful in providing water service to the Seller's customers.

At the time of the transaction, River Road Public Service District served 791 water customer connections, had a net utility plant value of $3,785,000, operating revenues of $502,000, and EBITDA of $208,000 in 2019.

Morgantown Utility Board is a public utility board operating in Monongalia County, West Virginia. Morgantown Utility Board serves 26,364 customers in the county and provides resale water service to seven customers.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, and the size of the system was within an order of magnitude of the HWW System.

Sources:

Petition for consent and approval for Morgantown Utility Board to acquire the waterworks system assets of River Road Public Service District, Case No. 19-0454-PWD-W-PC, April 30, 2019.

Public Service Commission of West Virginia Order granting approval for Morgantown Utility Board to acquire the waterworks system assets of River Road Public Service District, Case No. 19-0454-PWD-W-PC, August 15, 2019.

Annual Report for the River Road Public Service District submitted to the Public Service Commission of West Virginia, for the year ended 2019.

[72] West Virginia State Public Utility Commission Final Order of the River Road Public Service District and Morgantown Utility Board, Case no. 19-0454-PWD-W-PC

System: Heritage Hills Water System

Buyer: SUEZ Water New York, Inc.
Seller: Heritage Hills Water Works Corporation and Heritage Hills Sewer Works Corporation
State: New York
Date: 9/24/2019

SUEZ Water New York, Inc. ("SUEZ"), a wholly owned subsidiary of SUEZ Water Resources LLC, a large water and wastewater utility, purchased Heritage Hills Water Works Corporation, a privately owned water utility provider located in New York providing water service to customers located in Westchester County. The transaction occurred on September 24, 2019 and involved Heritage Hills transferring all water assets for $5,200,000, in a cash transaction.[73]

The acquired water utility system included five gravel packed wells with a production capacity of 864,000 gpd, one treatment plant, and two storage tanks with a total volume of 1.1 million gallons.

At the time of the transaction, Heritage Hills served 2,700 water customer connections. Heritage Hills water system had a net utility plant value of $4,774,000, operating revenues of $1,458,000, and EBITDA of $326,000 in 2018.

SUEZ provides drinking water, wastewater and waste collection service to 6.7 million people on a daily basis; treats 560 million gallons of water and 460 million gallons of wastewater each day; delivers water treatment and advanced network solutions to 16,000 industrial and municipal sites; processes 160,000 tons of waste for recycling; rehabilitates and maintains water assets for more than 6,000 municipal and industrial customers; and manages $4.1 billion in total assets. The company posted revenues of $1.1 billion in 2019 and is a subsidiary of Paris-based SUEZ.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, and the size of the system was within an order of magnitude of the HWW System.

Sources:

Joint Petition of Suez Water NY, Inc and Heritage Hills water works Corporation for Acquisition Approval. 19-W-0726.

New York Public Service Commission Order Authorizing the Transfer of Assets, December 18, 2020.

SUEZ Press Release, December 30, 2020.

[73] SUEZ Press Release, December 30, 2020.

System: Pinehills Water Company

Buyer: Aquarion Water Company of Massachusetts
Seller: Pinehills Water Company, Inc.
State: Massachusetts
Date: 1/23/2023

Pinehills Water Company ("PWC") was formed on March 22, 2001 for the purpose of providing drinking water to approximately 2,700 customers in an open space mixed-use development located in Plymouth, Massachusetts. PWC had no employees; instead, management was provided by Pinehills LLC and water system operations provided by a third-party operator. Pinehills LLC was a land development company formed by the principals of New England Development, The Green Companies, and Wallace Associates to undertake the permitting and overall planning, construction, operation, and management of the open space, mixed-use master plan community known as The Pinehills.

PWC's total annual revenues were just over $2.0 million in 2021 and net operating income was approximately $554,000. After lease payments for water distribution assets under lease with Pine Springs Realty LLC, PWC realized a net loss for the fiscal year of roughly $163,000.

Aquarion Water Company of Massachusetts ("AWC-M") is a public utility engaged in the business of development, treatment, distribution, and sale of water to approximately 8,900 customers in Millbury, Oxford, Sheffield, Dover, and Plymouth Massachusetts and is a direct subsidiary of Aquarion Company, headquartered in Bridgeport, Connecticut. Through its subsidiaries, the Aquarion Company treats and delivers water to more than 237,000 customer accounts and a population of more than 750,000 in 75 cities and towns in Massachusetts, Connecticut, and New Hampshire.

The transaction occurred on January 23, 2023 and involved PWC transferring its water assets to AWC-M as part of a cash transaction for $15.0 million. PWC's water assets consisted of wells, transmission and distribution mains, reservoirs, tanks and standpipes, pumps and pumping stations, hydrants, meters, and personal property. It also included all of PWC's right, title to, and interest in the curb stops and service connections and any franchise rights and exclusive service area grants and/or agreements relating to the operation of the water system.

This transaction was considered similar to the HWW System because the transaction involved a willing buyer and willing seller, the system has similar water components to the HWW System, and the size of the system was within an order of magnitude of the HWW System.

Sources:

Petition of Aquarion Water Company of Massachusetts and Pinehills Water Company, Inc., for Approval of Purchase and Sale of Assets and Transfer of Franchise, November 24, 2022.

Annual Return of Pinehills Water Company, Inc. to the Department of Public Utilities of Massachusetts for the Year Ended December 31, 2021.