

**Application of Pennsylvania-American Water Company for Acquisition of
the Wastewater Assets of the Borough of Brentwood**

66 Pa. C.S. § 1329

Application Filing Checklist – Water/Wastewater

Docket No. A-2021-3024058

5. Provide copies of two independent appraisals by separate utility valuation experts for use in establishing the fair market value of the Selling Utility.

RESPONSE: See enclosed appraisals performed by Jerome C. Weinert, P.E., Principal and Director for Weinert Appraisal & Depreciation Services, LLC on behalf of PAWC at **Appendix A-5.1** and by Harold Walker III, Manager, Financial Studies Gannett Fleming Valuation and Rate Consultants, LLC on behalf of Brentwood at **Appendix A-5.2**.

Appendix A-5.1 (WAD)

Jerome C. Weinert

Principal

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March 7, 2023

Mr. Scott D. Fogelsanger
Senior Manager - Business Development
Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

RE: UVE Market Value Appraisal of Borough of Brentwood's Wastewater Collection System

Enclosed is Weinert Appraisal and Depreciation Services, LLC's (WAD Consultants) fair market value appraisal report for Borough of Brentwood's wastewater collection system (System) as of January 1, 2023, prepared for Pennsylvania American Water Company (PAWC). The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes (PA CS) Paragraph 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

Based on our appraisal the Fair Market Value of Borough of Brentwood's wastewater collection system's property, plant, and equipment operating as a Pennsylvania rate regulated wastewater utility is \$22,721,549 determined based on the cost, income, and market approaches to value, as detailed in the following table:

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach			
Inventory of Assets			
Original Cost (\$OC)	9,942,191		
Depreciated Original Cost (\$OCLD)	7,260,988		
Replacement Cost			
Replacement Cost New (COR)	58,151,497		
Depreciated Replacement Cost New (CORLD) \$	24,334,695		
Cost Approach Conclusion	24,334,695	50%	12,167,348
Income Approach			
Required Rate Increases: 22% period 3, 17% period 6, 12% period 9 and 6% every 3rd year beginning in period 12 (Input 6)			
	21,280,929		
Income Approach Conclusion	21,280,929	40%	8,512,372
Market Approach			
Market Comparables (to)			
OCLD	13,602,009		
CORLD	19,655,133		
Customers	25,897,860		
Cash Flows (EBITDA)	27,849,734		
Market Financials (to)			
OCLD	14,086,317		
Market Approach Conclusion	20,418,286	10%	2,041,829
Appraisal Conclusion	\$ 22,721,549	100%	22,721,549
Conclusion (cost approach)	\$ 24,334,695		

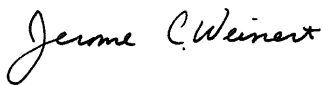
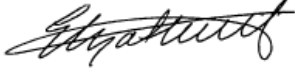
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Appendix A-5.1 (WAD)

As the purpose of this appraisal was to fulfill the requirements of Act 12 in the establishment of value for rate making of the Borough of Brentwood's wastewater collection system's property, plant and equipment the appraisal's conclusion of \$22,721,549 is consistent with the purpose of this appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Respectfully Submitted,
WAD Consultants
March 7, 2023

By:

	
Jerome C. Weinert, AM, P.E., CDP Principal and Director	Elizabeth A. Weinert Associate

ASA: Accredited Senior Appraiser in the Machinery and Equipment (Public Utilities) discipline of the American Society of Appraisers
P.E.: Registered Professional Engineer State of Wisconsin
CDP: Certified Depreciation Professions in the Society of Depreciation Professionals

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**Borough of Brentwood's (Pennsylvania) Wastewater Collection
System**

**Fair Market Value Appraisal Report
As of January 1, 2023
for
Pennsylvania American Water Company**

**WAD Consultants
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Appendix A-5.1 (WAD)

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Appendix A-5.1 (WAD)

March 7, 2023

Pennsylvania American Water Company
Mechanicsburg, Pennsylvania

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Enclosed is Weinert Appraisal and Depreciation Services, LLC's (WAD Consultants) fair market value appraisal report of the Borough of Brentwood's (Pennsylvania) wastewater collection system (System) as of January 1, 2023, prepared for our client Pennsylvania American Water Company (PAWC). The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated (PA CS) Statutes Section 1329 "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

Based on our appraisal, the Fair Market Value of the Borough of Brentwood's (Pennsylvania) wastewater collection system's property, plant, and equipment operating as Pennsylvania rate regulated wastewater utility is \$22,721,549 determined based on the cost, income, and market approaches to value, as detailed in the following table:

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Appendix A-5.1 (WAD)

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value Appraisal

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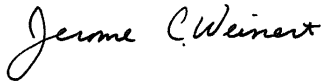

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As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Brentwood's wastewater collection system's property, plant and equipment this appraisal's conclusion of \$22,721,549 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property, this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

Respectfully Submitted,
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March 7, 2023

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APPRAISAL CERTIFICATION
for the Fair Market Appraisal of
The Borough of Brentwood, Pennsylvania's
Wastewater Collection System
As of January 1, 2023
Prepared for
Pennsylvania American Water Company

WAD Consultants certifies that, to the best of its knowledge and belief:

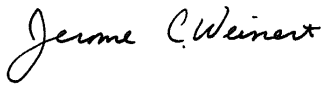
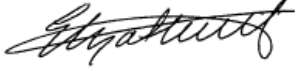
- The statements of fact contained in this report are true and correct.
- Prior to this appraisal during the last three-year period, WAD Consultants has previously appraised these properties.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- Neither WAD Consultants nor its professional staff has no present or prospective interest in the property that is the subject of this report and has no personal interest with respect to the parties involved.
- Neither WAD Consultants nor its professional staff has any bias with respect to the property that is the subject of this report or to the parties involved.
- Our 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 appraisal.
- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2020-2021 Edition. The Appraisal Foundation has extended the applicability of the 2020-2021 Edition of USPAP through December 31, 2023.
- The signers of this report have not made personal inspections of the property that is the subject of this report.
- No individuals provided significant professional assistance to the persons signing this report. However, Scott Fogelsanger of Pennsylvania American Wastewater Company provided assistance in obtaining information and data from the Borough of Brentwood, Pennsylvania and the Engineer's Assessment report prepared by Gateway Engineer which was the inventory starting point of the Cost Approach.

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Appendix A-5.1 (WAD)

WAD Consultants
March 7, 2023

By:

	
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NARRATIVE REPORT

EXECUTIVE SUMMARY

The purpose of this value appraisal is the determination of the fair market value of the property plant and equipment of the Borough of Brentwood's wastewater collection system (System) for our client Pennsylvania American Water Company (PAWC). The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP)¹ and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes Paragraph 1329: "Valuation of acquired water and wastewater systems", collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12) and the Pennsylvania Public Utility Commission's Final Implementation Order M-2016-2543193 adopted October 27, 2016. The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 14th Edition, page 58.

In arriving at our opinion of value of the System's property, plant, and equipment as it is operated as an investor-owned Pennsylvania PUC rate regulated wastewater utility the cost, income, and market approaches to value were considered. Detailed explanations of each approach to value are included below in the section "Appraisal Procedures and Results". The following summarizes the data, analysis and conclusions of each of those valuation approaches.

Cost Approach - The philosophy in the cost approach to value is that the maximum value of a property's tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

¹ The Appraisal Foundation has extended the applicability of the 2020-2021 Edition of USPAP through December 31, 2023.

Reproduction cost and replacement cost are defined as:

Reproduction cost – “Reproduction cost is the estimated cost to construct, as of the effective appraisal date, an exact duplicate or replica of the building [property] being appraised, insofar as possible, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject improvements [property].”²

Replacement cost – “Replacement cost is the estimated cost to construct, as of the effective appraisal date, a substitute for the building [property] being appraised using contemporary materials, standards, design and layout. When this cost basis is used, some existing obsolescence in the property may be cured. Replacement cost may be the only alternative if reproduction cost cannot be estimated”³

In the wastewater industry the property’s reproduction costs and replacement costs are quite similar; therefore, the property’s cost new was determined based on its replacement cost new estimated by the trended original cost and the inventory-unit cost methods.

The trended original cost method was utilized in preparing the replacement cost new. “Trending is a method of estimating a property’s replacement cost new in which an *index* or *trend factor* is applied to the property’s *historical costs* to convert the known historical costs into an indication of current (appraisal date) costs. Simply put, trending reflects the movement of price over time.”⁴ In the trended original cost method, Borough of Brentwood’s investment in wastewater collection plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property’s original investment. WAD Consultants utilized the Engineer’s Assessment performed by Gateway Engineers (Engineer’s Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer’s Assessment WAD Consultants developed the System’s original cost less depreciation (OCLD) and replacement cost new less depreciation (CORLD) in property, plant and equipment on January 1, 2023 (Cost Approach tab).

² The Appraisal of Real Estate, 14th Edition. pages 569-570

³ Ibid, page 570

⁴ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Third Edition. Page 50

Appendix A-5.1 (WAD)

The cost trends were applied to each of the System's various investment categories (NARUC plant accounts) by original year of placement for that investment. The cost indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry in the northeastern region of the United States which includes the Commonwealth of Pennsylvania, the AUS General Plant Indexes, and various United States Bureau of Labor Statistics (US BLS) indexes as detailed in the following table:

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters		Reproduction to Replacement Cost Factor		AUS Input
		Index Series	Table	Line Reference	Lookup	
		353.05	Land & Land Rights - Easements	USBLS	PPI	
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	HW	W-1	35.00	HWW-135	1.00
361.30	Collection Sewers - Gravity - Mains - PVC	HW	W-1	38.00	HWW-138	1.00
361.10	Collection Sewers - Gravity - Mains - VCP	HW	W-1	36.00	HWW-136	1.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	HW	W-1	36.00	HWW-136	1.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	HW	W-1	36.00	HWW-136	1.00
361.70	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
361.22	Collection Sewers - Gravity - Mains Relining	HW	W-1	38.00	HWW-138	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00

Using the trended original cost method, the System's investment in plant, property and equipment of \$9,942,191 was determined to have a reproduction cost new of \$58,151,509 as summarized in the following table:

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	AUS input NARUC Code	Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023 Asset Description	Eng Assmnt Original Cost	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.05	353.05	Land & Land Rights - Easements	36	USBL56	1,130.32	40,692	1.00	40,680
361.20	361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	HWW-135	4.52	193,952	1.00	193,952
361.30	361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	HWW-138	1.57	5,206,042	1.00	5,206,042
361.10	361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	HWW-136	5.04	6,638,454	1.00	6,638,454
361.11	361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	HWW-136	34.75	6,171,412	1.00	6,171,412
361.12	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	HWW-136	35.58	20,676,276	1.00	20,676,276
361.70	361.70	Collection Sewers - Gravity - Manholes	1,485,458	HWW-145	3.74	5,558,870	1.00	5,558,870
361.22	361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	HWW-138	1.36	3,450,059	1.00	3,450,059
363.00	363.00	Service Laterals	483,827	HWW-139	21.11	10,215,752	1.00	10,215,752
Total Borough of Brentwood Wastewater Utility			9,942,191			58,151,509		58,151,497

Replacement Cost New Less Depreciation - The replacement cost described above reflects the cost of new property; however, Borough of Brentwood’s wastewater collection system property is not new and has experienced normal depreciation and potentially functional and/or economic obsolescence. These various forms of depreciation are defined as follows:

Normal depreciation/deterioration, akin to physical deterioration, is “loss in value caused by wear, tear, age and use.”⁵

Functional obsolescence is “the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient of less costly replacement property that new technology has developed.”⁶

Economic, or external, obsolescence is defined as “a loss in value caused by factors outside a property”⁷ and is most often indicated by insufficient earning.

⁵ The Dictionary of Real Estate Appraisal, 4th Edition

⁶ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.

⁷ The Appraisal of Real Estate, 13th Edition, page 442.

Appendix A-5.1 (WAD)

Based on our experience in regard to water and wastewater depreciation studies and our analysis of Borough of Brentwood's wastewater collection system operating performance; we found that the Borough of Brentwood's wastewater utility's property experiences normal depreciation but not any significant functional obsolescence; economic obsolescence is best evaluated after the results of the income and market approaches to values are determined (see Cost Approach Revisited).

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, AUS Consultants' experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with PAWC and Aqua America rate cases. With each of their recent rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. WAD Consultants has reviewed the PAWC studies which are summarized in the following table:

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023**

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1) Account Number	(2) Description	(4)		(5)	(6)	(6b) Life
		(4a) Iowa Survivor / Retirement Curve	(4b) Normal Service Life years	Economic Obsolescence % of CORLD	(6a) Tax Depreciation Table	
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00% Non-Depr		0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00% MACRS		25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00% MACRS		25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00% MACRS		25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00% MACRS		25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00% MACRS		25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00% MACRS		25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00% MACRS		25.00
363.00	Service Laterals	R3.0	50.00	0.00% MACRS		25.00

Appendix A-5.1 (WAD)

Normal Depreciation – The extent of the normal depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property’s depreciation or condition is estimated using the following formulas:

$$\text{Depreciation (\%)} = \frac{\text{Age (years)} \times 100\%}{\text{Service Life (years)}}$$

$$\text{Condition (\%)} = \frac{\text{Remaining Life (years)} \times (100\%)}{\text{Service Life (years)}}$$

where: the property’s Service Life = Age + Remaining Life and
 Remaining Life = f(Survival Characteristic, Service Life, and Age)

However, due to the age of some of the assets the extent of the depreciation was limited to 85% of the asset’s original cost and its replacement cost new.

When the above depreciation lives are used to quantify the property’s depreciation is applied to the replacement cost new (COR) of \$58,151,509 the resultant COR less normal depreciation (CORLD) was found to be \$24,334,695 detailed as follows:

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 1, 2023 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
		years	COR \$s		years	years	years	% of COR	CORLD \$s
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023		Col (16)	AUS Input	AUS Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.05	Land & Land Rights - Easements	20.11	40,680	ZNonDep	-	-	-	-	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	37.29	193,952	R2.5	80.00	47.48	84.77	80.00	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	17.39	5,206,042	R2.5	80.00	64.07	81.46	80.00	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	48.60	6,638,454	R2.5	80.00	39.39	87.99	80.00	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	97.22	6,171,412	R2.5	150.00	67.28	164.49	150.00	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	92.44	20,676,276	R2.5	130.00	52.78	145.22	130.00	7,515,724
361.70	Collection Sewers - Gravity - Manholes	60.70	5,558,870	S2.0	75.00	31.87	92.56	75.00	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	8.91	3,450,059	R2.5	60.00	51.66	60.57	60.00	2,944,641
363.00	Service Laterals	87.43	10,215,752	R3.0	50.00	8.83	96.26	50.00	1,794,264
Total Borough of Brentwood Wastewater Utility			58,151,497						24,334,695

The preliminary cost approach to value of Borough of Brentwood's wastewater system property was found to be \$24,334,695.

Income Approach

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The Borough of Brentwood's wastewater system's operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state, and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis (Income Approach tab), first the results from the Borough of Brentwood's wastewater system's operations were evaluated based on an analysis of historical operating performances over the period 2014 through budgetary 2023 (Financials tab) resulting in operating statistics such as revenues and their growth, various operating expenses stated as function of their typical drivers (revenues, plant investment, income from operations, etc.). Next, the results of future periods operations were forecast for a period of 20 years based on the migration of the Borough of Brentwood's historical operations over time to operations of the wastewater operation

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similar to a public investor-owned water/wastewater utility. Finally, the resultant cash flows from future period operations on the System were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility. The following table details the market discount rate developed using the weighted average cost of capital (WACC) of the market debt and equity:

**Water and Wastewater Cost of Capital
First Quarter 2023 (01-01-2023)**

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)	(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
		Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt		30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity		70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r		100.0%						7.97%
Growth (g)								2.94%
Rate without Growth: [(1+r)/(1+g)]-1								4.88%

The following table presents the results of the discounted cash flow analysis:

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis

Discount Rate:		7.97%											
Capitalization Rate:		4.88%											
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows
					(3)-(4)	(6)-(5)	(7) * 28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)
1	0.5	3,926,000	2,630,473	786,073	1,295,527	509,454	147,181	434,978	-	713,368	0.962	686,260	686,260
2	1.5	4,789,720	2,709,387	799,077	2,080,333	1,281,256	370,155	438,245	46,641	1,225,292	0.891	1,091,735	1,777,995
3	2.5	4,789,720	2,790,668	812,313	1,999,052	1,186,739	342,849	441,531	-	1,214,672	0.826	1,003,319	2,781,314
4	3.5	4,789,720	2,874,388	825,783	1,915,332	1,089,549	314,771	444,844	-	1,155,717	0.765	884,124	3,665,438
5	4.5	4,789,720	2,960,619	839,491	1,829,101	989,610	285,898	448,180	-	1,095,023	0.708	775,276	4,440,714
6	5.5	5,603,972	3,049,438	853,438	2,554,534	1,701,096	491,447	451,542	43,969	1,567,576	0.656	1,028,330	5,469,044
7	6.5	5,603,972	3,140,921	855,138	2,463,051	1,607,913	464,526	408,993	-	1,589,532	0.607	964,846	6,433,890
8	7.5	5,603,972	3,235,148	868,079	2,368,824	1,500,745	433,565	412,060	-	1,523,199	0.563	857,561	7,291,451
9	8.5	6,276,449	3,332,202	881,242	2,944,247	2,063,005	596,002	415,151	36,315	1,896,779	0.521	988,222	8,279,673
10	9.5	6,276,449	3,432,168	894,632	2,844,281	1,949,649	563,254	418,264	-	1,862,763	0.483	899,715	9,179,388
11	10.5	6,276,449	3,535,133	908,250	2,741,316	1,833,066	529,573	421,402	-	1,790,341	0.447	800,282	9,979,670
12	11.5	6,653,036	3,641,187	922,100	3,011,849	2,089,749	603,729	424,563	20,335	1,963,222	0.414	812,774	10,792,444
13	12.5	6,653,036	3,750,422	936,183	2,902,614	1,966,431	568,102	427,747	-	1,906,765	0.383	730,291	11,522,735
14	13.5	6,653,036	3,862,934	950,502	2,790,102	1,839,600	531,460	430,955	-	1,827,687	0.355	648,829	12,171,564
15	14.5	7,052,218	3,978,822	965,062	3,073,396	2,108,334	609,098	434,188	21,556	2,008,554	0.329	660,814	12,832,378
16	15.5	7,052,218	4,018,610	979,862	3,033,608	2,053,746	593,327	437,444	-	2,002,837	0.305	610,865	13,443,243
17	16.5	7,052,218	4,058,796	994,908	2,993,422	1,998,514	577,371	440,725	-	1,975,326	0.282	557,042	14,000,285
18	17.5	7,475,351	4,099,384	1,010,200	3,375,967	2,365,767	683,470	444,029	22,849	2,225,619	0.261	580,887	14,581,172
19	18.5	7,475,351	4,140,377	1,025,744	3,334,974	2,309,230	667,136	447,360	-	2,220,478	0.242	537,356	15,118,528
20 and beyond	19.5	7,475,351	4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	2.811	6,162,401	21,280,929
								8,672,915					
Age					19.5								
PW(Age) = 1/(1+Discount Rate) ^(Age)					0.224			Net Plant ADIT		17,826,926			
PW to Perpetuity = 1/Capitalization Rate					12.547					(2,293,978)			
PW _(20and Beyond) = PW to Perpetuity * PW Factor _(19.5)					2.811			Rate Base		15,532,948	0.224	3,479,380	18,597,908
								Annual Plant Construction Inflation Rate					
										0.0422 Input			
								Plant Inflation over 19.5 years					
										35,503,834	0.224	7,952,859	23,071,387
								PP		19,364,443			
								OCLD		7,260,988			
								PP/OCLD		2,667			
								RCNLD		24,334,695			
								RCNLD/PP		1,256668989			
										19,519,773.60	0.224	4,372,429	19,490,957
								Average					20,610,295

Based on the above-described discounted cash flow analysis, the Income Approach to value of the System’s property operating as a rate regulated wastewater utility under the regulation of the Pennsylvania Public Utility Commission (PA PUC) was determined to be \$21,280,929. To ensure that the above-described forecast captured the entire economic returns of the property an additional 40-year period beyond the original 20-year forecast was made. This additional forecast indicated the reasonableness of the initial forecast results.

Market Approach

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach of Pennsylvania water and wastewater

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systems and market value to book value ratios based on investor-owned water utilities' financial performance as reported in Value Line Investment Survey (January 6, 2023).

Market Sales – In the comparable sale market approach, the sales of Pennsylvania municipal water and wastewater systems to investor-owned water/wastewater utilities were used to insure comparability. As the purpose of this appraisal is to define the value of Borough of Brentwood's wastewater collection system under Section 1329 of the PA CS the market comparable sales were limited to sales subsequent to the passage of Section 1329 in 2016. The following sales were considered:

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Final Purchase Price ¹	Number of Total Customers	Relationship to the passage of Section 1329
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport		Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA		Chester	Wastewater Collection and Treatment	29,500,000	29,500,000	2,106	Post
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township		Montgomery	Wastewater Collection and Treatment	75,100,000	64,373,378	5,434	Post
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township		Chester	Treatment	5,000,000	5,000,000	1,248	Post
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Water Distribution	4,734,800	4,734,800	1,186	Post
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	Competitive 3 bidders	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	Competitive 4 bidders	Dauphin	Water Treatment and Distribution	22,500,000	21,750,000	2,325	Post
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury		Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	A-2018-3004933	5/28/2018	PA American Water	Exeter		Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	Competitive 3 bidders: Aqua, F	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	A-2019-3014248	9/30/2018	PA American	Kane		McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	A-2020-3019634	12/10/2019	PA American	Royersford		Montgomery	Treatment	13,000,000	13,000,000	1,596	Post
14	A-2020-3019859	12/17/2019	PA American	Valley		Chester	Water Treatment and Distribution	7,325,000	7,325,000	1,459	Post
15	A-2020-3014248	12/17/2019	PA American	Valley Delaware County Regional Water Quality Authority (DELCOA)		Chester	Wastewater Collection	13,950,000	13,950,000	1,644	Post
16	A-2019-3015173	12/31/2019	Aqua PA		Competitive 2 bidders PAWC & Aqua	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	13,750,000	1,428	Post
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	53,000,000	11,151	Post
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township		Chester	Wastewater Collection and Treatment	54,930,000	54,930,000	3,918	Post
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township		Chester	Wastewater Collection and Treatment	17,500,000	17,500,000	2,294	Post
21	A-2021-3024681	4/6/2021	PA American Water	City of York		York	Wastewater Collection and Treatment	235,000,000	235,000,000	15,851	Post

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In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD) and depreciated replacement cost (CORLD) (Market Approach tab).

Financial Market Ratios – In the market approach based on market financial ratios the market data of companies (six) in the water/wastewater industry as reported in Value Line Investment Surveys (January 6, 2023) were analyzed. In the analysis the companies' stock (market) and debt (book value) per share are compared as a ratio to the book investment value per share.

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Comparable Sales Approach

Ratios See Market Tab Rows 39:45

Central Tendency and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted
All Acquisitions	1.7632	1.8333
Wastewater Collection and Treatment	1.7972	1.8248
Wastewater Collection	1.8733	2.0712
Water Treatment and Distribution	1.4354	1.5060
Water Distribution	1.3500	1.3500
Conclusion		1.8733

Market Sales Analysis - PP/CORLD

	Simple	Weighted
All Acquisitions	0.8171	0.8747
Wastewater Collection and Treatment	0.8536	0.8803
Wastewater Collection	0.8077	0.8582
Water Treatment and Distribution	0.7686	0.8381
Water Distribution	0.5320	0.5320
Conclusion		0.8077

Borough of Brentwood OCLD

Cost Approach - OCLD

Borough of Brentwood CORLD

Cost Approach - CORLD

Market Value Indication

13,602,009

Market Value Indication

19,655,133

Market Sales Analysis - PP/Customer

	Simple	Weighted
All Acquisitions	8563	9890
Wastewater Collection and Treatment	10200	11062
Wastewater Collection	6507	5387
Water Treatment and Distribution	7188	7882
Water Distribution	3992	3992

Financial Basis¹

	Market Value per Share to Book Value per Share
Financial Markets	
Market to Book (equity)	3.21
Market to Book (equity and debt)	1.94
Use (equity and debt)	1.94

Conclusion

Valley Wastewater Info

Borough of Brentwood Customers

3,980 AUS Input

Borough of Brentwood OCLD

7,260,988 Cost Approach - OCLD

Market Value Indication

25,897,860

Market Value Indication

14,086,317

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	16.51	12.67
Wastewater Collection	18.71	13.77
Water Treatment and Distribution	14.13	11.14
Water Distribution	20.24	20.24
Conclusion		18.71

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	11.45	10.17
Wastewater Collection	12.89	12.07
Water Treatment and Distribution	7.37	6.33
Water Distribution	13.59	13.59
Conclusion		12.89

Borough of Brentwood Cash Flows

1,488,495 Income Approach

Borough of Brentwood Cash Flows

1,661,649 Income Approach

Market Value Indication

27,849,734

21,418,662

Summary of Market Analyses

Indicators	
OCLD	13,602,009
CORLD	19,655,133
Customers	25,897,860
Cash Flows	
EBITDA Periods 1-5	27,849,734
EBITDA Periods 1-13	21,418,662
Value Line	14,086,317
Mean	20,418,286
Median	20,536,898
Conclusion	20,418,286

The market approach conclusion of this appraisal was determined to be \$20,418,286.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of \$24,334,695 needs to be reviewed in light of the above-described income and market analyses in order to evaluate if external obsolescence exists in the preliminary replacement cost new less depreciation conclusion. The appraisal literature in regard to developing a cost approach states:

“The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called “external obsolescence”) has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.

The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence.”⁸

The above-described income approach value conclusion of \$21,280,929 and the market approach conclusion of \$20,418,286 for the Borough of Brentwood's future wastewater system compared to the preliminary cost approach conclusion of \$24,334,695 indicates no significant external obsolescence exists in the cost approach conclusion of \$24,334,695 detailed as follows:

⁸ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach CORLD \$s	Economic Obsolescence % of Preliminary Cost Approach Input AUS Economic Obsolescence Analysis	Fair Market Value Appraisal Date Value \$s Calculation (39) * [1.00-Col (40)]
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)		
Account	Description	Prelim CORLD	EO%	FMV
353.05	Land & Land Rights - Easements	40,680	0.00%	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	109,069	0.00%	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	4,097,615	0.00%	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	3,041,305	0.00%	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	2,524,727	0.00%	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	7,515,724	0.00%	7,515,724
361.70	Collection Sewers - Gravity - Manholes	2,266,670	0.00%	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	2,944,641	0.00%	2,944,641
363.00	Service Laterals	1,794,264	0.00%	1,794,264
Total Borough of Brentwood Wastewater Utility		24,334,695		24,334,695

Value Conclusion

The Fair Market Value of the Borough of Brentwood's wastewater collection system's property, plant and equipment and its operation was determined to be \$22,721,549 as follows:

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach			
Inventory of Assets			
Original Cost (\$OC)	9,942,191		
Depreciated Original Cost (\$OCLD)	7,260,988		
Replacement Cost			
Replacement Cost New (COR)	58,151,497		
Depreciated Replacement Cost New (CORLD)	\$ 24,334,695		
Cost Approach Conclusion	24,334,695	50%	12,167,348
Income Approach			
Required Rate Increases: 22% period 3, 17% period 6, 12% period 9 and 6% every 3rd year beginning in period 12 (Input 6)			
	21,280,929		
Income Approach Conclusion	21,280,929	40%	8,512,372
Market Approach			
Market Comparables (to)			
OCLD	13,602,009		
CORLD	19,655,133		
Customers	25,897,860		
Cash Flows (EBITDA)	27,849,734		
Market Financials (to)			
OCLD	14,086,317		
Market Approach Conclusion	20,418,286	10%	2,041,829
Appraisal Conclusion	\$ 22,721,549	100%	22,721,549
Conclusion (cost approach)	\$ 24,334,695		

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As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Brentwood's property, plant and equipment this appraisal's conclusion of \$22,721,549 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the wastewater industry account classifications and the installation year of the property this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

PURPOSE AND SCOPE OF WORK

The purpose of this appraisal of the Borough of Brentwood's wastewater collection and treatment system is the determination of the fair market value of the property plant and equipment of wastewater utility. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP)⁹ and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes (PA CS) Paragraph 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the 2016 Pennsylvania legislative session (Act 12). The intended users of this appraisal are our client Pennsylvania American Water Company and the Pennsylvania Public Utility Commission.

The value established in this appraisal was based on the definition of Market Value as:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 14th Edition, page 58.

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending December 31) Borough of Brentwood (Pennsylvania) wastewater collection operational financial statements cover the period 2014 through 2021 and budgets for 2020 and 2023.
- The Gateway Engineers' Engineer's Assessment and inventory of the Borough of Brentwood's wastewater system's property dated January 13, 2023.
- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for

⁹ The Appraisal Foundation extended the applicability of the 2020-2021 Edition of USPAP through December 31, 2023.

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the period 1912 through July 1, 2022, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the System's property, plant and equipment, and its operations: the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system's operation. A detailed explanation of each approach to value is included below in the section "Appraisal Procedures and Results".

WATER/WASTEWATER INDUSTRY NATIONALLY AND IN PENNSYLVANIA

AND

BOROUGH OF BRENTWOOD'S WASTEWATER COLLECTION SYSTEM FACILITIES

Water/wastewater Industry

The water and wastewater industry in the United States consist of both municipal authorities (literally thousands) and private investor-owned companies. Of the investor owned there are nine which are large enough to be tracked by Value Line Investment Surveys, of which, two are major players in the northeast portion of the United States, American Water Works Company, Inc. and Aqua America, Inc. (on February 3, 2020 Aqua's name changed to Essential Utilities, Inc.) American and Aqua have been particularly active in the acquisition of municipal water and wastewater systems.

Pennsylvania Water / Wastewater Industry

The water and wastewater industry in Pennsylvania also consist of both municipal and investor-owned systems. Over last several years the need for infrastructure improvements has led the Pennsylvania legislature to pass legislation facilitating the acquisition of municipal water and/or wastewater systems to a private investor-owned rate regulated companies such as American Water and Aqua America. This legislation was Act 12 of the Pennsylvania legislator's 2016 legislative session (Act 12). The Act 12 legislation added a section (1329) modifying Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes (PA CS) adding Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12. This appraisal was developed to meet the valuation criteria established by Section 1329 and the PA PUC's subsequent Implementation Orders in the valuation of acquired water and wastewater systems.

Borough of Brentwood's Wastewater Collection System Facilities, its Property and Operations¹⁰

System Description

The Borough's sanitary sewer system consists entirely of gravity sewers for conveyance of sewage to be treated at the Allegheny County Sanitary Authority (ALCOSAN) sewage treatment facility along Woods Run in Pittsburgh, PA. The system's pipe network is split into two sewer sheds: Point of Connection (POC) MH-89 (Saw Mill Run) and POC MH-42 (Streets Run), both of which are part of the ALCOSAN service area.

The Borough's sanitary sewer system's main trunk sewers began construction in 1919 and have been continually expanded since this initial date. This assessment classifies the installation year of each pipe, structure, and lateral located within Brentwood Borough as well as materials, sizes, lengths, and approximate depths of all assets within the system.

The Brentwood Borough sanitary sewer system is only comprised of gravity sewers and manhole structures. The system is part of two sewer sheds: Saw Mill Run (POC MH-89) and Streets Run (POC MH-42). Both sewer systems are part of the ALCOSAN service area. The Brentwood system services approximately 3950 public, commercial, and residential customers throughout the 1.45 square mile Borough.

The main trunk sanitary sewer system started construction in 1919. Approximately 7% of the Borough's total sewer line length was installed between the years of 1919-1924. The majority of the system was built between the years of 1925-1930 where approximately 75% of the network was installed. Approximately 18% of the system has been installed between 1931-present. The pipes within the system total approximately 200,000 linear feet of gravity collection main lines with depths ranging from approximately 2-26 feet deep. Pipe sizes and materials within the system are described as follows:

Cast Iron Pipe (CAS) – 8"

Ductile Iron Pipe (DIP) – 8"

¹⁰ Extracted from Engineer's Assessment page 3 & 6

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Polyvinyl Chloride Pipe (PVC) – 8”, 10”, 12”, 15”

Vitrified Clay Pipe (VCP) – 8”, 10”, 12”, 15”, 18”

There are approximately 1,050 brick/concrete manholes (structures) within the system with approximate depths varying from 2-26 feet. The average manhole depth throughout the system is approximately 8 feet. There are approximately 3,950 8” sanitary laterals within the system. This is estimated on the basis that every billed customer within the system has one sanitary lateral tie in with the main system.

The sewer system is primarily constructed within the existing road rights of way, however, during the research for the assessment, documentation of thirty-six recorded easements have been obtained from the Borough’s archives. Of these easements thirty were sold to the Borough for a fee of \$1.00. The other six easements were a partial condemnation with no fees listed. The total known purchased value of the easements is \$30.00.

The total cost of assets to be acquired, taken back to the constructed year via cost indices, is \$9,942,185.31.

APPRAISAL PROCEDURES AND RESULTS

The purpose of this appraisal of the Borough of Brentwood’s wastewater collection system is the determination of the fair market value of the wastewater’s property plant and equipment as of January 1, 2023. The report was prepared based on the 2020-2021 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statutes (PS CS) Section 1329: Valuation of acquired water and wastewater systems, collectively referred to as Act 12 of the Pennsylvania legislator’s 2016 legislative session (Act 12). The intended users of this appraisal are Pennsylvania American Water Company and the Pennsylvania Public Utility Commission (PA PUC).

The value established in this appraisal was based on the definition of Market Value as:

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“The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress.” The Appraisal of Real Estate, 14th Edition, page 58.

In conducting this appraisal, we utilized several sources of data:

- Annual (year-ending December 31) Borough of Brentwood’s wastewater system’s operational financial statements cover the period 2014 through 2021 and budgetary 2023.
- The Gateway Engineers’ Engineer’s Assessment and inventory of the Borough of Brentwood’s wastewater system’s property date January 13, 2023.
- The Handy-Whitman (water industry) Index of Public Utilities Construction Costs for northeastern United States, AUS Consultant General Plant Cost Indexes for the period 1912 through July 1, 2022, and various cost indexes published by the United States Bureau of Labor Statistics (US BLS).

In preparing this fair market value appraisal of the System’s wastewater system’s property, plant and equipment, and its operations; the cost, income, and market approaches to value were considered. Primary reliance was placed on the cost approach for the property, plant and equipment, with the income approach and market approaches being utilized to confirm the overall value of the sewer system’s operation. Detailed explanation of each approach to value is included below.

Cost Approach (Cost Approach tab) - The philosophy in the cost approach to value is that the maximum value of a property’s tangible assets is established by the cost to acquire or build a similar property. In this appraisal, the cost approach to value was analyzed using reproduction/replacement cost approach.

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Reproduction cost and replacement cost are defined as:

Reproduction cost – “The estimated cost to construct, at current prices as of the effective date of the appraisal, an exact duplicate or replica of the [property] being appraised, using the same materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, super-adequacies, and obsolescence of the subject [property].”¹¹

Replacement cost – “The estimated cost to construct, at current prices as of the effective appraisal date, a substitute for the [property] being appraised using modern materials and current standards, design and layout.”¹²

In the wastewater industry the property’s reproduction costs and replacement costs are quite similar; therefore, the property’s cost new was determined based on its replacement cost new.

The trended original cost method was utilized in preparing the replacement cost new. “Trending is a method of estimating a property’s replacement cost new in which an *index* or *trend factor* is applied to the property’s *historical cost* to convert the known cost into an indication of current cost. Simply put, trending reflects the movement of price over time.”¹³ In the trended original cost method, the System’s investment in wastewater plant and equipment is restated to costs reflective of the appraisal date, by the application of cost trends to the property’s original investment. WAD Consultants utilized the Engineer’s Assessment performed by Gateway Engineers (Engineer’s Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer’s Assessment of the System’s original cost in property, plant and equipment WAD Consultants developed the plant’s depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) on January 1, 2023 (Cost Approach tab).

The cost trends are applied to each of the various investment categories (NARUC plant accounts) by original year of placement for that investment. The cost indexes used in these studies were the Handy-Whitman Index of Public Utility Construction Costs for the water industry of the northeastern region of the United States which includes the

¹¹ The Appraisal of Real Estate, 13th Edition. Page 385

¹² ibid

¹³ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 59

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Commonwealth of Pennsylvania (HW), the AUS Consultants of General Plant Indexes (AUS), and various United States Bureau of Labor Statistics (US BLS) indexes. The following table details the costing parameters using in the trending costing procedures:

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3c)	(3d)	(3e)	
Account Number	Description	Costing Parameters	Index Series	Table	Line Reference	Lookup	Reproduction to Replacement Cost Factor
							AUS Input
353.05	Land & Land Rights - Easements		USBLS	PPI	6.00	USBLS6	1.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP		HW	W-1	35.00	HWW-135	1.00
361.30	Collection Sewers - Gravity - Mains - PVC		HW	W-1	38.00	HWW-138	1.00
361.10	Collection Sewers - Gravity - Mains - VCP		HW	W-1	36.00	HWW-136	1.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined		HW	W-1	36.00	HWW-136	1.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods		HW	W-1	36.00	HWW-136	1.00
361.70	Collection Sewers - Gravity - Manholes		HW	W-1	45.00	HWW-145	1.00
361.22	Collection Sewers - Gravity - Mains Relining		HW	W-1	38.00	HWW-138	1.00
363.00	Service Laterals		HW	W-1	39.00	HWW-139	1.00

The following table presents the development of the cost approach for the 10" Vitrified Clay Pipe Gravity Collection Mains (Accounts 361.12 / 361.10) portion of the Borough of Brentwood wastewater service area this example will be used to describe the entire cost approach process:

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of February 16, 2023

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
Account	Account	Asset Description	Average Year Installed	Average Year Installed	Units	Quantity	Replacement cost per unit	Original Cost	Costing Parameter	Placement Date Cost Index	Appraisal Date Cost Index	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)	
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation	
Eng Assmnt	AUS Input	Borough of Brentwood Wastewater Asset Detail by Gateway Program January 11, 2021	Eng Assmnt Service Date	AUS Input Year Installed	Eng Assmnt Units	Eng Assmnt Quantity	AUS Input COR Cost	Eng Assmnt Original Cost	AUS Input Cost Index Table	YearIndex	APPCodeIndex	Translator	RCN	COR (14) / RCN (13)	AUS Input COR / RCN Factor	COR (16) * (15)
NARUC Code	NARUC Code	Asset Description	Date	Year Installed	Units	Quantity	COR Cost	Original Cost	Cost Index Table	YearIndex	APPCodeIndex	Translator	RCN	COR (14) / RCN (13)	AUS Input COR / RCN Factor	COR
10" Vitrified Clay Gravity Collection Sewer																
361.18	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods		1927	1927	L.F.	1,559	Not Used	10,182.84	HWW-136	30	0	0.000	-	#DIV/0!	363,497
361.18	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods		1929	1929	L.F.	2,290	Not Used	12,856.87	HWW-136	30	0	0.000	-	#DIV/0!	468,952
361.18	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods		1930	1930	L.F.	9,862	Not Used	51,891.05	HWW-136	30	0	0.000	-	#DIV/0!	1,852,355
361.18	361.10	Collection Sewers - Gravity - Mains - VCP		1961	1961	L.F.	156	Not Used	2,187.25	HWW-136	86	0	0.000	-	#DIV/0!	27,236
361.18	361.10	Collection Sewers - Gravity - Mains - VCP		1991	1991	L.F.	296	Not Used	29,834.92	HWW-136	332	0	0.000	-	#DIV/0!	96,247
Subtotal 361.18		10" Vitrified Clay Gravity Collection Sewer						106,952.93					26,164	2,798,287	1,000	2,798,287

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Using the trended original cost method, Borough of Brentwood's investment in this example of \$106,952.93 was determined to have a replacement cost new of \$2,798,287.

When the trended cost method is applied to each of Borough of Brentwood's investment in plant, property and equipment of \$9,942,191 was determined to have a replacement cost new of \$58,151,509 detailed as follows:

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	AUS Input NARUC Code	Asset Description	Eng Assmnt Original Cost	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.05	353.05	Land & Land Rights - Easements	36	USBLS6	1,130.32	40,692	1.00	40,680
361.20	361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	HWW-135	4.52	193,952	1.00	193,952
361.30	361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	HWW-138	1.57	5,206,042	1.00	5,206,042
361.10	361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	HWW-136	5.04	6,638,454	1.00	6,638,454
361.11	361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	HWW-136	34.75	6,171,412	1.00	6,171,412
361.12	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	HWW-136	35.58	20,676,276	1.00	20,676,276
361.70	361.70	Collection Sewers - Gravity - Manholes	1,485,458	HWW-145	3.74	5,558,870	1.00	5,558,870
361.22	361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	HWW-138	1.36	3,450,059	1.00	3,450,059
363.00	363.00	Service Laterals	483,827	HWW-139	21.11	10,215,752	1.00	10,215,752
Total Borough of Brentwood Wastewater Utility			9,942,191			58,151,509		58,151,497

Replacement Cost New less Depreciation - The replacement cost described above reflects the cost of new property; however, the Borough of Brentwood's wastewater system property is not new and has experienced normal depreciation and potentially functional and or economic obsolescence. These various forms of depreciation are defined as follows:

Normal depreciation/deterioration, akin to physical deterioration, is "loss in value caused by wear, tear, age and use."¹⁴

Functional obsolescence is "the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more

¹⁴ The Dictionary of Real Estate Appraisal, 4th Edition

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efficient of less costly replacement property that new technology has developed.”¹⁵

Economic, or external, obsolescence is defined as “A loss in value caused by factors outside a property”¹⁶ and is most often indicated by insufficient earning.

Wastewater Depreciation Service Life Experience in Pennsylvania

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, WAD Consultants’ experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with PAWC and Aqua America rate cases. With each of their recent rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. WAD Consultants has reviewed the PAWC studies which are summarized in the following table:

¹⁵ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.

¹⁶ The Appraisal of Real Estate, 13th Edition, page 442.

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Summary of PAWC Depreciation Studies Prepared for Rate Case

Account	Account Description	Iowa Curves		Service Life		Remaining Life	
		12/31/2016	12/31/2019	12/31/2016	12/31/2019	12/31/2016	12/31/2019
				years	years	years	years
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	R3	R3	45	45	39.1	33.3
354.30	STRUCTURES AND IMPROVEMENTS - SPP	R2.5	S0	50	55	45.2	32.6
354.40	STRUCTURES AND IMPROVEMENTS - TDP	R2	S0	65	55	56.6	31.7
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	S1	S1	35	35	33.3	23.2
355.00	POWER GENERATION EQUIPMENT	R2.5	S0.5	35	35	29.7	19.3
360.10	COLLECTION SEWERS - FORCE MAINS	S2	R3	70	75	53.1	52.5
361.10	COLLECTION SEWERS - GRAVITY MAINS	R2.5	R2.5	70	80	56.9	54.8
361.20	MANHOLES	S1.5	S2.5	50	50	41.3	32.2
363.00	SERVICES	R3	R3	38	47	22.9	30.2
364.00	FLOW MEASURING DEVICES	L3	L2.5	20	15	13.3	5.1
365.00	FLOW MEASURING INSTALLATIONS	S1.5	S2	30	25	23.1	10.8
370.00	RECEIVING WELLS	R3	R3	50	50	42.7	33.7
371.00	PUMPING EQUIPMENT	S0	S0.5	40	30	35.5	18.2
380.00	TREATMENT EQUIPMENT	5-R2	S1.5	45	35	37.1	20.1
381.00	PLANT SEWERS	R3	R3	50	50	43.1	32.7
382.00	OUTFALL SEWER LINES	R3	R3	50	50	37.8	28.3
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	S2.5	S2.5	20	20	13.6	11.3
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	SQ	SQ	20	5	12.3	3.5
390.00	OFFICE FURNITURE AND EQUIPMENT	L4	SQ	15	20	9.5	10.1
391.00	TRANSPORTATION EQUIPMENT	SQ	L4	25	14	19.9	9.8
392.00	STORES EQUIPMENT	SQ	SQ	20	25	16.4	17.2
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	SQ	SQ	15	20	11.3	15.4
394.00	LABORATORY EQUIPMENT	L2.5	SQ	16	15	8.7	10.4
395.00	POWER OPERATED EQUIPMENT	SQ	R2	15	22	10.3	13.2
396.00	COMMUNICATION EQUIPMENT	SQ	SQ	15	15	9.6	6.9
397.00	MISCELLANEOUS EQUIPMENT		SQ		15		12.8
398.00	OTHER TANGIBLE PLANT		SQ		25		21.5

It is of particular importance in the above table the service life extension of the mains plant categories between the 2016 and the 2020 studies. The mains service lives increased as follows:

Account	Description	Service Life	
		2016	2020
360.10	COLLECTION SEWERS - FORCE MAINS	70	75
361.10	COLLECTION SEWERS - GRAVITY MAINS	70	80

WAD Consultants believe this increase in service lives is attributable to the widespread use of relining older mains instead of replacing mains which are in need of repair. The practice of relining mains with a cured in place plastic liner not only repairs specific main but has the effect of extending the life of the original mains by the length of time which the relining can be expected to last. Most relining vendors warranty their product and procedure for 50 years. Thus, in essence the original main's service life will be extended

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by 50 plus years at the date the relining occurred. For those mains associated with relining their installation date was established at the date of their relining and their depreciation parameters were established the same as the depreciation parameters of the relining, i.e., R2.5 – 60 years.

The following table details the lives used in the depreciation portion of the replacement cost new less depreciation analysis:

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023**

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(5)	(6)	(6b)
Account Number	Description	(4a)	(4b)	(5)	(6a)
		Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation
			years	% of CORLD	Table
					Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00% Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00% MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00% MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00% MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00% MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00% MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00% MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00% MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00% MACRS	25.00

As the above table demonstrates, the depreciation lives selected for the WAD Consultants appraisal are consistent with the depreciation studies' finding for wastewater plant.

Normal Depreciation – The extent of the depreciation in the property was evaluated using age-life depreciation techniques. In age-life depreciation, the property's depreciation or condition is estimated using the following formulas:

$$\text{Depreciation (\%)} = \frac{\text{Age (years)} \times 100\%}{\text{Service Life (years)}}$$

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$$\text{Condition (\%)} = \frac{\text{Remaining Life (years)} \times (100\%)}{\text{Service Life (years)}}$$

where: the property's Service Life = Age + Remaining Life
and Remaining Life = f(Survival Characteristic, Service Life, Age)

However due to the age of some of the property the extent of the depreciation was limited to 85% of the assets original cost and its replacement cost new.

When the above depreciation lives are used to quantify the property's depreciation is applied to the replacement cost new of the example 10" VCP Gravity Collection Mains portion of the Borough of Brentwood's wastewater service area of \$2,798,287, the replacement cost new less depreciation was determined to be \$1,032,131 detailed as follows:

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of February 16 2023

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
Account	Description	Placement Year	Age at February 16 2023 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion lowa-type	Normal Service Life (NSL)	Age as % of NSL	lowa Lookup	lowa Condition Percent of New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
Input	Input	Input	years	COR \$s	Input	years	% of NSL	Lookup	%	years	years	% of COR	CORLD \$s
AUS Input	Eng Assmnt	Eng Assmnt	2023/(20)+0.5	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup lowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Year1	Age	RCN	lowa	NLife	AgeP	lowa_lookup	lowaCondition	Rem Life	Total Life	Condition	CORLD
10" Vitrified Clay Gravity Collection Sewer													
Collection Sewers - Gravity - Mains - VCP Relined													
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1927	95.50	363,497	R2.5	130.0	73	R2.5073	0.39258	51.04	146.54	34.830081%	126,606
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1929	93.50	458,952	R2.5	130.0	72	R2.5072	0.39927	51.91	145.41	35.699058%	163,842
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1930	92.50	1,852,355	R2.5	130.0	71	R2.5071	0.40603	52.78	145.28	36.329846%	672,958
361.10	Collection Sewers - Gravity - Mains - VCP	1961	61.50	27,236	R2.5	80.0	77	R2.5077	0.36642	29.31	90.81	32.276181%	8,791
361.10	Collection Sewers - Gravity - Mains - VCP	1991	31.50	96,247	R2.5	80.0	39	R2.5039	0.64984	51.99	83.49	62.270931%	59,934
361.10	10" Vitrified Clay Gravity Collection Sewer			2,798,287								36.884387%	1,032,131

When the above depreciation lives are used to quantify the property's depreciation is applied to each of the Borough of Brentwood's investment in plant, property and equipment the replacement cost new (RCN) of \$58,151,509 the resultant RCN less depreciation (RCNLD) was found to be \$24,334,695 detailed as follows:

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 1, 2023 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
Input	Input	years	COR \$s	Input	years	years	years	% of COR	CORLD \$s
Eng Assmnt	Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.05	Land & Land Rights - Easements	20.11	40,680	ZNonDep	-	-	-	-	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	37.29	193,952	R2.5	80.00	47.48	84.77	80.00	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	17.39	5,206,042	R2.5	80.00	64.07	81.46	80.00	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	48.60	6,638,454	R2.5	80.00	39.39	87.99	80.00	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	97.22	6,171,412	R2.5	150.00	67.28	164.49	150.00	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	92.44	20,676,276	R2.5	130.00	52.78	145.22	130.00	7,515,724
361.70	Collection Sewers - Gravity - Manholes	60.70	5,558,870	S2.0	75.00	31.87	92.56	75.00	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	8.91	3,450,059	R2.5	60.00	51.66	60.57	60.00	2,944,641
363.00	Service Laterals	87.43	10,215,752	R3.0	50.00	8.83	96.26	50.00	1,794,264
Total Borough of Brentwood Wastewater Utility			58,151,497						24,334,695

The preliminary cost approach to value of the Borough of Brentwood's wastewater utility property was found to be \$24,334,695.

Income Approach (Income Approach tabs)

The income approach to value establishes the value of the property based on its economic returns. There are two generally accepted procedures in performing an income analysis: the direct capitalization of anticipated income, and the discounted cash flow procedures.

In the direct capitalization approach, anticipated earnings are capitalized directly into value using a market-required capitalization rate. The Borough of Brentwood's wastewater operation will be moving from a municipal operation, wherein economic returns are not the primary objective of the operation to a private (investor owned) rate regulated sewer utility operation in which economic returns are one of the objectives of the operation; therefore, the direct capitalization of earnings approach was not utilized in this appraisal.

In the discounted cash flow (DCF) approach, the property's economic returns are forecast for future periods. The cash flows (debt-free after-tax net cash flows) from operations are discounted to the appraisal date using a market derived discount rate resulting in the DCF approach's income indicator of value. Use of the DCF approach allows the appraiser to address the property's historical operating experience and its migration, in future periods, to an operation as a rate regulated income taxed (local, state and federal) operation; thus, making the DCF approach preferable in this case.

In preparing this appraisal's DCF analysis first the results from the Borough of Brentwood's wastewater utility's operations were evaluated based on an analysis of historical operating performances over the period 2013 through 2023 (Financials tab). In this analysis operating statistics such as revenues and their growth, various operating expenses were stated as function of their typical drivers (revenues, plant investment, income from operations, etc.) were analyzed. Details are provided in Income Approach tab. Using the above-described analyses, the results of future periods operations were forecast based on the migration of the Borough of Brentwood's of historical operations type experience over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utilities. These forecasts are detailed in the Income Approach tab.

In this appraisal, future operating results were forecasted as follows:

Revenues
Operating Expenses
Operating and Maintenance Expense
Depreciation & Amortization
Total Operating Expenses
Operating Income (Revenues less Operating Expenses)
Taxes
Property
Income (state & federal)
Total Taxes
After Tax Income (Operating Income less Total Taxes)
Net Cash Flows
Plus: After Tax Income
Plus: Depreciation
Less: Capital Expenditures
Plus/less: Change in Working Capital
Equals: Debt-free after-tax net cash flows

In the above-described table, the depreciation expense (both book and tax) and the capital expenditures were forecast based on the investment in property plant and equipment at the appraisal date and in subsequent periods. The initial investment in the plant and depreciation forecast were based on the criteria established in Section 1329 for the acquisition and subsequent regulation (rate base) of the acquired property by the acquiring investor-owned utility company. The following table details the forecasts of plant investment, book depreciation, tax depreciation forecast, and the resultant net plant investment and rate base as follows:

Plant Investment
Initial Investment/ Beginning Plant Balance
Additions (Capital Expenditures)
Retirements

Ending Plant Balance

Depreciation (book)

Initial Book Depreciation Reserve / Beginning Book Reserve Balance

Book Depreciation & Amortization

Retirements

Ending Book Reserve Balance

Depreciation (tax)

Initial Tax Reserve / Beginning Tax Reserve

Tax Depreciation

Retirement

Ending Tax Reserve Balance

In these forecasts, the initial plant investment was based on the allocated purchase price of \$19,364,443. Initially, the Cost Approach results are utilized to allocate the purchase price by category of plant (NARUC account). The Cost Approach results also define the property's ages and remaining lives of the various plant investment categories. Using these inputs, the future periods book and tax depreciation can be forecast, as well as the accumulated deferred taxes and resulting rate base.

With a forecast of the future rate base and an estimate of the Pennsylvania Commission's authorized return on rate base, the future return on rate base can be estimated which along with the forecast operating expenses (operating expenses, depreciation, and taxes) the future period revenue requirement forecasts can be made. An estimate of the PA Commission return on rate base is detailed as follows:

Appendix A-5.1 (WAD)

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)							
(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	50%	Embedded	3.76%	Embedded	Not Applicable	Not Applicable	1.88%
Equity	50%	Embedded	9.75%	Market	Not Applicable	Not Applicable	4.88%
Total Capital r	100.0%						6.76%
Growth (g)						Not Applicable	0.00%
Rate without Growth: $[(1+r)/(1+g)]-1$							6.76%

Based on a comparison of the forecast revenues and the forecast of the estimated revenue requirement, future period rate increases were forecast. The criteria in making future period rate adjustments was to bring the forecast achieved return in line with the required return. Based on this process the results of future operations were forecast for the next 20-year period. Period 20 of the forecast was treated in the discounted cash flow as the forecast for period 20 through perpetuity.

Finally, the resultant cash flows from future period operations of the System were discounted to the appraisal date using a market derived discount rate for a public investor-owned water/wastewater utility (Cost of Capital / Required Return tab). The following table details the market discount rate developed using the weighted average cost of capital (WACC) of the market debt and equity:

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)							
(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity	70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r	100.0%						7.97%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							4.88%

Appendix A-5.1 (WAD)

The market cost of debt was developed based on market returns for utilities debt as reported in the Value Line Investment Survey. The market cost of equity was developed using the capital asset pricing model (CAPM) and the dividend-growth model (DGM). Input to these equity costing models were developed based on Value Line Investment Surveys for the water industry published for January 6, 2023, consisting of the following nine companies:

Company	
American States Water (NYSE-AWR)	American Water ((NYSE-AWK)
California Water (NYSE-CWT)	Essential Utilities, Inc. (NYSE-WTRG)
Middlesex Water (NDQ-MSEX)	SJW Corporation (NYSE-SJW)

The Value Line data was also used to develop the market capital structure used in the WACC determination. The market required return analysis can be found in the Cost of Capital / Required Return tab.

The following table presents the results of the discounted cash flow analysis:

Appendix A-5.1 (WAD)

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis**

Discount Rate:		7.97%													
Capitalization Rate:		4.88%													
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)		
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows		
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)		
1	0.5	3,926,000	2,630,473	786,073	1,295,527	509,454	147,181	434,978	-	713,368	0.962	686,260	686,260		
2	1.5	4,789,720	2,709,387	799,077	2,080,333	1,281,256	370,155	438,245	46,641	1,225,292	0.891	1,091,735	1,777,995		
3	2.5	4,789,720	2,790,668	812,313	1,999,052	1,186,739	342,849	441,531	-	1,214,672	0.826	1,003,319	2,781,314		
4	3.5	4,789,720	2,874,388	825,783	1,915,332	1,089,549	314,771	444,844	-	1,155,717	0.765	884,124	3,665,438		
5	4.5	4,789,720	2,960,619	839,491	1,829,101	989,610	285,898	448,180	-	1,095,023	0.708	775,276	4,440,714		
6	5.5	5,603,972	3,049,438	853,438	2,554,534	1,701,096	491,447	451,542	43,969	1,567,576	0.656	1,028,330	5,469,044		
7	6.5	5,603,972	3,140,921	855,138	2,463,051	1,607,913	464,526	408,993	-	1,589,532	0.607	964,846	6,433,890		
8	7.5	5,603,972	3,235,148	868,079	2,368,824	1,500,745	433,565	412,060	-	1,523,199	0.563	857,561	7,291,451		
9	8.5	6,276,449	3,332,202	881,242	2,944,247	2,063,005	596,002	415,151	36,315	1,896,779	0.521	988,222	8,279,673		
10	9.5	6,276,449	3,432,168	894,632	2,844,281	1,949,649	563,254	418,264	-	1,862,763	0.483	899,715	9,179,388		
11	10.5	6,276,449	3,535,133	908,250	2,741,316	1,833,066	529,573	421,402	-	1,790,341	0.447	800,282	9,979,670		
12	11.5	6,653,036	3,641,187	922,100	3,011,849	2,089,749	603,729	424,563	20,335	1,963,222	0.414	812,774	10,792,444		
13	12.5	6,653,036	3,750,422	936,183	2,902,614	1,966,431	568,102	427,747	-	1,906,765	0.383	730,291	11,522,735		
14	13.5	6,653,036	3,862,934	950,502	2,790,102	1,839,600	531,460	430,955	-	1,827,687	0.355	648,829	12,171,564		
15	14.5	7,052,218	3,978,822	965,062	3,073,396	2,108,334	609,098	434,188	21,556	2,008,554	0.329	660,814	12,832,378		
16	15.5	7,052,218	4,018,610	979,862	3,033,608	2,053,746	593,327	437,444	-	2,002,837	0.305	610,865	13,443,243		
17	16.5	7,052,218	4,058,796	994,908	2,993,422	1,998,514	577,371	440,725	-	1,975,326	0.282	557,042	14,000,285		
18	17.5	7,475,351	4,099,384	1,010,200	3,375,967	2,365,767	683,470	444,029	22,849	2,225,619	0.261	580,887	14,581,172		
19	18.5	7,475,351	4,140,377	1,025,744	3,334,974	2,309,230	667,136	447,360	-	2,220,478	0.242	537,356	15,118,528		
20 and beyond	19.5	7,475,351	4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	2.811	6,162,401	21,280,929		
								8,672,915							
Age				19.5											
PW(Age) = 1/(1+Discount Rate) ^(Age)				0.224						17,826,926					
PW to Perpetuity = 1/Capitalization Rate				12.547				Net Plant ADIT		(2,293,978)					
PW _(20and beyond) = PW to Perpetuity * PW Factor _(19.5)				2.811				Rate Base		15,532,948	0.224	3,479,380	18,597,908		
								Annual Plant Construction Inflation Rate			0.0422	Input			
								Plant Inflation over 19.5 years				0.224	7,952,859	23,071,387	
								PP	19,364,443						
								OCLD	7,260,988						
								PP/OCLD	2,667						
								RCNLD	24,334,695						
								RCNLD/PP		1,256,689					
										19,519,773.60	0.224	4,372,429	19,490,957		
								Average						20,610,295	

Based on the above-described discounted cash flow analysis, the Income Approach to value of the System’s wastewater property and its operations was determined to be \$20,280,929. To ensure that the above-described forecast captured the entire economic returns of the property an additional 40-year period beyond the original 20-year forecast was made. This additional forecast indicated the reasonableness of the initial forecast results.

Market Approach (Market Approach tab)

The market or comparable sales approach to value looks to market sales of comparable properties in order to arrive at value. In this appraisal, the market approach was addressed from a comparable sales approach using Pennsylvania water and wastewater

Appendix A-5.1 (WAD)

systems and market value to book value ratios based on investor-owned water utilities reported in Value Line Investment Survey.

Market Sales – In the comparable sales market approach the sales of Pennsylvania municipal water and wastewater systems to investor-owned water/wastewater utilities following the passage of Section 1329 were used to insure comparability. The following sales were considered:

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Final Purchase Price ¹	Number of Total Customers	Relationship to the passage of Section 1329
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport		Allegheny	Collection and Treatment Wastewater	156,000,000	159,000,000	21,953	Post
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA		Chester	Collection and Treatment Wastewater	29,500,000	29,500,000	2,106	Post
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township		Montgomery	Collection and Treatment Wastewater	75,100,000	64,373,378	5,434	Post
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township		Chester	Treatment	5,000,000	5,000,000	1,248	Post
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Water Distribution Wastewater	4,734,800	4,734,800	1,186	Post
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Collection Wastewater	4,765,200	4,765,200	1,451	Post
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	Competitive 3 bidders	Montgomery	Collection	50,250,000	50,250,000	10,500	Post
8	A-2019-3006880	11/14/2018	PA American Water	Steeltown	Competitive 4 bidders	Dauphin	Water Treatment and Distribution Wastewater	22,500,000	21,750,000	2,325	Post
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury		Chester	Collection Wastewater	9,250,000	8,600,000	998	Post
10	A-2018-3004933	5/28/2018	PA American Water	Exeter		Berks	Collection and Treatment Wastewater	96,000,000	93,500,000	9,000	Post
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	Competitive 3 bidders: Aqua, F	Montgomery	Collection Wastewater	21,000,000	21,000,000	4,950	Post
12	A-2019-3014248	9/30/2018	PA American	Kane		McKean	Collection and Treatment Wastewater	17,560,000	17,560,000	2,006	Post
13	A-2020-3019634	12/10/2019	PA American	Royersford		Montgomery	Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	A-2020-3019859	12/17/2019	PA American	Valley		Chester	Water Treatment and Distribution Wastewater	7,325,000	7,325,000	1,459	Post
15	A-2020-3014248	12/17/2019	PA American	Valley Delaware County Regional Water Quality Authority (DELCORA)		Chester	Collection Wastewater	13,950,000	13,950,000	1,644	Post
16	A-2019-3015173	12/31/2019	Aqua PA		Competitive 2 bidders PAWC & Aqua	Delaware	Collection and Treatment Wastewater	276,500,000	276,500,000	16,473	Post
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove		Montgomery	Collection Wastewater	13,750,000	13,750,000	1,428	Post
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Collection and Treatment Wastewater	53,000,000	53,000,000	11,151	Post
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township		Chester	Collection and Treatment Wastewater	54,930,000	54,930,000	3,918	Post
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township		Chester	Collection and Treatment Wastewater	17,500,000	17,500,000	2,294	Post
21	A-2021-3024681	4/6/2021	PA American Water	City of York		York	Collection and Treatment	235,000,000	235,000,000	15,851	Post

In order to arrive at a measure of comparability these system sales were analyzed in relationship of the purchase price to the properties' depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) (Market tab).

Appendix A-5.1 (WAD)

The following table summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal:

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Comparable Sales Approach

Ratios See Market Tab Rows 39:45

Central Tendency and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted
All Acquisitions	1.7632	1.8333
Wastewater Collection and Treatment	1.7972	1.8248
Wastewater Collection	1.8733	2.0712
Water Treatment and Distribution	1.4354	1.5060
Water Distribution	1.3500	1.3500
Conclusion		1.8733

Market Sales Analysis - PP/CORLD

	Simple	Weighted
All Acquisitions	0.8171	0.8747
Wastewater Collection and Treatment	0.8536	0.8803
Wastewater Collection	0.8077	0.8582
Water Treatment and Distribution	0.7686	0.8381
Water Distribution	0.5320	0.5320
Conclusion		0.8077

Borough of Brentwood OCLD

Cost Approach - OCLD

7,260,988

Borough of Brentwood CORLD

Cost Approach - CORLD

24,334,695

Market Value Indication

13,602,009

Market Value Indication

19,655,133

Market Sales Analysis - PP/Customer

	Simple	Weighted
All Acquisitions	8563	9890
Wastewater Collection and Treatment	10200	11062
Wastewater Collection	6507	5387
Water Treatment and Distribution	7188	7882
Water Distribution	3992	3992

Financial Basis¹

	Market Value per Share to Book Value per Share
Financial Markets	
Market to Book (equity)	3.21
Market to Book (equity and debt)	1.94
Use (equity and debt)	1.94

Conclusion

Valley Wastewater Info

6,507

Borough of Brentwood Customers

3,980

AUS Input

Borough of Brentwood OCLD

Cost Approach - OCLD

7,260,988

Market Value Indication

25,897,860

Market Value Indication

14,086,317

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	16.51	12.67
Wastewater Collection	18.71	13.77
Water Treatment and Distribution	14.13	11.14
Water Distribution	20.24	20.24
Conclusion		18.71

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	11.45	10.17
Wastewater Collection	12.89	12.07
Water Treatment and Distribution	7.37	6.33
Water Distribution	13.59	13.59
Conclusion		12.89

Borough of Brentwood Cash Flows

1,488,495

Income Approach

Borough of Brentwood Cash Flows

Income Approach

1,661,649

Market Value Indication

27,849,734

21,418,662

Summary of Market Analyses

Indicators

OCLD	13,602,009
CORLD	19,655,133
Customers	25,897,860
Cash Flows	
EBITDA Periods 1-5	27,849,734
EBITDA Periods 1-13	21,418,662
Value Line	14,086,317

Mean	20,418,286
Median	20,536,898
Conclusion	20,418,286

The market approach conclusion of this appraisal was determined to be \$20,418,286.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of \$24,334,695 needs to be evaluated to determine if external obsolescence exists in the preliminary replacement cost new less depreciation. The appraisal literature regarding developing a cost approach state:

“The last step in the implementation of the cost approach is to estimate *economic obsolescence*. Economic obsolescence (sometimes called “external obsolescence”) has been previously defined as the loss in value or usefulness of a property caused by factors external to the asset. These factors include increased cost of raw materials, labor, utilities (without an offsetting increase in product price); reduced demand for the product; increased competition; environmental or other regulations; or similar factors.

The difficulty in measuring the full effect of economic obsolescence is one of the weaknesses of the cost approach. Because economic obsolescence is usually a function of outside influences that affect an entire business (i.e., all tangible and intangible assets) rather than individual assets or isolated groups of assets, it is sometimes measured using the income approach or by using the income approach to help identify the existence of economic influences on value. However, the cost approach can be used to measure some forms of economic obsolescence.”¹⁷

The above-described income approach value conclusion of \$21,280,929 and the approach conclusion of \$20,418,286 for the Borough of Brentwood's future wastewater system compared to the preliminary cost approach conclusion of \$24,334,695 indicates no significant external obsolescence exists in the cost approach conclusion of \$24,334,695 detailed as follows:

¹⁷ Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition, pp. 96-97.

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of December 22, 2020

(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach CORLD \$s	Economic Obsolescence % of Preliminary Cost Approach	Fair Market Value Appraisal Date Value \$s
Input	Input	Input	Calculation	Input	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	CORLD	AUS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
	10" Vitrified Clay Gravity Collection Sewer				
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1927	109,055	0.00%	109,055
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1929	142,597	0.00%	142,597
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	1930	579,523	0.00%	579,523
361.1	Collection Sewers - Gravity - Mains - VCP	1961	7,821	0.00%	7,821
361.1	Collection Sewers - Gravity - Mains - VCP	1991	52,076	0.00%	52,076
361.1	10" Vitrified Clay Gravity Collection Sewer		891,072	0.00%	891,072

Therefore, the preliminary cost approach conclusion of \$24,334,695 can be considered the final cost approach conclusion as follows:

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach CORLD \$s	Economic Obsolescence % of Preliminary Cost Approach Input AUS Economic Obsolescence Analysis	Fair Market Value Appraisal Date Value \$s Calculation (39) * [1.00-Col (40)]
Eng Assmnt	Eng Assmnt	Col (31)		
Account	Description	Prelim CORLD	EO%	FMV
353.05	Land & Land Rights - Easements	40,680	0.00%	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	109,069	0.00%	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	4,097,615	0.00%	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	3,041,305	0.00%	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	2,524,727	0.00%	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	7,515,724	0.00%	7,515,724
361.70	Collection Sewers - Gravity - Manholes	2,266,670	0.00%	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	2,944,641	0.00%	2,944,641
363.00	Service Laterals	1,794,264	0.00%	1,794,264
Total Borough of Brentwood Wastewater Utility		24,334,695		24,334,695

Appendix A-5.1 (WAD)

Value Conclusion

The Fair Market Value of the Borough of Brentwood's, Pennsylvania's wastewater property, plant and equipment and its operation were determined to be \$22,721,549 as follows:

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach			
Inventory of Assets			
Original Cost (\$OC)	9,942,191		
Depreciated Original Cost (\$OCLD)	7,260,988		
Replacement Cost			
Replacement Cost New (COR)	58,151,497		
Depreciated Replacement Cost New (CORLD)	\$ 24,334,695		
Cost Approach Conclusion	24,334,695	50%	12,167,348
Income Approach			
Required Rate Increases: 22% period 3, 17% period 6, 12% period 9 and 6% every 3rd year beginning in period 12 (Input 6)			
	21,280,929		
Income Approach Conclusion	21,280,929	40%	8,512,372
Market Approach			
Market Comparables (to)			
OCLD	13,602,009		
CORLD	19,655,133		
Customers	25,897,860		
Cash Flows (EBITDA)	27,849,734		
Market Financials (to)			
OCLD	14,086,317		
Market Approach Conclusion	20,418,286	10%	2,041,829
Appraisal Conclusion	\$ 22,721,549	100%	22,721,549
Conclusion (cost approach)	\$ 24,334,695		

Appendix A-5.1 (WAD)

As the purpose of this appraisal was to fulfill the requirements of Section 1329 of the PA CS in the establishment of value for rate making of the Borough of Brentwood's wastewater collection system's property, plant and equipment this appraisal's conclusion of \$22,721,549 is consistent with the purpose of the appraisal. As the cost approach work papers detail our value conclusion by National Association of Regulatory Utility Commissioners' (NARUC) Uniform System of Accounts (USOA) for the water industry account classifications and the installation year of the property, this detail can be used to allocate the appraisal conclusion to establish the booked value for future accounting and rate making.

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021
Fulfillment of Requirements for a Personal Property Appraisal
and Report**

- State the identity of the client and any intended users, by name or type:
Pennsylvania American Water Company and the Pennsylvania Public Utility Commission
- State the intended use of the appraisal
To establish the Fair Market Value of Brentwood Borough's (PA) Wastewater System (System).

- Describe information sufficient to identify the property, real, personal, and intangible, involved in the appraisal, including the physical and economic property characteristics relevant to the assignment.

The system consists of collection mains and laterals of various sizes and types, pumping structures, improvements and equipment, and purchased treatment capacity. The property is in good condition based on physical inspections and reviews or operating statements. The property is an operating wastewater system the economics of which were analyzed based on seven years of operating financials which were incorporated into the income approach to value analysis in this appraisal.

- State the real property interests appraised
The system's land and land rights agreements necessary to access its property.
- State the type and definition of value and cite the source of the definition, including whether the opinion of value is in terms of cash or of financing terms equivalent to cash, or based on non-market financing or financing with unusual conditions or incentives
 - *Market Value definition:*
"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." The Appraisal of Real Estate, 12th Edition, page 22.
- State the effective date of the appraisal and the date of the report
The effective date of the appraisal is January 1, 2023, and the appraisal report date is March 7, 2023.
- Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal
The appraisal considered all three approaches to value: the cost, income and market. Briefly the scopes of work for each are as follows:

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021
Fulfillment of Requirements for a Personal Property Appraisal
and Report**

Cost Approach – The cost approach utilized the trended cost method utilizing the investment inventory developed by Gateway Engineers “Engineers Assessment”. The Handy Whitman Index of Public Utility Construction Costs for the water industry were used in the trending. Depreciation was assessed based on straight line age-life depreciation method based on service life expectation for each of the various account categories.

Income Approach – The income approach utilized the discounted cash flow (DCF) method that facilitates the development of cash flows from operations as the property migrates from municipal operation to a regulated investor-owned operation. The Borough’s operating experience was analyzed (2014-2021 and budgetary 2023) in order to estimate the initial cash flows. Future customer tariff rates address the rates agreed to by the parties in the Asset Purchase Agreement between the parties. The operations were forecast for 19 periods in the future and a 20th period which is intended to reflect operation beyond that time. The discount rate was developed based on market debt and equity rates at the appraisal date.

Market Approach – The market approach was developed based on market comparable sales of Pennsylvania wastewater properties and market to book ratios developed for the water industry based on information published by Value Line Investment Surveys at the appraisal date.

Valuation Approaches Reconciliation - The appraisal conclusion was based on reconciliation of each of the approaches and the intended purpose of the appraisal.

- Clearly and conspicuously:
 - State all extraordinary assumptions and hypothetical conditions:

There were no extraordinary assumptions or hypothetical conditions in this appraisal.
 - State that their use might have affected the assignment results:

Not applicable.
- Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment

Not applicable.
- Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021
Fulfillment of Requirements for a Personal Property Appraisal
and Report**

See scope of work above.

- State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal – when reporting an opinion of market value, describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate
- State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal – a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken

No departures for Standard 1 were made.

- Include a signed certification in accordance with Standards Rule 2-3

Contained in Narrative Report.

Appendix A-5.1 (WAD)

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021
Fulfillment of Requirements for a Personal Property Appraisal
and Report**

Weinert Appraisal and Depreciation Services, LLC (WAD Consultants) certify that, to the best of its knowledge and belief:

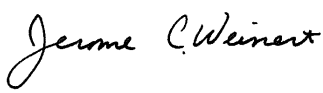

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- WAD Consultants has performed an appraisal of the Borough of Brentwood's wastewater collection system previously in the last three year.
- WAD Consultants, nor its professional staff has any present or prospective interest in the property that is the subject of this report and has no interest or bias with respect to the parties involved.
- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- Our engagement in this assignment is not contingent upon developing or reporting predetermined results.
- Our 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 appraisal.
- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2020-2021¹.
- The signers of this report have made a personal inspection of the property that is the subject of this report.
- Individuals providing significant appraisal assistance to the person signing this certification includes Scott Fogelsanger of Pennsylvania American Wastewater Company provided information obtained from the Brentwood Borough and the Engineer's Assessment report prepared by Gateway Engineers which was the inventory starting point of the Cost Approach.

¹ The Appraisal Foundation extended the applicability of the 2020-2021 Edition of USPAP through December 31, 2023.

Appendix A-5.1 (WAD)

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021
Fulfillment of Requirements for a Personal Property Appraisal
and Report**

WAD Consultants
By:

	
Jerome C. Weinert, AM, P.E., CDP Principal and Director	Elizabeth A. Weinert Associate

ASA: Accredited Senior Appraiser in the Machinery and Equipment (Public Utilities)
discipline of the American Society of Appraisers
P.E.: Registered Professional Engineer State of Wisconsin
CDP: Certified Depreciation Professions in the Society of Depreciation Professionals

Curriculum Vitae (CV) of Jerome C. Weinert, P.E., CDP, ASA

Mr. Weinert is currently owner and Principal of Weinert Depreciation and Depreciation Services, LLC dba AUS Consultants and or WAD Consultants since August 1, 2022. Previous to WAD Consultants Mr. Weinert was Principal and Director of AUS Consultants' Valuation Services Group from 1987 through July 29, 2022, He has fifty-one (2023-1972) years' experience in valuation and depreciation consulting and management. AUS, with offices across the country, has provided consulting services to the regulated utility industry nationally for over thirty-nine years. A partial list of services provided includes valuations depreciation studies, rate of return studies, cost of service studies, and rate design.

Prior to joining AUS in 1987, Mr. Weinert was employed by American Appraisal Associates, Inc. (American) for sixteen years in their Regulated Industries Group. He held various positions at American, the last being supervising appraiser. Among his other valuation responsibilities, he directed the firm's utility industry capital recovery studies and AUS Consultant's valuation of communication company assets and businesses.

Mr. Weinert graduated from the Milwaukee School of Engineering with a Bachelor of Science degree in Mechanical Engineering and received a master's in business administration from Marquette University. He is a registered professional engineer (1976) (by examination) in the state of Wisconsin as well as a senior member (1982) of the American Society of Appraisers in the public utility valuation field. This latter designation is obtained by written examination primarily in the areas of utility valuation, depreciation, and the economics of regulated firms. He is also a Certified Depreciation Professional (1997) (CDP) and founding member of the Society of Depreciation Professionals and the Society's 1995 President and sponsor of the Society's Certification and re-certification program as such Mr. Weinert developed these programs and oversaw their initial introduction into the Society. He also worked in conjunction with Society members in the development of the Society's training programs which as of 2003 has become the only such formalized depreciation training program in the North America and is an instructor in several of its courses.

During his professional career related to valuations and depreciation matters Mr. Weinert has testified before various courts and public service commissions on these subjects. He has also assisted numerous utilities in preparing capital recovery plans which specifically address the issues of plant replacement. Mr. Weinert has also presented expert testimony on valuation matters. Mr. Weinert has testified before the Pennsylvania Public Utility Commission on regulatory matters associated with Pennsylvania Section 1329 matters. On matters related to eminent domain issues, Mr. Weinert has presented expert testimony in the Massachusetts Superior Court, the Court of Common Pleas, Fayette County, Ohio, the New Hampshire Public Utilities Commission, the Twentieth Judicial Court (deposition only) in Charlotte County, Florida, the Nineteenth Judicial Circuit Court in St. Lucie County, Florida (deposition only). In regard to ad valorem taxation, Mr. Weinert has presented study results to the New York State Board of Equalization and Assessment (now the New York Office of Real Property Services (NY ORPS)), pertaining to useful life and net salvage values for all types of utility property subject to the Board's mass appraisal model. Mr. Weinert has appeared before the Valuation Adjustment Board in Florida for Duval, Hillsborough, Okeechobee, and Palm Beach counties, the Twelfth Judicial Circuit Sarasota County, Florida, the California Board of Equalization and Assessment, the Arizona Board of Assessment, the Missouri Board of Taxation, the Colorado and Texas Departments of Review, the Massachusetts Tax Appeal Court, the Superior Court of the State of Arizona in the County of Maricopa, the State Tax Appeal Board of the State of Montana, the New York City Tax Commission and the Public Utility Commission of Pennsylvania Section 1329 hearings (8).

Mr. Weinert has appeared before regulatory bodies in Alaska, Arkansas, Illinois, Indiana, Iowa, Missouri, Nevada, Nebraska, North Carolina, Ohio, Oregon, Pennsylvania, and South Carolina in support of rate-

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base valuation determination and capital recovery. He has presented testimony on depreciation matters before the Canadian Radio-Television and Telecommunications Commission (CRTC) and the United States Federal Energy Regulatory Commission (FERC). In terms of water and wastewater acquisitions and applications for regulatory approval of rate base Mr. Weinert has testified for two investor-owned acquisitions of municipal wastewater authorities one representing the municipality and secondly for the acquiring investor-owned utility. He has submitted study results to the State Commissions of Alabama, Alaska, Arkansas, Idaho, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, North Carolina, Oregon, Pennsylvania, South Carolina, Washington, and Wisconsin, and the Federal Communications Commission.

Mr. Weinert has presented papers on valuation and depreciation topics to professional and utility industry trade organizations. He also directed AUS Consultants' semi-annual week-long depreciation training programs (1988-1997). These specialized training courses, offered at basic and advanced levels, teach depreciation study techniques to public utility and public service commission staff specialists. The training includes depreciation theory and concepts and hands-on experience with personal computer-based analytical depreciation programs.

Appendix A-5.1 (WAD)

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
2023				
Verizon Business (formerly MCI)	North America	2021	2022	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
Butler Area Sewer Authority, PA	BASA Wastewater	2022	2023	Fair Market Value 1329
2022				
AT&T Communications	North America	2021	2022	Ad Valorem Tax Appraisal
AT&T Communications	California	2021	2022	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2021	2022	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2021	2022	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2019	2020	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
2021				
AT&T Communications	North America	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	California	2020	2021	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2020	2021	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2020	2021	Ad Valorem Tax Appraisal
Lower Makefield, PA	Lower Makefield Wastewater	2021	2021	Fair Market Value 1329
Cozen O'Connor	Egg Harbor, NJ Water &			
Butler Area Sewer Authority, PA	BASA Wastewater	2021	2021	Fair Market Value 1329
2020				
AT&T Communications	North America	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	California	2019	2020	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2019	2020	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2019	2020	Ad Valorem Tax Appraisal
Verizon New York, Inc.	New York	2019	2020	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2019	2020	Ad Valorem Tax Appraisal
East Norriton Township, PA	East Norriton Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Kane Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Royersford Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Wastewater	2019	2020	Fair Market Value 1329
Pennsylvania American Water Company	Valley Water	2019	2020	Fair Market Value 1329
Lehigh County Authority	Allentown Water & Sewer	2020	2020	Financing
Pennsylvania American Water Company	Upper Pottsgrove wastewater	2020	2020	Fair Market Value 1329
2019				
AT&T Communications	North America	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	California	2018	2019	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2018	2019	Ad Valorem Tax Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
AT&T - Indiana Bell Telephone Company	Indiana	2018	2019	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2018	2019	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2018	2019	Ad Valorem Tax Appraisal
Cheltenham Township, PA	Cheltenham Wastewater	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Steelton Water	2018	2019	Fair Market Value 1329
Pennsylvania American Water Company	Exeter Wastewater	2018	2019	Fair Market Value 1329
2018				
AT&T Communications	North America	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	California	2017	2018	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2017	2018	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2017	2018	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2017	2018	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
Level 3 Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	North America	2017	2018	Ad Valorem Tax Appraisal
CenturyLink Communications, LLC	California	2017	2018	Ad Valorem Tax Appraisal
East Bradford Township, PA	East Bradford Wastewater	2018	2018	Fair Market Value 1329
Pennsylvania American Water Company	Sadsbury Wastewater	2017	2018	Fair Market Value Appraisal
Pennsylvania American Water Company Appraisal	Kane Wastewater	2017	2018	Fair Market Value
2017				
AT&T Communications	North America	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	California	2016	2017	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2016	2017	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2016	2017	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2016	2017	Ad Valorem Tax Appraisal
Level 3 Communications	California	2016	2017	Ad Valorem Tax Appraisal
Whitpain Township, PA	Whitpain Wastewater	2016	2017	Appraisal for Planning
Plymouth Township, PA	Plymouth Wastewater	2016	2017	Appraisal for Planning
East Norriton Township, PA	East Norriton Wastewater	2016	2017	Appraisal for Planning
Pennsylvania American Water Company	Sadsbury Wastewater	2016	2017	Fair Market Value Appraisal
Pennsylvania American Water Company	McKeesport Wastewater	2016	2017	Fair Market Value Appraisal
Intermountain Gas Company	Idaho	2016	2017	Depreciation Study
2016				
AT&T Communications	North America	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	California	2015	2016	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2015	2016	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2015	2016	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2015	2016	Ad Valorem Tax Appraisal
Level 3 Communications	California	2015	2016	Ad Valorem Tax Appraisal
New Garden Township, PA	New Garden Wastewater	2016	2016	Fair Market Value Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
2015				
AT&T Communications	North America	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	California	2014	2015	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2014	2015	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2014	2015	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2014	2015	Ad Valorem Tax Appraisal
Level 3 Communications	California	2014	2015	Ad Valorem Tax Appraisal
Verizon Wireless	Nationwide	2014	2015	Ad Valorem Tax Appraisal
2014				
AT&T Communications	North America	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	California	2013	2014	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2013	2014	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2013	2014	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2013	2014	Ad Valorem Tax Appraisal
Level 3 Communications	California	2013	2014	Ad Valorem Tax Appraisal
Cascade Natural Gas Corporation	Oregon & Washington	2013	2014	Depreciation Study
Intermountain Gas Company	Idaho	2013	2014	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2013	2014	Depreciation Study
Verizon Wireless	Nationwide	2013	2014	Ad Valorem Tax Appraisal
2013				
AT&T Communications	North America	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	California	2012	2013	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2012	2013	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2012	2013	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2012	2013	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2012	2013	Ad Valorem Tax Appraisal
Level 3 Communications	North America,	2012	2013	Ad Valorem Tax Appraisal
	California			
Sprint Nextel Corporation	North America	2012	2013	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2013	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2013	Ad Valorem Tax Appraisal
2012				
AT&T Communications	North America	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	California	2011	2012	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2011	2012	Ad Valorem Tax Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
AT&T - Indiana Bell Telephone Company	Indiana	2011	2012	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2011	2012	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2011	2012	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2011	2012	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2011	2012	Ad Valorem Tax Appraisal
Sprint Nextel Corporation	North America	2011	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2011	2012	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2012	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2012	2012	Ad Valorem Tax Appraisal
2011				
AT&T Communications	North America	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	California	2010	2011	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2010	2011	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2010	2011	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2010	2011	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2010	2011	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2010	2011	Ad Valorem Tax Appraisal
Global Crossing	North America	2010	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Sprint Nextel Corporation	North America	2010	2011	Ad Valorem Tax Appraisal
Verizon Wireless	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
MetroPCS	Palm Beach, Florida	2010	2011	Ad Valorem Tax Appraisal
Verizon Communications	Florida - revised	2008	2011	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2010	2011	Depreciation Study
Virgin Islands Telephone Corporation	US Virgin Islands	2010	2011	Technical Update of Depreciation
				Study
2010				
AT&T Communications	North America	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	California	2009	2010	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2009	2010	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2009	2010	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2009	2010	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2009	2010	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2009	2010	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2009	2010	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2009	2010	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California	2009	2010	Ad Valorem Tax Appraisal
Global Crossing	North America	2009	2010	Ad Valorem Tax Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
MetroPCS	Palm Beach, Florida	2009	2010	Ad Valorem Tax Appraisal
2009				
AT&T Communications	North America	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	California	2008	2009	Ad Valorem Tax Appraisal
AT&T Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2008	2009	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2008	2009	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2008	2009	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2008	2009	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2008	2009	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2008	2009	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2008	2009	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2008	2009	Ad Valorem Tax Appraisal
Verizon Communications	New England - Mass	2008	2009	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2008	2009	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2008	2009	Ad Valorem Tax Appraisal
Global Crossing	North America	2008	2009	Ad Valorem Tax Appraisal
AboveNet, Inc	North America/California	2003	2009	Ad Valorem Tax Appraisal
Verizon Wireless	Ohio Properties	2004-2005	2009	Ad Valorem Tax Appraisal
Virgin Islands Telephone Corporation	US Virgin Islands	2008	2009	Depreciation Study
Sprint Nextel Corporation	North America	2008	2009	Ad Valorem Tax Appraisal
2008				
AT&T Communications	North America	2007	2008	Ad Valorem Tax Appraisal
AT&T Communications	California	2007	2008	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2007	2008	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2007	2008	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2007	2008	Ad Valorem Tax Appraisal
AT&T - Southwestern Bell Telephone Company	Arkansas, Kansas, Missouri, Oklahoma, Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2007	2008	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2007	2008	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2007	2008	Ad Valorem Tax Appraisal
Embarq Northwest	Washington	2007	2008	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	California	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2007	2008	Ad Valorem Tax Appraisal
Verizon Communications	New England Mass	2002-2007	2008	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2007	2008	Ad Valorem Tax Appraisal
Level 3 Communications	North America, California, Michigan & Arizona	2007	2008	Ad Valorem Tax Appraisal
Global Crossing	North America	2007	2007	Ad Valorem Tax Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Intermountain Gas Company	Idaho	2007	2008	Depreciation Study
2007				
AT&T Communications	North America	2006	2007	Ad Valorem Tax Appraisal
AT&T Communications	California	2006	2007	Ad Valorem Tax Appraisal
AT&T - Indiana Bell Telephone Company	Indiana	2006	2007	Ad Valorem Tax Appraisal
AT&T - Michigan Bell Telephone Company	Michigan	2006	2007	Ad Valorem Tax Appraisal
AT&T - Wisconsin Bell Telephone Company	Wisconsin	2006	2007	Ad Valorem Tax Appraisal
Embarq Florida, Inc.	Florida	2006	2007	Ad Valorem Tax Appraisal
Embarq Texas, Inc.	Texas	2006	2007	Ad Valorem Tax Appraisal
Embarq Missouri, Inc.	Missouri	2006	2007	Ad Valorem Tax Appraisal
Embarq North Carolina	North Carolina	2006	2007	Ad Valorem Tax Appraisal
Embarq Virginia	Virginia	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	California	2006	2007	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2006	2007	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	North America	2006	2007	Ad Valorem Tax Appraisal
Qwest Communications Corporation	North America	2006	2007	Ad Valorem Tax Appraisal
	California			
Level 3 Communications	North America, California, Michigan, & Arizona	2006	2007	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002 - 2006	2007	Ad Valorem Tax Appraisal
Global Crossing	North America	2006	2007	Ad Valorem Tax Appraisal
Alaska Communications System, Inc. (ACS)	ACS of Alaska	2006	2007	Depreciation Studies
	ACS of Anchorage			
	ACS of Fairbanks			
	ACS of the Northland			
	ACS Holdings			
Intermountain Gas Company	Idaho	2006	2007	Depreciation Study
2006				
AT&T Communications	Palm Beach Florida	2000 - 2003	2006	Ad Valorem Tax Appraisal
AT&T Communications	North America	2005	2006	Ad Valorem Tax Appraisal
AT&T Communications	California	2005	2006	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2005	2006	Ad Valorem Tax Appraisal
Sprint Texas, Inc.	Texas	2005	2006	Ad Valorem Tax Appraisal
Sprint Missouri, Inc.	Missouri	2005	2006	Ad Valorem Tax Appraisal
Sprint North Carolina	North Carolina	2005	2006	Ad Valorem Tax Appraisal
Sprint Virginia	Virginia	2005	2006	Ad Valorem Tax Appraisal
Embarq Nevada	Nevada	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	California	2005	2006	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2005	2006	Ad Valorem Tax Appraisal
Verizon Business (formerly MCI)	Massachusetts	2002-2--5	2006	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2005	2006	Ad Valorem Tax Appraisal
Level 3 Communications	Arizona	2002-2006	2006	Ad Valorem Tax Appraisal
Global Crossing	North America	2005	2006	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2005	2006	Depreciation Study

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
2005				
AT&T Communications	North America	2004	2005	Ad Valorem Tax Appraisal
AT&T Communications	California	2004	2005	Ad Valorem Tax Appraisal
Sprint Florida, Inc.	Florida	2004	2005	Ad Valorem Tax Appraisal
Sprint PCS	North America	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Florida	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	California	2004	2005	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2004	2005	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2004	2005	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	North America	2004	2005	Ad Valorem Tax Appraisal
Global Crossing	New York Special Franchise Property	2003 & 2004	2005	Ad Valorem Tax Appraisal
Indianapolis Power & Light	IPL	2004	2005	Depreciation Study
2004				
Sprint Florida, Inc.	Florida	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	California	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2003	2004	Ad Valorem Tax Appraisal
Verizon Communications	New England	2003	2004	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2003	2004	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2003	2004	Ad Valorem Tax Appraisal
Global Crossing	North America	2003	2004	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	North America	2003	2004	Ad Valorem Tax Appraisal
AT&T Communications	California	2003	2004	Ad Valorem Tax Appraisal
Intermountain Gas Company	Idaho	2003	2004	Depreciation Study
2003				
Sprint Florida, Inc.	Florida	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	California	2002	2003	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2002	2003	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2002	2003	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2002	2003	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	North America	2002	2003	Ad Valorem Tax Appraisal
AT&T Communications	California	2002	2003	Ad Valorem Tax Appraisal
Global Crossing	North America	2002	2003	Ad Valorem Tax Appraisal
Verizon Wireless	Broward County, FL	1998 through 2002	2003	Ad Valorem Tax Appraisal
2002				
Sprint Florida, Inc.	Florida	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	California	2001	2002	Ad Valorem Tax Appraisal
Verizon Communications	Northwest	2001	2002	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2001	2002	Ad Valorem Tax Appraisal
Level 3 Communications	North America	2001	2002	Ad Valorem Tax Appraisal
Global Crossing	North America	2001	2002	Ad Valorem Tax Appraisal
AT&T Wireless	Plymouth, MI	2001	2002	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2001	2002	Ad Valorem Tax Appraisal
AT&T Communications	North America	2001	2002	Ad Valorem Tax Appraisal

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Intermountain Gas Company	Idaho	2001	2002	Depreciation Study
AT&T Communications	California	2001	2002	Ad Valorem Tax Appraisal
2001				
Verizon	Verizon - New York	2001	2001-2	Functional Obsolescence & Useful Life studies for valuation
Sprint Florida, Inc.	Sprint Florida, Inc.	2000	2001	Ad Valorem Tax Appraisal
Verizon Communications	California	2000	2001	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	2000	2001	Ad Valorem Tax Appraisal
Global Crossing	North America	2000	2001	Ad Valorem Tax Appraisal
Sprint PCS	Cost Indexes	2000	2001	Ad Valorem Tax Appraisal
Sprint Corporation	Centel - Nevada	2000	2001-2	Depreciation Study
Alaska Communications System, Inc. (ACS)	ACS of Alaska	2000	2001	Depreciation Study
	ACS of Anchorage			
	ACS of Fairbanks			
	ACS of the Northland			
	ACS Holdings			
2000				
Sprint PCS	BTS Equipment	2000	2000	Economic Life Study
Telus Communications	Telus - Alberta & British Columbia	2000	2000	Depreciation study Phase III Price Caps
Sprint Florida, Inc.	Florida	1999	2000	Ad Valorem Tax Appraisal
Verizon Communications	California	1999	2000	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1999	2000	Ad Valorem Tax Appraisal
1999				
Sprint Corporation	Centel - Nevada	1998	1999	Depreciation Study
Intermountain Gas Company	Intermountain Gas Company	1998	1999	Depreciation Study
Sprint Florida, Inc.	Florida	1998	1999	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1998	1999	Ad Valorem Tax Appraisal
1998				
Frontier Corporation	Frontier Telephone of Rochester	1998	1997	Valuation depreciation Lives and Net Salvage Parameters
Pacific Telecom, Inc.	Telephone Utilities of Washington	1997	1998	Depreciation Study
Sprint Florida, Inc.	Florida	1997	1998	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1997	1998	Ad Valorem Tax Appraisal
Sprint Communications, LP	North America	1997	1998	Ad Valorem Tax Appraisal
Sprint Corporation	United Telephone Company of South Carolina	1998	1998	Depreciation Expense Universal Service Fund
Sprint Corporation	Carolina Telephone and Telegraph and Central Telephone of North Carolina	1998	1998	Depreciation Expense Universal Service Fund

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Telus Communications	Telus - Edmonton (TCE)	1997	1998	Depreciation Study Phase II Price Caps
1997				
Sprint Corporation	Centel - Nevada	1997	1997	Unbundling/ Inter-connection Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Oregon	1996	1997	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of Alaska And the Northland	1996	1997	Depreciation Study
Telus Communications	Telus - TCI formerly AGT	1996	1997	Depreciation Study Phase II Price Caps
Indianapolis Power & Light	IPL	1996	1997	Depreciation Study
Sprint Florida, Inc.	Florida	1996	1997	Ad Valorem Tax Appraisal
Verizon Communications	Florida	1996	1997	Ad Valorem Tax Appraisal
Pacific Telecom, Inc.	Eagle Telephone (Colorado)	1996	1997	Depreciation Study
1996				
Intermountain Gas Company	Intermountain Gas Company	1995	1996	Depreciation Study
Sprint Florida, Inc.	Florida	1995	1996	Ad Valorem Tax Appraisal
Century Telephone	Century Telephone of Ohio, Inc.	1995	1996	Depreciation Study
Telus Communications	AGT Limited (Alberta Government Telephones)	1995	1996	Depreciation Study
Johnson County Kansas Office of the Assessor	Useful Life of Computer Equipment	1995	1995	Useful/Market Life Analysis
Milwaukee Metropolitan Sewerage District	Milwaukee Metropolitan Sewerage District	1995	1996	Depreciation Study
Sprint Corporation	Long Distance Division	1995	1995	Depreciation/Recovery Status Study
Sprint Corporation	Cellular Division	1995	1995	Depreciation/Recovery Status Study
Pacific Telecom, Inc.	Alascom, Inc.	1994	1995	Depreciation Study
Pacific Telecom, Inc.	Telephone Utilities of the Northland	1993	1994	Depreciation Study
	Telephone Utilities of Alaska	1993	1994	Depreciation Study
Indiana Energy	Indiana Gas Company	1993	1994	Depreciation Study

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
Columbia Gas Transmission	Gas Pipeline Property in Sullivan County, NY	1993	1993	Useful Life Study
United Telephone - Midwest Group	United Telephone Company of Missouri	1993	1993	Modernization/ Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1992	1993	Depreciation Study
Pacific Telecom, Inc.	Alascom, Inc.	1992	1993	Depreciation Study
	Telephone Utilities of Oregon, Inc.	1991	1992	Depreciation Study
	Telephone Utilities of Washington, Inc.	1991	1992	Depreciation Study
Small Telephone Company Coalition	Oregon Small Telephone Companies	1991	1992	Depreciation Support
United Telephone Systems	United Telephone Co. of Pennsylvania	1991	1992	Instructional Depreciation Study
New York State Division of Equalization and Assessment	Electric, Gas, Water, Telephone, Pipeline, Steam, CATV	1991	1992	Useful Lives and Net Salvage Values
Rochester Telephone Company	Enterprise Telephone	1991	1992	Study Review
Indiana Energy	Indiana Gas/Richmond Gas/ Terre Haute Gas	1990	1991	Depreciation Study
American Electric Power	Indiana/Michigan Power Co.	1990	1991	Depreciation Study
Rochester Telephone Company	Rochester Telephone Co.	1990	1991	Study Review
United Telephone Systems	United Telephone Co. of Florida	1990	1991	Instructional Depreciation Study
United Telephone Systems	United Telephone Co. of Oregon	1989	1990	Study Review
Telephone and Data Systems, Inc.	Quincy Telephone Company	1990	1991	Depreciation Study
Telephone and Data Systems, Inc.	Wolverine Telephone Company	1989	1990	Depreciation Study
Indiana Energy	Indiana Gas Company, Inc.	1989	1990	Depreciation Study
Intermountain Gas Co.	Intermountain Gas Co.	1989	1990	Remaining Life/Net

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Year</u>	<u>Study Performed</u>	<u>Year</u>	<u>Activity</u>
					Salvage Support
North-West Telephone Company	North-West Telephone Company	1989	1990		Study Review
United Telephone System	United of Texas	1989	1990		Instructional Depreciation Study
	United of Missouri	1989	1990		Instructional Depreciation Study
Milwaukee Water	Milwaukee Water	1989	1990		Depreciation Study
Indiana Natural Gas Corp.	Indiana Natural Gas Corp.	1989	1990		Depreciation Study
Pacific Telecom	Telephone Utilities of the Northland	1989	1990		Depreciation Study
	Telephone Utilities of Alaska	1989	1990		Depreciation Study
	Alascom	1989	1990		Depreciation Study
	Telephone Utilities of Washington, Inc.	1988	1989		Depreciation Study
WICOR	Wisconsin Gas Company	1988	1989		Depreciation Study
ALLTEL	ALLTEL - Kentucky, Inc.	1987	1989		Depreciation Study
	ALLTEL - Ohio, Inc.	1988	1989		Depreciation Study
	Western Reserve Telephone Company	1988	1989		Depreciation Study
Milwaukee Metropolitan Sewer District	Milwaukee Metropolitan Sewer District	1988	1989		Depreciation Study
United Telephone	United of Ohio	1988	1989		ELG Support
Telephone Company	Telephone Company	1988	1989		ELG Support
United Telecom	U.S. Sprint	1988	1988		Useful Life Study
Pacific Telecom	Telephone Utilities of Oregon	1987	1988		Depreciation Study
	Telephone Utilities of Eastern Oregon	1987	1988		Depreciation Study

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**Utility Industries
Capital Recovery Activities Client List**

<u>Company</u>	<u>Property</u>	<u>Year</u>	<u>Study Performed</u>	<u>Year</u>	<u>Activity</u>
	Rose Valley Telephone Company	1987	1988		Depreciation Study
United Telephone	United of Minnesota	1987	1988		Capital Planning Support
Wisconsin Southern Gas	Wisconsin Southern Gas	1987	1988		Depreciation Study
Pacific Telecom	Glacier State Telephone Company	1986	1987		Depreciation Study
	Sitka Telephone Co.	1986	1987		Depreciation Study
	Juneau-Douglas Tel Company	1986	1987		Depreciation Study
Pacific Telecom	Telephone Utilities of Alaska	1986	1987		Depreciation Study
	Alascom	1986	1987		Depreciation Study
Lincoln Telecommunications	Lincoln Telephone and Telegraph Company	1986	1987		Digital Switching Service Life
Northwest Natural Gas Corporation	Northwest Natural Gas Corporation	1985	1986		Depreciation Study
ALLTEL	Western Reserve Telephone Company	1984	1985		Depreciation Study
	ALLTEL - Ohio	1984	1985		Depreciation Study
	ALLTEL - Alabama	1984	1985		Depreciation Study
Gulf Telephone Co.	Gulf Telephone Company	1984	1985		Depreciation Study
United Telephone Systems, Inc.	United of Iowa	1984	1985		Depreciation Study
	United of Arkansas	1984	1985		Depreciation Study
Pacific Telecom	Telephone Utilities of Washington	1983	1984		Depreciation Study
	Telephone Utilities of Eastern Oregon	1983	1984		Depreciation Study
Pacific Telecom	Telephone Utilities of Oregon	1983	1984		Depreciation Study
	Northwestern Telephone Systems, Inc., Oregon	1983	1984		Depreciation Study
	Rose Valley Telephone	1983	1984		Depreciation Study

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Appraisal & Capital Recovery Activities Client List

<u>Company</u>	<u>Property</u>	<u>Study Year</u>	<u>Year Performed</u>	<u>Activity</u>
	Company			
United Telecommunications	All United Telephone Companies	1983	1984	Capital Recovery Strategy
Lincoln Telecommunications	Lincoln Telephone & Telegraph Company	1983	1984	Depreciation Study
ALLTEL	ALLTEL - Mississippi	1982	1983	Depreciation Study
	ALLTEL - Michigan	1982	1983	Depreciation Study
North Carolina Natural Gas Corp.	North Carolina Natural Gas Corporation	1982	1983	Depreciation Study
Mid Continent Telephone (Currently ALLTEL)	Western Reserve Telephone	1982	1983	Depreciation Study
	Mid Ohio Telephone	1982	1982	Depreciation Study
	Florence Telephone Company	1980	1981	Depreciation Study
	Leeds Telephone Co.	1980	1981	Depreciation Study
	Elmore Coosa Tel Company	1980	1981	Depreciation Study
	Brookville Telephone Company	1980	1981	Depreciation Study
	Mid-Pennsylvania Telegraph	1980	1981	Depreciation Study
Telephone Utilities (Currently Pacific Telecom)	Telephone Utilities of Oregon	1979	1980	Depreciation Study
	Telephone Utilities of Eastern Oregon	1979	1980	Depreciation Study
	Northwestern Telephone Systems, Inc.-Oregon	1979	1980	Depreciation Study
	Rose Valley Telephone Company	1979	1980	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1979	1980	Depreciation Study
Telephone Utilities	Telephone Utilities of Washington	1978	1979	Depreciation Study
United Telephone Systems, Inc.	United of Ohio	1978	1979	Depreciation Study
Rochester Telephone	Rochester Telephone	1977	1978	Depreciation Study

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Papers and Seminars

	(Indiana)			
United Telephone Systems, Inc.	United of Ohio	1977	1978	Depreciation Study
Princeton Telephone	Princeton Telephone (Indiana)	1976	1977	Depreciation Study
Northwestern Telephone	Northwestern Telephone (Illinois)	1975	1976	Depreciation Study

Papers and Seminars

- 2011 Training Instructor Depreciation Basics Sessions A & B and Life and Salvage Analysis
Society of Depreciation Professionals 25th Annual Meeting
Atlanta, GA September 20-22, 2011
- 2010 Will the Real Cost Approach Please Stand Up?
National Association of Property Tax Representatives Transportation, Energy, & Communications (NAPTR-TEC)
Scottsdale, Arizona October 25-27, 2010
- Issues Affecting Assessment of Regulated Industries
Institute for Professionals in Taxation (IPT) Property Tax Symposium
Austin, Texas October 31 – November 3, 2010
- 2009 (Valuing) Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 28, 2009
- Fair Value Accounting (Appraisal Panelist)
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 29, 2009
- 2008 Valuation Issues Valuation of Assets and the Impact of Depreciation
Society of Depreciation Professionals Annual Meeting
Greenville, SC September 21-26, 2008
- Obsolescence in the Long-Distance and Local Transport Networks
Technology Futures Inc. Asset Valuation Conference
Austin Texas February 8, 2008
- 2007 Communications Industry Issues
National Association of Property Tax Representative – Transportation, Energy, & Communications
New Orleans, LA October 30, 2007
- 2006 Appraisal Procedures & Issues in a Changing communications Industry
Florida Chapter International Association of Assessing Officers' Tangible Personal Property Conference
Ocala, Florida January 12, 2006
- Valuation of Intangibles
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas July 25, 2006
- SDP 20 years of History and Beyond
Society of Depreciation Professionals 20th Annual Meeting
Long Beach, CA September 18, 2006
- 2005 Valuation in a World with Asset Impairments
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas August 1, 2005

Papers and Seminars

- 2004 Depreciation in the Valuation of Assets
Society of Depreciation Professionals' Eighteenth Annual Meeting
Washington, D.C., September 13, 2004
- 2003 Cost Approach and the Use of Appraisal Guidelines
Institute for Professionals in Taxation – Property Tax Symposium
Fort Lauderdale, FL, September 17, 2003
- Cost Approach – Obsolescence and Depreciation
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 28, 2003
- 2000 Appraisal Issues Associated with Technological Change in the Wireline Telecommunications Industry
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, July 31, 2000
- The Impact of Advancing Technology and the Changing Regulatory Environment on Obsolescence Calculations for Ad Valorem Valuation Purposes
Journal of Property Tax Management, Spring 2000
- 1996 How to Develop a Reproduction/Replacement Cost New Less Depreciation Approach to Value
Appraisal for Ad Valorem Taxation, Wichita State University
Wichita, Kansas, August 4, 1996
- 1995 Valuation Method, Techniques and Strategies (How to Quantify Stranded Investment) (Market, Income, & Cost Approach
AGA Depreciation Committee Meeting
Denver, Colorado, August 6-9, 1995, jointly presented with Earl Robinson of AUS Consultants
- 1994 Integrating Future Expectations for the Telephone Industry into Historical Depreciation Analysis
United States Telephone Association (USTA's 1994 Capital Recovery Seminar)
Scottsdale, Arizona, September 12-13, 1994
- 1994 Capital Recovery: United States versus Canada
Canadian Telephone Industry's Annual Capital Recovery Seminar
Edmonton, Alberta, Canada June 14-15, 1994
- 1990 Capital Recovery: Methods, Terminology, Procedures, and Record Keeping
United States Telephone Association (USTA)'s
1990 Non-FCC Subject and Small Company Capital Recovery Seminar
Minneapolis, Minnesota April 10_11, 1990
- Integration of Technology Forecasting Into Historical Life Studies
29th Iowa State Regulatory Conference
Ames, Iowa May 15-17, 1990
- The 1990's and the Second Wave of Major Plant Retirements in the Communications Industry
NARUC's Seventh Biennial Information Conference
Columbus, Ohio September 12-14, 1990

Papers and Seminars

How Do We Incorporate Change into the Study Filing Procedures?
USTA's 1990 Capital Recovery Seminar
Chicago, Illinois October 16_17, 1990

1989 Plant Modernization: Capital Planning and Capital Recovery
Midwest Utilities Conference
Chicago, Illinois September 11_14, 1989

Price Indexes Today: Procedures, Uses, and Misuses
Society of Depreciation Professionals' Third Annual Meeting
New Orleans, Louisiana December 6_7, 1989

1988 Plant Modernization: Capital Planning and Capital Recovery
National Association of Regulatory Utility Commissioners (NARUC)'s
Sixth Biennial Regulatory Information Conference
Columbus, Ohio September 14_16, 1988

Papers and Seminars

- 1997 Sprint Corporation - West Finance Center
Overland Park, Kansas, August 1997
- 1997 Rochester Telephone Corporation
Rochester, New York, April 1997
- 1996 Sprint-Florida-Vista United Telecommunications
Altamonte Springs, Florida August 27-29, 1996
- 1994 Saskatchewan Telecommunications
Regina, Saskatchewan, Canada, June 1994
- 1994 AUS Consultants/Leroy J. Murphy and Associates 1994 Capital Recovery Seminar
May 1994
- 1993 Manitoba Telephone System, Winnipeg, Manitoba, December 1993
- 1993 Society of Depreciation Professionals Annual Meeting
Charleston, South Carolina September 30, 1993
- 1993 SPRINT - Local Telephone Division
Atlanta, Georgia August 11-12, 1993
- 1993 AUS Consultants/Leroy J. Murphy and Associates 1993 Capital Recovery Seminar
Chicago, Illinois May 11 - 13, 1993
- 1993 Canadian Telephone Capital Recovery Seminar
Halifax, Nova Scotia April 20 - 22, 1993
- 1993 United Telephone, Midwest Group
Overland Park, Kansas January 20, 1993
- 1992 BellSouth Corporation
Birmingham, Alabama November 23, 1992
- 1992 Sprint - Local Telephone Division
Kansas City, Kansas November 18 - 20, 1992
- 1992 Society of Depreciation Professionals Annual Meeting
San Antonio, Texas September 9 - 10, 1992
- 1992 AUS Consultants/Leroy J. Murphy and Associates 1992 Capital Recovery Seminar
Chicago, Illinois October 6 - 8, 1992
- 1991 Society of Depreciation Professionals Annual Meeting
Nashville, Tennessee November 20-22, 1991
- 1991 ALLTEL Corporation Microcomputer Depreciation Studies System Training
Hudson, Ohio October 14-16, 1991

Capital Recovery Training

2016	Society of Depreciation Professionals Annual Training Charleston, South Carolina, September 18-23, 2016
2015	Society of Depreciation Professionals Annual Training Austin Texas September 2015
2014	Society of Depreciation Professionals Annual Training New Orleans, Louisiana September 2014
2013	Society of Depreciation Professionals Annual Training Salt Lake City, Utah September 2013
2012	Society of Depreciation Professionals Annual Training Minneapolis, Minnesota, September 16-18, 2012
1991	United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training Kansas City, Kansas September 23-25, 1991
1991	AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar Lake Geneva, Wisconsin September 17-19, 1991
1991	Rochester Telephone Corporation, Capital Recovery/Microcomputer Depreciation Studies System Training, Rochester, New York September 3-7, 1991
1991	Ameritech Services, Microcomputer Depreciation Studies System Training Chicago, Illinois May 16-17, 1991
1991	AUS Consultants/Leroy J. Murphy and Associates 1991 Capital Recovery Seminar Washington, D.C. April 9_11, 1991
1990	United Telecommunications, Inc., Capital Recovery Seminar Overland Park, Kansas December 1990
1990	AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar Chicago, Illinois September 24_27, 1990
1990	AUS Consultants/Leroy J. Murphy and Associates 1990 Capital Recovery Seminar Chicago, Illinois January 29-February 1, 1990
1990	United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1990
1989	United Telecommunications, Inc., Capital Recovery/Microcomputer Depreciation Studies System Training, Chicago, Illinois July 1989

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Capital Recovery Training

- 1989 AUS Consultants/Leroy J. Murphy and Associates 1989 Capital Recovery Seminar
Chicago, Illinois March 6_9, 1989
- 1988 AUS Consultants/Leroy J. Murphy and Associates 1988 Capital Recovery Seminar
Chicago, Illinois July 25_28, 1988
- 1988 United Telecommunications, Inc., Microcomputer Depreciation Studies System Training
Kansas City, Kansas January 1988

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Pennsylvania Section 1329 Water and Wastewater Transactions

Utility System	Acquirer	Date	Purchase Price \$
New Garden Sewer System	Aqua Pennsylvania (Aqua PA)	August 2016	29,500,000
McKeesport Wastewater	Pennsylvania American (PAWC)	September 2016	156,000,000
Limerick Wastewater	Aqua PA	November 16, 2016	75,100,000
East Bradford Wastewater	Aqua PA	December 20, 2017	5,000,000
Sadsbury Wastewater	PAWC	September 5, 2017	9,500,000
Mahoning Water	SUEZ	April 20, 2018	4,734,800
Mahoning Wastewater	SUEZ	April 20, 2018	4,765,200
Steelton Water	PAWC	November 14, 2018	22,500,000
Exeter Wastewater	PAWC	May 28, 2018	96,000,000
Cheltenham Wastewater	Aqua PA	June 2018	50,250,000
East Norriton Wastewater	Aqua PA	October 29, 2018	21,000,000
Kane Wastewater	PAWC	September 30, 2018	17,560,000
Royersford Wastewater	PAWC	December 10, 2019	13,000,000
Valley Water	PAWC	December 17, 2019	7,325,000
Valley Wastewater	PAWC	December 17, 2019	13,950,000
DELCORA	Aqua PA	September 17, 2019	276,500,000
Upper Pottsgrove	PAWC	April 28, 2020	13,750,000
Lower Makefield	Aqua PA	September 17, 2020	53,000,000
East Whitland	Aqua PA	January 8, 2021	54,930,000
Willistown	Aua PA	January 20, 2021	17,500,000
City of York	PAWC	April 6, 2021	235,000,000

Appendix A-5.1 (WAD)

Water and Wastewater System Sales Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	Type of Purchase Process	County	Type of Facility Wastewater Collection and Treatment	Initial Purchase Price	Final Purchase Price ¹	Number of Total Customers	Relationship to the passage of Section 1329
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport		Allegheny	Wastewater Collection and Treatment	156,000,000	159,000,000	21,953	Post
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA		Chester	Wastewater Collection and Paid for and Owned Treatment	29,500,000	29,500,000	2,106	Post
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township		Montgomery	Wastewater Collection and Treatment System	75,100,000	64,373,378	5,434	Post
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township		Chester	Wastewater Collection and paid for treatment Capacity Water Distribution System	5,000,000	5,000,000	1,248	Post
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Wastewater Collection	4,734,800	4,734,800	1,186	Post
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning	Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	4,765,200	1,451	Post
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	Competitive 3 bidders	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	Competitive 4 bidders	Dauphin	Water Distribution and Treatment Wastewater Collection	22,500,000	21,750,000	2,325	Post
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury		Chester	Wastewater Collection and Treatment	9,250,000	8,600,000	998	Post
10	A-2018-3004933	5/28/2018	PA American Water	Exeter		Berks	Wastewater Collection and Treatment	96,000,000	93,500,000	9,000	Post
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	Competitive 3 bidders: Aqua, F	Montgomery	Wastewater Collection and Treatment	21,000,000	21,000,000	4,950	Post
12	A-2019-3014248	9/30/2018	PA American	Kane		McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	A-2020-3019634	12/10/2019	PA American	Royersford		Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	A-2020-3019859	12/17/2019	PA American	Valley		Chester	Water Treatment and Distribution System Wastewater Collection System	7,325,000	7,325,000	1,459	Post
15	A-2020-3014248	12/17/2019	PA American	Valley Delaware County Regional Water Quality Authority (DELCOA)		Chester	Wastewater Collection and Treatment	13,950,000	13,950,000	1,644	Post
16	A-2019-3015173	12/31/2019	Aqua PA	Upper Pottsgrove	Competitive 2 bidders PAWC & Aqua	Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Post
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection and Treatment	13,750,000	13,750,000	1,428	Post
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Purchased Treatment Capacity Wastewater Collection and Treatment	53,000,000	53,000,000	11,151	Post
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township		Chester	Purchased Treatment Capacity Wastewater Collection and Treatment	54,930,000	54,930,000	3,918	Post
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township		Chester	Wastewater Collection and Treatment	17,500,000	17,500,000	2,294	Post
21	A-2021-3024681	4/6/2021	PA American Water	City of York		York	Wastewater Collection and Treatment	235,000,000	235,000,000	15,851	Post

ASSET PURCHASE AGREEMENT

Between

NEW GARDEN TOWNSHIP

And

NEW GARDEN TOWNSHIP SEWER AUTHORITY

And

AQUA PENNSYLVANIA WASTEWATER, INC.

August ____, 2016

New
GRABBY

b. The purchase price for the Assets will consist of payment of Twenty-nine Million Five Hundred Thousand Dollars (\$29,500,000.00) (the "Purchase Price") to be paid by Buyer at Closing in one lump sum payment of immediately available funds. Buyer and Seller agree that the results of the appraisals pursuant to Act 12 (as defined herein) shall have no effect on the Purchase Price.

c. Buyer also agrees to contribute Twenty Thousand Dollars (\$20,000.00) toward Seller's closing costs.

2.6 Assumption of Liabilities and Contracts

a. Buyer will (a) satisfy and comply with all conditions and requirements of the permits specified in Schedule 2.6(a) upon transfer of such permits to Aqua.

b. Seller and Buyer shall: (I) obtain consents to the assignment of the contracts listed on Schedule 2.6(b), section I from all parties to said contracts if required by the terms of the respective contracts; and (II) arrange for the termination or amendment of the contract listed on Schedule 2.6(b), section II and the execution of a new agreement or, in the case of an amendment, an assignment, that is agreeable to Aqua in its sole discretion, with any such new agreement to replace the terminated contract. The contracts listed on Schedule 2.6(b) are collectively referred to herein as the "Assumed Liabilities".

c. Seller hereby acknowledges that, following the effective time of Closing, Aqua shall be responsible for the provision of wastewater service to the customers of Seller.

d. All other liabilities and obligations of Seller shall remain the sole responsibility of Seller. Other than the Assumed Liabilities, Buyer shall not assume and shall not be liable for, and Seller shall indemnify and hold harmless Aqua and its officers, employees and agents from and against, any and all liabilities or obligations of Seller of any nature whatsoever whether express or implied, fixed or contingent, known or unknown at the time of Closing.

3. CLOSING

Closing hereunder (the "Closing") shall take place at the offices of Lamb McErlane PC, located at 24 E. Market St., West Chester, PA 19381 or other mutually agreed upon location, commencing at 10:00 a.m. local time, on the later to occur of: (i) one hundred fifty (150) days from the date Seller accepts Buyer's offer, as evidenced by the date of Seller's execution of this Agreement, and (ii) forty-five (45) days (a) after receipt of the last required unappealed regulatory approval of the transactions contemplated herein and (b) fulfillment of all conditions precedent under Section 4 hereof. Seller may terminate this Agreement should Buyer fail to obtain unappealed regulatory approval of the transactions contemplated herein within 365 days of the Effective Date, unless mutually extended in writing. The date of the Closing is referred to herein as the "Closing Date". The effective time of the Closing shall be 12:01 a.m. on the day following the Closing Date.

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ASSET PURCHASE AGREEMENT

By and Among

THE CITY OF MCKEESPORT,

THE MUNICIPAL AUTHORITY OF THE CITY OF MCKEESPORT

AS SELLER

and

PENNSYLVANIA AMERICAN WATER COMPANY

AS BUYER

Dated as of September ____, 2016

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Execution Copy

not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

(e) From the date of this Agreement until the Closing Date, the Seller shall collect accounts receivable and pay accounts payable in the ordinary course and in a manner consistent with its past practices.

ARTICLE III.

ESCROW AND PURCHASE PRICE

Ma Keesport

Section 3.01. Escrow Amount. At Closing, Seven Million Eight Hundred Thousand Dollars (\$7,800,000) of the Purchase Price (defined below) shall be deposited in escrow (the "Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of Exhibit A, by and among the Seller, the City, the Buyer and the Escrow Agent (the "Closing Escrow Agreement") to provide for any indemnification claims of the Buyer due and payable by the Seller pursuant to Section 8.02 herein; *provided, however*, that the Escrow Fund shall be released to the Seller or the City (in accordance with the Closing Escrow Agreement) on the Escrow Release Date, except for any amount reasonably required to cover any indemnification claim made by the Buyer prior to such date.

Section 3.02. Purchase Price. The purchase price for the Acquired Assets shall be One Hundred Fifty-Six Million Dollars (\$156,000,000) or the final appraised value as determined under 66 Pa.C.S. Section 1329, whichever is higher (the "Purchase Price") which shall be paid as follows:

(a) Within five (5) Business Days of the Effective Date, Buyer shall deposit Five Million Dollars (\$5,000,000) of the Purchase Price, payable to the City in immediately available funds (the "Signing Cash Deposit"), subject to Section 14.02 and secured by the City with a duly executed note (the "Deposit Note"), in the form attached hereto as Exhibit B;

(b) Within five (5) Business Days of receipt of written notice from the City that it has due and owing specific payables which meet the definition of Appropriate Use, such payables meet or exceed the amount set forth below and such payables are specifically identified in said notice, but in any case not prior to January 15, 2017, Buyer shall deposit Two Million Dollars (\$2,000,000) of the Purchase Price, payable to the City in immediately available funds (the "2017 Cash Deposit") and together with the Signing Cash Deposit, the "Deposits"), subject to Section 14.02 and secured by the City with the Deposit Note.

(c) At Closing, Buyer shall (i) provide for payment in full the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Between

Limerick Township, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of November 16, 2016

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Parties the economic and, to the extent permitted under applicable Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as the Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under applicable Law and the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for the Seller, pay, perform and discharge the liabilities and obligations of the Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or prior to the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under applicable Law, the Seller shall, at Buyer's expense, hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the date hereof and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the date hereof, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III

PURCHASE PRICE AND ADDITIONAL CONSIDERATION

Section 3.01. Purchase Price and Additional Consideration. The purchase price for the Acquired Assets shall be Seventy-Five Million One Hundred Thousand Dollars (\$75,100,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for the payment in full the total amount of Outstanding Indebtedness; and

(b) Subject to any adjustment in Purchase Price resulting from the proration procedures set forth in Section 3.01(c), Buyer shall pay to the Seller at Closing by wire transfer

LIMERIC

ASSETS PURCHASE AGREEMENT
Between
EAST BRADFORD TOWNSHIP
And
AQUA PENNSYLVANIA WASTEWATER, INC.

December 20, 2017

within thirty (30) days after receipt thereof.

*ENST
Berklee*

1.4 Excluded Assets

The Assets shall not include any of the following (collectively, the "Excluded Assets"):

- a. Any and all customer service laterals that run from the curb area (or edge of road or right-of-way) to each of the individual customer's residences or structures.
- b. Any and all piping and fixtures internal to each of the individual customer's residences or structures.
- c. Any of Seller's cash, investments, cash equivalents and accounts, including without limitation any accounts receivable or unbilled charges for Services furnished for periods prior to and up to the Closing Date.
- d. The real and personal property, including the improvements on said real property, described in Schedule 1.4.
- e. Any other asset, property, easement or interest as is shown in Schedule 1.4.

1.5 Consideration

The aggregate cash purchase price for the Assets is FIVE MILLION U.S. Dollars (\$5,000,000.00) (the "Purchase Price"). The Purchase Price shall be paid by Buyer at Closing, by wire transfer of immediately available funds to Seller.

Buyer and Seller agree to utilize the procedures under Act 12 of 2016, 66 Pa. C.S. § 1329 ("Section 1329") in completing this transaction.

Buyer agrees to and shall (i) assume at Closing the Assumed Liabilities (hereinafter defined), and (ii) pay at Closing Seller's actual, out-of-pocket costs incurred for services performed, excluding attorneys' fees, after the date of this Agreement in order to comply with the PUC Implementation Order, provided such costs do not relate to the Original Cost Study or any update thereto, and further provided such costs do not relate to the preparation and completion of the Seller's Utility Valuation Expert appraisal report and any additional work by the Seller's Utility Valuation Expert necessary to assist in the processing and prosecution of the application to the Pennsylvania Public Utility Commission ("PUC") in regard to this transaction under Section 1329. Buyer and Seller will be responsible for the costs associated with their respective Utility Valuation Experts. Buyer and Seller agree that the costs associated with the licensed engineer to develop and finalize the Engineer's Assessment will be paid fifty percent (50%) by Buyer and fifty percent (50%) by Seller.

Upon its execution and delivery of this Agreement to the Seller, the Buyer shall obtain a performance bond equal to ten percent (10%) of the Purchase Price (the "Bond"). The Bond

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**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application of SUEZ Water Pennsylvania Inc.,	:	
Pursuant to the Pennsylvania Public Utility Code,	:	A-2018-3003517
66 Pa. C.S. § 1102(a), and 66 Pa. C.S. § 1329	:	
For approval of 1) the transfer, by sale, of	:	
Substantially all of the Township of Mahoning’s	:	
Assets, properties and rights related to its	:	
Wastewater collection and conveyance system to	:	
SUEZ Water Pennsylvania Inc., and 2) the rights	:	
Of SUEZ Water Pennsylvania Inc. to begin to	:	
Offer or furnish Wastewater collection and	:	
Conveyance service to the public in portions of the	:	
Townships of Mahoning, Cooper and Valley,	:	
Montour County, Pennsylvania	:	

Application of SUEZ Water Pennsylvania Inc.,	:	
Pursuant to the Pennsylvania Public Utility Code,	:	A-2018-3003519
66 Pa. C.S. § 1102(a), and 66 Pa. C.S. § 1329	:	
For approval of 1) the transfer, by sale, of	:	
Substantially all of the Township of Mahoning’s	:	
Assets, properties and rights related to its water	:	
Distribution system to SUEZ Water	:	
Pennsylvania Inc., and 2) the rights of SUEZ Water	:	
Pennsylvania Inc. to begin to offer or furnish	:	
Water distribution service to the public in	:	
Portions of the Townships of Mahoning, Cooper	:	
And Valley, Montour County, Pennsylvania	:	

RECOMMENDED DECISION

Before
Joel H. Cheskis
Deputy Chief Administrative Law Judge

this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

9. That SUEZ Water Pennsylvania Inc. may defer depreciation related to post-acquisition improvements not recovered through the DSIC for book and ratemaking purposes. The Commission recognizes that the Joint Petitioners reserve their rights to litigate their positions fully in future rate cases when this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

10. That, pursuant to 66 Pa. C.S. § 1329(d)(iv), SUEZ Water Pennsylvania Inc. may include, in its next base rate case, a claim for transaction and closing costs related to the acquisition of the Mahoning water and wastewater systems. The Commission recognizes that the Joint Petitioners reserve their rights to litigate their positions fully in future rate cases when this issue is ripe for review and does not construe the Joint Petitioners' assent to this term to operate as their preapproval of SUEZ Water Pennsylvania Inc.'s request.

11. That the Commission's Secretary's Bureau shall issue Certificates of Filing or approvals for the following agreements between SUEZ Water Pennsylvania Inc. and a municipal corporation:

- (1) Asset Purchase Agreement Between Township of Mahoning and SUEZ Water Pennsylvania Inc., dated April 20, 2018;
- (2) Water Service Agreement dated July 9, 2001, between Danville Municipal Authority and Mahoning Township Authority;
- (3) Service Agreement dated October 17, 2005 between Valley Township and Mahoning Water Authority;
- (4) Connection and Conveyance Agreement dated October 16, 2017 between the Township of Mahoning and Cooper Township Municipal Authority;
- (5) Service Agreement dated October 17, 2005 between Valley Township and Mahoning Sewer Authority;

13. SWPA was notified by Mahoning that SWPA was selected as the successful bidder for the Systems, and Mahoning sent a draft asset purchase agreement to SWPA for review and comment. SWPA Statement No. 1 p. 9.

14. The final asset purchase agreement (“APA”) was signed on April 20, 2018. SWPA Statement No. 1 p. 9.

15. The APA sets forth the terms and conditions pursuant to which Mahoning will sell, and SWPA will purchase, substantially all assets, properties and rights that Mahoning owns and uses in connection with the Systems. Under the APA, the closing of the Transaction will occur after the receipt of all applicable governmental approvals, including approvals from the Commission, and after all applicable conditions have been met (or waived) by the parties. SWPA Statement No. 1 p. 10.

16. Upon closing of the Transaction, SWPA will take ownership of the Systems and begin rendering water distribution and wastewater collection and conveyance services to Mahoning’s current customers and Mahoning will permanently discontinue providing or furnishing water distribution and wastewater collection and conveyance service to the public. SWPA Statement No. 1 p. 10.

17. The negotiated purchase price is \$9,500,000 for both the Water System and the Wastewater System. SWPA has allocated \$4,734,800 of the negotiated purchase price to the Water System and \$4,765,200 of the negotiated purchase price to the Wastewater System. SWPA Statement No. 1 pp. 11-12.

D. The Application and the Utility Valuation Expert (“UVE”) Appraisals

18. On July 20, 2018, SWPA filed an application with the Commission to acquire the Water System (the “Water Application”) and an application to acquire the Wastewater System (“Wastewater Application”) (together, the “Applications”). Water

ASSET PURCHASE AGREEMENT
BETWEEN
TOWNSHIP OF SADBURY
AND
PENNSYLVANIA-AMERICAN WATER COMPANY

SEPTEMBER 5, 2017

(c) Any and all grinder pumps, piping and fixtures located at the curb-line or edge-of-the road to and throughout the customer's property and included as components of the Customer Sewer Laterals;

(d) Any and all stormwater system facilities including, but not limited to: (a) facilities located on, in, within, or under the real property, including easements, that is a part of the Assets, (b) facilities that are connected to the System and located within the public rights-of-way and (c) facilities or assets used in the operation of a municipal separate stormwater system;

(e) Seller's cash on hand on the date of Closing and Seller's account receivables related to the System for services rendered through the close of business on the Closing Date;

(f) All rights of Seller under this Agreement and related Bill of Sale and Assignment of Contracts Agreement as it pertains to the transfer and sale herein contemplated; and

(g) the specific assets, properties and rights of Seller set forth on Schedule 1.3.

1.4 Accounts Receivable. Accounts receivable for wastewater services related to the System rendered through the close of business on the Closing Date shall be excluded assets as per Section 1.3, and accounts receivable for wastewater services related to the System rendered thereafter shall belong to PAWC.

**ARTICLE 2
PURCHASE PRICE**

SUBS 17

2.1 Purchase Price for the Assets.

(a) Upon its execution and delivery of this Agreement to the Seller, PAWC shall remit a deposit of THIRTY SEVEN THOUSAND FIVE HUNDRED DOLLARS (\$37,500.00) (i) which shall be retained by Seller in the event that the Closing does not occur for any reason other than Seller's default under this Agreement or a failure of a condition precedent under Section 8.1 below, and (ii) which, in the event of Closing, shall be applied to the Purchase Price.

(b) Subject to the terms and conditions of this Agreement, the purchase price (the "Purchase Price") for the Assets shall be NINE MILLION FIVE HUNDRED THOUSAND DOLLARS (\$9,500,000.00). The parties agree that the Purchase Price represents the "negotiated purchase price" for such Assets, pursuant to the valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. The Purchase Price shall be payable directly to Seller on the Closing Date by wire transfer or by corporate check, at Seller's discretion.

2.2 Use of Fair Market Valuation Process. Following the execution of this Agreement, PAWC and Seller shall each take such any and all further actions as are necessary to invoke, commence and complete the fair market valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. Without limiting the generality of the foregoing, PAWC and Seller have each engaged a utility valuation expert from the list of such experts maintained by the Pennsylvania Public Utility Commission ("PUC") and have jointly selected and engaged a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa. C.S. § 1329(a)(4). The final reports of each of the two utility valuation experts are attached as Schedule 2.2. All costs and expenses associated with the utility valuation experts shall be the responsibility of the party engaging such expert. All costs and expenses associated with the licensed engineer jointly selected by the parties were shared equally between PAWC and Seller prior to the execution of this Agreement. PAWC

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ASSET PURCHASE AGREEMENT

By and Between

Steelton Borough Authority

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of November 14, 2018

the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the date hereof and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the date hereof, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01 Purchase Price.

(a) Purchase Price for the Assets. Subject to the terms and conditions of this Agreement, the purchase price ("Purchase Price") for the Acquired Assets shall be Twenty Two Million Five Hundred Thousand Dollars (\$22,500,000). The Purchase Price shall be payable directly to seller on the Closing Date by wire transfer.

(b) Use of Fair Market Valuation Process. Following the execution of this Agreement, Buyer and Seller shall each take such actions as are necessary to invoke, commence and complete the fair market valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. §1329. Without limiting the generality of the foregoing, Buyer and Seller shall each engage a utility valuation expert other than HRG from the list of such experts maintained by the PaPUC and shall jointly utilize HRG, a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa.C.S. §1329(a)(4). All costs and expenses associated with the licensed engineer jointly utilized by the parties shall be shared equally between the Buyer and Seller. Seller agrees that Buyer shall prosecute an application for approval of the transaction contemplated by this Agreement and Buyer agrees that: (1) Seller has the right to intervene and participate in any regulatory or legal proceeding relating to the application, including negotiation or execution of a settlement agreement related to the application; (2) Buyer shall not oppose

ASSET PURCHASE AGREEMENT
Between
TOWNSHIP OF EXETER
(as Seller)
and
PENNSYLVANIA-AMERICAN WATER COMPANY
(AS BUYER)
dated as of May 24, 2018

Article 2.4 Excluded Liabilities. Any other liabilities and obligations of Seller shall remain the sole responsibility of Seller, including any liabilities and obligations of Seller arising under or to be performed under the Collective Bargaining Agreement and any liabilities or obligations with respect to any Compensation Plan that the Seller maintains, contributes to, has an obligation to contribute to or otherwise has any liability with respect thereto, and any withdrawal liability or funding obligation incurred by Buyer on or after the Closing with respect to any multi-employer pension plan (the "Excluded Liabilities").

Article 2.5 Customer Billing. Unless Buyer and Seller agree to a different procedure prior to Closing, Seller shall issue final bills for all customer accounts in accordance with its current billing practices after the Closing Date.

Article 2.6 Purchase Price.

Exeter

a) **Purchase Price.** Subject to Section 3.4, the purchase price for the sale, transfer, assignment, conveyance and delivery of the Assets shall be \$96,000,000.00 as may be adjusted in accordance with the terms of this Agreement (the "Purchase Price"), which shall be paid by Buyer to Seller at Closing in one lump sum payment by cash or by wire transfer of immediately available funds. Buyer and Seller agree that the results of any appraisals pursuant to Act 12 (defined below) shall have no effect on the Purchase Price.

b) **Deposit.** Within fourteen (14) days after the Effective Date, Buyer shall remit a deposit in the form of a performance bond in substantially the form attached hereto as Exhibit "A" (the "Bond") in the amount of \$9,600,000.00 (equal to ten percent (10%) of the Purchase Price) ("Deposit"). The Bond is payable to Seller and the surety company shall pay to Seller the amount of the Bond under the circumstances set forth in Sections 10.1(a) and 10.2(c), if applicable. Upon Closing, Seller will provide a full and unconditional discharge and release of the Bond by way of a written release letter addressed to and in a form reasonably satisfactory to the surety company (the "Bond Release").

c) **Intentionally Deleted.**

d) **Transfer Taxes.** Any and all deed stamps or transfer taxes that may be due the Commonwealth of Pennsylvania or any political subdivision in connection with the sale, transfer, assignment, conveyance and delivery hereunder of the Assets to Buyer (collectively, "Transfer Taxes"), shall be borne equally between Buyer and Seller.

**ARTICLE 3
CLOSING**

Article 3.1 Closing. The Closing hereunder (the "Closing") shall take place at the offices of Fox Rothschild LLP at 2000 Market Street, Philadelphia, Pennsylvania, or other mutually agreed upon location, commencing at 10:00 a.m. local time, within five (5) Business Days after the date upon which all the conditions precedent to Closing described in this Agreement have been fulfilled or waived, or at such other place and time as may be mutually agreed to by the

Execution Copy

ASSET PURCHASE AGREEMENT

By and Between

Township of Cheltenham, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of June __, 2018

119682994_9

ARTICLE III.

PURCHASE PRICE

Cheltenham

Section 3.01. Purchase Price

. The purchase price for the Acquired Assets shall be Fifty Million Two Hundred Fifty Thousand Dollars (\$50,250,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for payment in full of the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by Buyer pursuant to clause (ii) below) and/or (ii) subject to the provisions of Section 7.07, assume any of Seller's obligations related to the Outstanding Indebtedness and obtain a release of Seller from all obligations thereunder in such form and terms reasonably acceptable to Seller and/or provide written evidence of such payment in full to Seller in such form reasonably acceptable to Seller, at Buyer's discretion;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (after taking into account the amount paid or assumed by Buyer pursuant to Section 3.01(b)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

(c) Final Billing: The Parties agree that Buyer shall be entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller shall be entitled to all such billings for the period prior to the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

Section 3.02. Fair Consideration

. The Parties acknowledge and agree that the consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Allocation of the Purchase Price

. Buyer and Seller agree that the Purchase Price (which for purposes of this Section 3.03 shall include any liabilities required to be treated as part of the Purchase Price for federal income tax

Execution Version

ASSET PURCHASE AGREEMENT

By and Between

Township of East Norriton, Montgomery County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of October 29, 2018

120008705_7

Aqua-East Norriton Asset Purchase Agreement

Page 3 of 82

ARTICLE III.

PURCHASE PRICE

East Norriton

Section 3.01. Purchase Price. The purchase price for the Acquired Assets shall be Twenty-One Million Dollars (\$21,000,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall (i) provide for payment in full of the total amount of Outstanding Indebtedness (less any amounts of Outstanding Indebtedness actually assumed by Buyer pursuant to clause (ii) below) and/or (ii) subject to the provisions of Section 7.06, assume any of Seller's obligations related to the Outstanding Indebtedness and obtain a release of Seller from all obligations thereunder in such form and terms reasonably acceptable to Seller and/or provide written evidence of such payment in full to Seller in such form reasonably acceptable to Seller, at Buyer's discretion;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (after taking into account the amount paid or assumed by Buyer pursuant to Section 3.01(b)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

(c) **Final Billing:** The Parties agree that Buyer shall be entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller shall be entitled to all such billings for the period prior to the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

Section 3.02. Fair Consideration. The Parties acknowledge and agree that the consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Allocation of the Purchase Price. At Buyer's request and Seller shall agree that the Purchase Price (which for purposes of this Section 3.03 shall include any liabilities required to be treated as part of the Purchase Price for federal income tax purposes), as may be adjusted pursuant to this Section 3.03, shall be allocated among the Acquired Assets in accordance with the allocation reflected in a schedule prepared by Buyer in accordance with this Section 3.03 (the "Allocation Schedule"). Within sixty (60) days following the final determination of the Purchase Price pursuant to Section 3.01, Buyer shall deliver to Seller a draft of the Allocation Schedule setting forth Buyer's proposed allocation for Seller's review. Seller shall have the right to review and reasonably comment upon Buyer's proposed Allocation Schedule, *provided*, that (a) such proposed Allocation Schedule shall be deemed approved by Seller and shall be final and binding upon the Parties unless Seller provides written notice of

- 17 -

120008705_7

Aqua-East Norriton Asset Purchase Agreement

Page 25 of 92

ASSET PURCHASE AGREEMENT
BETWEEN
BOROUGH OF KANE AUTHORITY, TOGETHER WITH
BOROUGH OF KANE AND WETMORE TOWNSHIP
AND
PENNSYLVANIA-AMERICAN WATER COMPANY

November 4, 2019

Purchase Price \$ 17,560,000
APA Pg 3

{L0825790.2}

(b) Following the Closing, PAWC shall assume only those contractual liabilities arising after the Closing Date under the Assigned Contracts (specifically excluding any liability under the Assigned Contracts arising out of or relating to a breach or other circumstances that occurred on or prior to the Closing Date).

1.3 Excluded Assets. Notwithstanding anything to the contrary contained in this Agreement, the Assets shall not include any of the following:

(a) Any and all connecting facilities (customer's sewer laterals) from the Seller's wastewater lines, mains or collection facilities at the curb-line or edge-of-road that are within the customer's property (the "Customer Sewer Laterals");

(b) Any and all piping and fixtures internal to each individual customer's structure (whether residential, commercial, industrial or other types);

(c) Any and all grinder pumps, piping and fixtures located at the curb-line or edge-of-the road that are within the customer's property;

(d) Any and all stormwater system facilities including, but not limited to: (a) facilities located on, in, within, or under the real property, including easements, that is a part of the Assets, (b) facilities that are connected to the System and located within the public right-of-way and (c) facilities or assets used in the operation of a municipal separate stormwater system;

(e) Seller's cash on hand on the date of Closing and Seller's accounts receivable related to the System for services rendered through the close of business on the Closing Date;

(f) All rights of Seller under this Agreement and related Bill of Sale and Assignment of Contracts Agreement as it pertains to the transfer and sale herein contemplated; and

(g) The specific assets, properties and rights of Seller set forth on Schedule 1.3.

1.4 Accounts Receivable. Accounts receivable for wastewater services related to the System rendered through the close of business on the Closing Date shall be excluded assets as per Section 1.3, and accounts receivable for wastewater services related to the System rendered thereafter shall belong to PAWC.

ARTICLE 2 PURCHASE PRICE

2.1 Purchase Price for the Assets. Subject to the terms and conditions of this Agreement, the negotiated purchase price shall be Seventeen Million, Five Hundred Sixty Thousand Dollars (\$17,560,000.00) (the "Purchase Price"). The Purchase Price shall be payable directly to Seller on the Closing Date by wire transfer or by corporate check, at the Seller's discretion.

2.2 Use of Fair Market Valuation Process. Following the execution of this Agreement, PAWC and Seller shall each take such further actions as are necessary to invoke, commence and complete the fair market valuation process set forth in Section 1329 of the Public Utility Code, 66 Pa.C.S. § 1329. Without limiting the generality of the foregoing, PAWC and Seller have each engaged a utility valuation expert from the list of such experts maintained by the Pennsylvania Public Utility Commission ("PUC") and have jointly selected and engaged a licensed engineer for the purposes set forth in Section 1329(a)(4) of the Public Utility Code, 66 Pa.C.S. § 1329(a)(4). All costs and expenses associated with the utility valuation experts shall be the

EXECUTION COPY

ASSET PURCHASE AGREEMENT

By and Between

Royersford Borough, Montgomery County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 10, 2019

4824-5430-5949

permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.15, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets is Thirteen Million Dollars (\$13,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall provide for payment in full of the total amount of Outstanding Indebtedness directly to Seller's obligees on account of the Purchase Price;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (remaining after the debt repayment pursuant to Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(c) **Final Billing:** The Buyer is entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

Execution Version

WATER
ASSET PURCHASE AGREEMENT
By and Between
Valley Township, Chester County
As Seller
and
Pennsylvania-American Water Company
As Buyer

Dated as of December 17, 2019

4826-7132-5345

and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Seven Million Three Hundred Twenty-Five Thousand Dollars (\$7,325,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and to release Liens, to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to drinking water customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

Execution Version

**SANITARY SEWER
ASSET PURCHASE AGREEMENT**

By and Between

Valley Township, Chester County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 17, 2019

4833-0982-2110

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Thirteen Million Nine Hundred Fifty Thousand Dollars (\$13,950,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), to Seller by wire transfer of immediately available funds the Purchase Price (remaining after the payments required in Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

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4833-0982-2110

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Among

The Delaware County Regional Water Quality Control Authority,

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of September 17, 2019

4836-0962-5504

(c) If, following the Effective Date and prior to the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) If, during the twelve (12) month period following the Closing Date, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

ESCROW; PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. **Escrow Amount.**

At Closing, Five Million Dollars (\$5,000,000) of the Purchase Price shall be deposited in escrow (the "Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of Exhibit B, by and among the Seller, the Buyer, and the Escrow Agent (the "Escrow Agreement") to provide for Seller's post-Closing obligations pursuant to Article VI. The Escrow Fund shall be released in accordance with the Escrow Agreement. After the Closing Date and notwithstanding any other provision of this Agreement, the Escrow Fund is Buyer's sole recourse with respect to providing for Seller's post-Closing obligations pursuant to Article VI.

Section 3.02. **Purchase Price and Additional Consideration**

The purchase price for the Acquired Assets shall be Two Hundred Seventy-Six Million Five Hundred Thousand Dollars (\$276,500,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall pay in full, fully fund or defease the total amount of Outstanding Indebtedness.

(b) Subject to any adjustment in Purchase Price resulting from the proration procedures set forth in Section 3.02(c) and after making the payments required in Sections 3.01 and 3.02(a), Buyer shall pay to the Seller by wire transfer of immediately available funds the balance of the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days prior to the Closing Date.

Execution Version

**SANITARY SEWER
ASSET PURCHASE AGREEMENT**

By and Between

Upper Pottsgrove Township, Montgomery County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of April 28, 2020

effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Thirteen Million Seven Hundred Fifty Thousand Dollars (\$13,750,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), to Seller by wire transfer of immediately available funds the Purchase Price less (i) debt repayments, if any, required to release any Liens on Acquired Assets, (ii) the deposit as provided in Section 3.01(c), and (iii) Seller's share of Transfer Taxes payable upon recording of real estate, if any, as provided in Section 3.03, to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

(c) The Buyer shall pay a deposit of Ninety Thousand Dollars (\$90,000) within ten (10) days of the Effective Date to the Seller to be used for Seller's incurred engineering and legal fees related to this transaction. At the successful closing of the transaction, the deposit will be deducted from the Purchase Price at settlement. In the event that the transaction does not successfully close, the amount of the deposit that has not been spent on engineering and legal fees will be refunded to the Buyer. The amount of such refund will be calculated as of the date of a termination under Section 14.01 based on the Seller's expenditures and accrued expenses as of such date of termination. Any engineering and legal fees incurred by the Seller related to this transaction that exceed the \$90,000 deposit shall be the sole responsibility of the Seller.

Section 3.02. Fair Consideration.

The consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Transfer Taxes.

Execution Version

ASSET PURCHASE AGREEMENT

By and Between

The Township of Lower Makefield, Bucks County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of September 17, 2020

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the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for the Seller, pay, perform and discharge the liabilities and obligations of the Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, the Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by the Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which the Seller is a party which is not identified on Schedule 4.14 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to the Seller and the Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.14 identifying such contract, and such contract will thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) If, during the twelve (12) month period following the Closing Date, Buyer identifies any contract to which the Seller was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.14 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, the Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract will be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL CONSIDERATION

Section 3.01. Purchase Price and Additional Consideration

The purchase price for the Acquired Assets is Fifty Three Million Dollars (\$53,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay Three Million Dollars (\$3,000,000) to Seller as a deposit on account of the Purchase Price (the "Deposit") upon the earlier to occur of: (1) the third business day following Buyer's receipt of notice from the PaPUC that the application to the PaPUC for the transaction contemplated by this Agreement has been conditionally accepted; and (2) December 15, 2020. The Deposit shall be governed as follows:

(i) Subject to subparagraph (ii) below, Seller shall be free to use the Deposit upon receipt as it determines in Seller's sole discretion.

**SANITARY SEWER
ASSET PURCHASE AGREEMENT**

By and Between

Township of East Whiteland, Chester County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of January 8, 2021

the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer or Seller identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Fifty Four Million Nine Hundred Thirty Thousand Dollars (\$54,930,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and any amounts required to be deposited into the escrow fund pursuant to Section 6.05(e), to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is

EXECUTION VERSION

**SANITARY SEWER
ASSET PURCHASE AGREEMENT**

By and Between

Township of Willistown, Chester County

As Seller

and

Aqua Pennsylvania Wastewater, Inc.

As Buyer

Dated as of January 20, 2021

Appendix A-5.1 (WAD)

and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer or Seller identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Seventeen Million Five Hundred Thousand Dollars (\$17,500,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), and any amounts required to be deposited into the escrow fund pursuant to Section 6.05(e), to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers' services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent

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ASSET PURCHASE AGREEMENT

By and Among

York City Sewer Authority
As Seller

The City of York

and

Pennsylvania-American Water Company
As Buyer

Dated as of April 6, 2021

Appendix A-5.1 (WAD)

respect thereto, and so long as Seller or the City transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under applicable Law and the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for Seller or the City, pay, perform and discharge the Liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or prior to the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under applicable Law, Seller or the City shall, at Seller's or the City's expense, hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and prior to the Closing, Buyer identifies any contract to which Seller or the City is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to Seller or the City and Seller or the City shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller or the City was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, Seller or the City shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01 Purchase Price; Agreement Proposal Security.

(a) **Purchase Price for the Assets; Adjustment for City Deposit.** Subject to the terms and conditions of this Agreement, the purchase price ("**Purchase Price**") for the Acquired Assets shall be (i) \$235,000,000, *plus* (ii) the Average Daily AR Payment. The Purchase Price shall be delivered as follows:

(i) Within 60 days of the Effective Date, Buyer shall deposit Twenty Million Dollars (\$20,000,000) of the Purchase Price, payable to the City in immediately available funds ("**City Deposit**"), subject to Sections 4.03, 6.06, 9.05 and 13.02 and secured by the City with a tax and revenue anticipation note (the "**Deposit Note**") substantially in the form attached hereto as Exhibit A; and

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Valuation Summary

**WAD Consultants
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Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net**

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility	Weight	Wtd Valuation Indications
Cost Approach			
Inventory of Assets			
Original Cost (\$OC)	9,942,191		
Depreciated Original Cost (\$OCLD)	7,260,988		
Replacement Cost			
Replacement Cost New (COR)	58,151,497		
Depreciated Replacement Cost New (CORLD) \$	24,334,695		
Cost Approach Conclusion	24,334,695	50%	12,167,348
Income Approach			
Required Rate Increases: 22% period 3, 17% period 6, 12% period 9 and 6% every 3rd year beginning in period 12 (Input 6)			
	21,280,929		
Income Approach Conclusion	21,280,929	40%	8,512,372
Market Approach			
Market Comparables (to)			
OCLD	13,602,009		
CORLD	19,655,133		
Customers	25,897,860		
Cash Flows (EBITDA)	27,849,734		
Market Financials (to)			
OCLD	14,086,317		
Market Approach Conclusion	20,418,286	10%	2,041,829
Appraisal Conclusion	\$ 22,721,549	100%	22,721,549
Conclusion (cost approach)	\$ 24,334,695		

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Cost Approach

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Appendix A-5.1 (WAD)

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**Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023**

	Column Reference in OCLD & RCNLD	Amount in \$s	
Depreciated Replacement Cost (RCNLD)			
Original Cost (OC)	(9)	9,942,191	
Replacement Cost New (RCN)	(16)	58,151,497	
Replacement Cost New less Depreciation (RCNLD)	(31)	24,334,695	19,364,443.00 Purchase Price Economic
Fair Market Vaue (FMV)	(41)	24,334,695	0 Obsolescence 1.00000000 Condition
Depreciated Original Cost (OCLD)			
Original Cost (OC)	(46)	9,942,191	
Original Cost less Depreciation (OCLD)	(57)	7,260,988	
Cost Approach Conclusion		24,334,695	

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

Appraisal Work Papers

As of January 1, 2023

**Cost Approach
Replacement Cost New**

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)

Input	Input	Input	OC \$\$	Input	Calculation	RCN \$\$	COR \$\$ / RCN \$\$	COR \$\$
Eng Assmnt NARUC Code	AUS Input NARUC Code	Asset Description	Input	Input	Calculation	Calculation	Input	Calculation

Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023

Eng Assmnt NARUC Code	AUS Input NARUC Code	Asset Description	Eng Assmnt	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15)
Code	Code	Asset Description	Original Cost	Table	Translator	RCN	Factor	COR
353.05	353.05	Land & Land Rights - Easements	36	USBLS6	1,130.32	40,692	1.00	40,680
361.20	361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	HWW-135	4.52	193,952	1.00	193,952
361.30	361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	HWW-138	1.57	5,206,042	1.00	5,206,042
361.10	361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	HWW-136	5.04	6,638,454	1.00	6,638,454
361.11	361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	HWW-136	34.75	6,171,412	1.00	6,171,412
361.12	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	HWW-136	35.58	20,676,276	1.00	20,676,276
361.70	361.70	Collection Sewers - Gravity - Manholes	1,485,458	HWW-145	3.74	5,558,870	1.00	5,558,870
361.22	361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	HWW-138	1.36	3,450,059	1.00	3,450,059
363.00	363.00	Service Laterals	483,827	HWW-139	21.11	10,215,752	1.00	10,215,752
		Total Borough of Brentwood Wastewater Utility	9,942,191			58,151,509		58,151,497
Grand Total	Grand Total	Grand Total Difference	9,942,191		5.85	58,151,509	1.00	58,151,497

Cost Approach for Report

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.05	Land & Land Rights - Easements	USBLS	PPI	6.00	USBLS6	1.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	HW	W-1	35.00	HWW-135	1.00
361.30	Collection Sewers - Gravity - Mains - PVC	HW	W-1	38.00	HWW-138	1.00
361.10	Collection Sewers - Gravity - Mains - VCP	HW	W-1	36.00	HWW-136	1.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	HW	W-1	36.00	HWW-136	1.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	HW	W-1	36.00	HWW-136	1.00
361.70	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
361.22	Collection Sewers - Gravity - Mains Relining	HW	W-1	38.00	HWW-138	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00

Appendix A-5.1 (WAD)

	Engineer	Legal	Fees	
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	60.48	112		
Total Cost	544.32	336	250	1130.32

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

**Cost Approach
Replacement Cost New less Depreciation**

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 1, 2023 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion lowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
Input	Input	years	COR \$	Input	years	years	years	% of COR	CORLD \$
Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023		Col (16)	AUS Input	AUS Input	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	
Account	Description	Age	RCN	lowa	NL	Rem Life	Total Life	Condition	CORLD
353.05	Land & Land Rights - Easements	20.11	40,680	ZNonDep	-	-	-	-	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	37.29	193,952	R2.5	80.00	47.48	84.77	80.00	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	17.39	5,206,042	R2.5	80.00	64.07	81.46	80.00	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	48.60	6,638,454	R2.5	80.00	39.39	87.99	80.00	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	97.22	6,171,412	R2.5	150.00	67.28	164.49	150.00	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	92.44	20,676,276	R2.5	130.00	52.78	145.22	130.00	7,515,724
361.70	Collection Sewers - Gravity - Manholes	60.70	5,558,870	S2.0	75.00	31.87	92.56	75.00	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	8.91	3,450,059	R2.5	60.00	51.66	60.57	60.00	2,944,641
363.00	Service Laterals	87.43	10,215,752	R3.0	50.00	8.83	96.26	50.00	1,794,264
	Total Borough of Brentwood Wastewater Utility		58,151,497						24,334,695
Grand Total	Grand Total	72.12	58,151,497		98.22	43.96	116.07	0.42	24,334,695

Cost Approach for Report

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(4b)	(5)	(6)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life years	Economic Obsolescence % of CORLD	Tax Depreciation Table	Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00%	Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00%	MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00%	MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00%	MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00%	MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00%	MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00%	MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00%	MACRS	25.00

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

**WAD Consultants
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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value

(36) (37) (39) (40) (41)

Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
		CORLD \$s	% of Preliminary Cost Approach	Appraisal Date Value \$s
Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Col (31)	AUS Economic Obsolescence Analysis	(39) * [1.00-Col(40)]
Account	Description	Prelim CORLD	EO%	FMV
353.05	Land & Land Rights - Easements	40,680	0.00%	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	109,069	0.00%	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	4,097,615	0.00%	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	3,041,305	0.00%	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	2,524,727	0.00%	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	7,515,724	0.00%	7,515,724
361.70	Collection Sewers - Gravity - Manholes	2,266,670	0.00%	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	2,944,641	0.00%	2,944,641
363.00	Service Laterals	1,794,264	0.00%	1,794,264
	Total Borough of Brentwood Wastewater Utility	24,334,695		24,334,695
Grand Total	Grand Total	24,334,695	0.00%	24,334,695

Cost Approach for Report

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

Appraisal Work Papers
As of January 1, 2023

Original Cost less Depreciation

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion lowa-type	Normal Service Life (NSL)	Age at January 1, 2023 Appraisal Date	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost
Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	Normal Life	Normal Life	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	lowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.05	Land & Land Rights - Easements	36	ZNonDep		20.61					36
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	R2.5	80.00	33.74	50.24	83.98	0.40	17,175	25,692
361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	R2.5	80.00	16.53	64.82	81.35	0.20	671,928	2,639,944
361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	R2.5	80.00	37.37	47.38	84.75	0.44	574,400	743,354
361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	R2.5	150.00	97.35	67.19	164.54	0.59	105,063	72,540
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	R2.5	130.00	92.42	52.80	145.22	0.64	369,836	211,325
361.70	Collection Sewers - Gravity - Manholes	1,485,458	S2.0	75.00	19.69	57.86	77.56	0.23	345,233	1,140,225
361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	R2.5	60.00	8.50	52.03	60.53	0.14	355,572	2,186,041
363.00	Service Laterals	483,827	R3.0	50.00	42.90	25.34	68.24	0.50	241,996	241,831
	Total Borough of Brentwood Wastewater Utility	9,942,191							2,681,203	7,260,988
Grand Total		9,942,191		76.85	24.95	55.55	80.50	0.27	2,681,203	7,260,988

Cost Approach for Report

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(5)	(6)	(6b)	
Account Number	Description	(4a) Iowa Survivor / Retirement Curve	(4b) Normal Service Life years	(5) Economic Obsolescence % of CORLD	(6) (6a) Tax Depreciation Table	(6b) Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00%	Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00%	MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00%	MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00%	MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00%	MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00%	MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00%	MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00%	MACRS	25.00

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Income Approach

**WAD Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail:**

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Teport & Testimony 2023\Scanned 2023 report\Brentwood Wastewater System Valuation

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis**

Discount Rate:														
Capitalization Rate:														
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows	
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)	
1	0.5	3,926,000	2,630,473	786,073	1,295,527	509,454	147,181	434,978	-	713,368	0.962	686,260	686,260	
2	1.5	4,789,720	2,709,387	799,077	2,080,333	1,281,256	370,155	438,245	46,641	1,225,292	0.891	1,091,735	1,777,995	
3	2.5	4,789,720	2,790,668	812,313	1,999,052	1,186,739	342,849	441,531	-	1,214,672	0.825	1,003,319	2,781,314	
4	3.5	4,789,720	2,874,388	825,783	1,915,332	1,089,549	314,771	444,844	-	1,155,717	0.765	884,124	3,665,438	
5	4.5	4,789,720	2,960,619	839,491	1,829,101	989,610	285,898	448,180	-	1,095,023	0.708	775,276	4,440,714	
6	5.5	5,603,972	3,049,438	853,438	2,554,534	1,701,096	491,447	451,542	43,969	1,567,576	0.656	1,028,330	5,469,044	
7	6.5	5,603,972	3,140,921	855,138	2,463,051	1,607,913	464,526	408,993	-	1,589,532	0.607	964,846	6,433,890	
8	7.5	5,603,972	3,235,148	868,079	2,368,824	1,500,745	433,565	412,060	-	1,523,199	0.563	857,561	7,291,451	
9	8.5	6,276,449	3,332,202	881,242	2,944,247	2,063,005	596,002	415,151	36,315	1,896,779	0.521	988,222	8,279,673	
10	9.5	6,276,449	3,432,168	894,632	2,844,281	1,949,649	563,254	418,264	-	1,862,763	0.483	899,715	9,179,388	
11	10.5	6,276,449	3,535,133	908,250	2,741,316	1,833,066	529,573	421,402	-	1,790,341	0.447	800,282	9,979,670	
12	11.5	6,653,036	3,641,187	922,100	3,011,849	2,089,749	603,729	424,563	20,335	1,963,222	0.414	812,774	10,792,444	
13	12.5	6,653,036	3,750,422	936,183	2,902,614	1,966,431	568,102	427,747	-	1,906,765	0.383	730,291	11,522,735	
14	13.5	6,653,036	3,862,934	950,502	2,790,102	1,839,600	531,460	430,955	-	1,827,687	0.355	648,829	12,171,564	
15	14.5	7,052,218	3,978,822	965,062	3,073,396	2,108,334	609,098	434,188	21,556	2,008,554	0.329	660,814	12,832,378	
16	15.5	7,052,218	4,018,610	979,862	3,033,608	2,053,746	593,327	437,444	-	2,002,837	0.305	610,865	13,443,243	
17	16.5	7,052,218	4,058,796	994,908	2,993,422	1,998,514	577,371	440,725	-	1,975,326	0.282	557,042	14,000,285	
18	17.5	7,475,351	4,099,384	1,010,200	3,375,967	2,365,767	683,470	444,029	22,849	2,225,619	0.261	580,887	14,581,172	
19	18.5	7,475,351	4,140,377	1,025,744	3,334,974	2,309,230	667,136	447,360	-	2,220,478	0.242	537,356	15,118,528	
20 and beyond	19.5	7,475,351	4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	2.811	6,162,401	21,280,929	
								8,672,915						
Age				19.5										
PW(Age) = 1/(1+Discount Rate) ^(Age)				0.224				Net Plant		17,826,926				
PW to Perpetuity = 1/Capitalization Rate				12.547				ADIT		(2,293,978)				
PW _(20and Beyond) = PW to Perpetuity * PW Factor _(19.5)				2.811				Rate Base		15,532,948	0.224	3,479,380	18,597,908	
								Annual Plant Construction						
								Inflation Rate		0.0422	Input			
								Plant Inflation over 19.5 years		35,503,834	0.224	7,952,859	23,071,387	
								PP	19,364,443					
								OCLD	7,260,988					
								PP/OCLD	2,667					
								RCNLD	24,334,695					
								RCNLD/PP	1.256668989					
										19,519,773.60	0.224	4,372,429	19,490,957	
								Average					20,610,295	

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Rate-making Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) * 28.89%	(7)-(8)-(6)	(9) - (6)				(11)-(12)-(13)	(9)/(14)		(10)/(16)
1	0.5	3,926,000	2,630,473	568,359	741,336	(14,168)	(4,093)	731,261	(10,075)	19,231,062	212,004	(62,898)	19,380,168	3.77%	32,382,905	-0.03%
2	1.5	4,789,720	2,709,387	554,483	719,756	806,094	232,880	1,292,970	573,214	19,114,823	258,645	(133,561)	19,239,907	6.72%	32,956,118	1.74%
3	2.5	4,789,720	2,790,668	543,803	699,656	755,593	218,291	1,236,958	537,302	19,012,551	258,645	(211,134)	19,060,062	6.49%	33,493,420	1.60%
4	3.5	4,789,720	2,874,388	533,822	676,334	705,176	203,725	1,177,785	501,451	18,923,573	258,645	(295,481)	18,886,737	6.24%	33,994,871	1.48%
5	4.5	4,789,720	2,960,619	525,838	653,790	649,473	187,633	1,115,630	461,840	18,845,916	258,645	(386,096)	18,718,465	5.96%	34,456,712	1.34%
6	5.5	5,603,972	3,049,438	519,798	631,997	1,402,739	405,251	1,629,485	997,488	18,777,660	302,614	(482,484)	18,597,790	8.76%	35,454,200	2.81%
7	6.5	5,603,972	3,140,921	514,722	610,930	1,317,399	386,375	1,561,954	951,024	18,671,850	302,614	(580,831)	18,393,633	8.49%	36,405,224	2.61%
8	7.5	5,603,972	3,235,148	510,075	590,566	1,268,183	366,378	1,492,371	901,805	18,573,753	302,614	(684,258)	18,192,109	8.20%	37,307,029	2.42%
9	8.5	6,276,449	3,332,202	507,914	570,880	1,865,453	538,929	1,897,404	1,326,524	18,480,908	338,929	(792,112)	18,027,725	10.52%	38,633,553	3.43%
10	9.5	6,276,449	3,432,168	503,366	551,851	1,789,064	516,861	1,824,054	1,272,203	18,395,723	338,929	(905,149)	17,829,503	10.23%	39,905,756	3.19%
11	10.5	6,276,449	3,535,133	500,436	533,456	1,707,424	493,275	1,747,605	1,214,149	18,316,606	338,929	(1,022,967)	17,632,568	9.91%	41,119,905	2.95%
12	11.5	6,653,036	3,641,187	497,985	515,674	1,998,190	577,277	1,936,587	1,420,913	18,243,100	359,264	(1,145,494)	17,456,870	11.09%	42,540,818	3.34%
13	12.5	6,653,036	3,750,422	495,071	498,485	1,909,058	551,527	1,856,016	1,357,531	18,175,691	359,264	(1,272,931)	17,262,024	10.75%	43,898,349	3.09%
14	13.5	6,653,036	3,862,934	493,138	481,869	1,815,095	524,381	1,772,583	1,290,714	18,113,422	359,264	(1,405,064)	17,067,622	10.39%	45,189,062	2.86%
15	14.5	7,052,218	3,978,822	491,669	465,806	2,115,921	611,289	1,970,438	1,504,632	18,055,855	380,820	(1,541,827)	16,894,848	11.66%	46,693,694	3.22%
16	15.5	7,052,218	4,018,610	490,844	450,280	2,092,484	604,519	1,938,245	1,487,965	18,002,368	380,820	(1,683,105)	16,700,083	11.61%	48,181,659	3.09%
17	16.5	7,052,218	4,058,796	490,200	435,270	2,067,952	597,431	1,905,791	1,470,521	17,952,805	380,820	(1,828,915)	16,504,710	11.55%	49,652,179	2.96%
18	17.5	7,475,351	4,099,384	489,746	420,761	2,465,460	712,271	2,173,950	1,753,189	17,907,000	403,669	(1,979,274)	16,331,395	13.31%	51,405,368	3.41%
19	18.5	7,475,351	4,140,377	488,544	406,736	2,439,694	704,828	2,141,602	1,734,866	17,865,727	403,669	(2,134,472)	16,134,924	13.27%	53,140,234	3.26%
20	19.5	7,475,351	4,181,781	489,427	393,178	2,410,965	696,528	2,107,615	1,714,437	17,826,926	403,669	(2,293,978)	15,936,617	13.22%	54,854,672	3.13%
										3,993,231.34						

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Report & Testimony 2023\Scanned 2023 report\Brentwood Wastewater System Valuation

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis**

Discount Rate: **7.97%**
Capitalization Rate: **4.88%**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows	
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)	(11)*(12)	(11)*(12)	Sum (13)	
20	19.5	7,475,351	-4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	0.224	491,063	15,609,591	
21	20.5	7,923,872	-4,223,599	1,057,593	3,700,273	2,642,680	763,470	454,094	24,220	2,458,489	0.208	511,366	16,120,957	
22	21.5	7,923,872	-4,265,835	1,073,906	3,658,037	2,584,131	746,555	457,501	-	2,453,981	0.192	471,164	16,592,121	
23	22.5	7,923,872	-4,308,493	1,090,480	3,615,379	2,524,899	729,443	460,932	-	2,425,004	0.178	431,651	17,023,772	
24	23.5	8,399,304	-4,351,578	1,107,321	4,047,726	2,940,405	849,483	464,391	25,673	2,708,179	0.165	446,850	17,470,622	
25	24.5	8,399,304	-4,395,094	1,124,428	4,004,210	2,879,782	831,969	467,872	-	2,704,369	0.153	413,768	17,884,390	
26	25.5	8,399,304	-4,439,045	471,007	3,960,259	3,489,252	1,008,045	471,380	-	2,480,834	0.142	352,278	18,236,668	
27	26.5	8,903,262	-4,483,436	474,541	4,419,826	3,945,285	1,139,793	474,917	27,214	2,777,902	0.131	363,905	18,600,573	
28	27.5	8,903,262	-4,528,271	478,099	4,374,991	3,896,892	1,125,812	478,478	-	2,770,701	0.121	335,255	18,935,828	
29	28.5	8,903,262	-4,573,554	481,685	4,329,708	3,848,023	1,111,694	482,067	-	2,735,947	0.112	306,426	19,242,254	
30	29.5	8,903,262	-4,619,290	485,297	4,283,972	3,798,675	1,097,437	485,681	-	2,700,854	0.104	280,889	19,523,143	
31	30.5	8,903,262	-4,665,483	488,937	4,237,779	3,748,842	1,083,040	489,324	-	2,665,415	0.096	255,880	19,779,023	
32	31.5	8,903,262	-4,712,138	492,604	4,191,124	3,698,520	1,068,502	492,994	-	2,629,628	0.089	234,037	20,013,060	
33	32.5	8,903,262	-4,759,259	496,300	4,144,003	3,647,703	1,053,821	496,693	-	2,593,489	0.083	215,260	20,228,320	
34	33.5	8,903,262	-4,806,852	500,022	4,096,410	3,596,388	1,038,996	500,418	-	2,556,996	0.077	196,889	20,425,209	
35	34.5	8,903,262	-4,854,921	503,772	4,048,341	3,544,569	1,024,026	504,171	-	2,520,144	0.071	178,930	20,604,139	
36	35.5	8,903,262	-4,903,470	507,549	3,999,792	3,492,243	1,008,909	507,951	-	2,482,932	0.066	163,874	20,768,013	
37	36.5	8,903,262	-4,952,504	511,357	3,950,758	3,439,401	993,643	511,762	-	2,445,353	0.061	149,167	20,917,180	
38	37.5	8,903,262	-5,002,030	515,192	3,901,232	3,386,040	978,227	515,600	-	2,407,405	0.056	134,815	21,051,995	
39	38.5	8,903,262	-5,052,050	519,054	3,851,212	3,332,158	962,660	519,465	-	2,369,087	0.052	123,193	21,175,188	
40	39.5	8,903,262	-5,102,570	522,949	3,800,692	3,277,743	946,940	523,363	-	2,330,389	0.048	111,859	21,287,047	
41	40.5	8,903,262	-5,153,596	526,871	3,749,666	3,222,795	931,065	527,288	-	2,291,313	0.045	103,109	21,390,156	
42	41.5	8,903,262	-5,205,132	530,823	3,698,130	3,167,307	915,035	531,243	-	2,251,852	0.041	92,326	21,482,482	
43	42.5	8,903,262	-5,257,183	536,194	3,646,079	3,089,885	892,668	535,226	-	2,218,185	0.038	84,291	21,566,773	
44	43.5	8,903,262	-5,309,755	541,920	3,593,507	3,011,587	870,047	539,242	-	2,184,218	0.036	78,632	21,645,405	
45	44.5	8,903,262	-5,362,853	548,283	3,540,409	2,954,126	853,447	543,285	-	2,143,677	0.033	70,741	21,716,146	
46	45.5	8,903,262	-5,416,482	549,681	3,486,780	2,896,099	836,683	547,360	-	2,102,737	0.031	65,185	21,781,331	
47	46.5	8,903,262	-5,470,647	549,111	3,432,615	2,837,504	819,755	551,465	-	2,061,395	0.028	57,719	21,839,050	
48	47.5	8,903,262	-5,525,354	549,574	3,377,908	2,778,334	802,661	555,601	-	2,019,646	0.026	52,511	21,891,561	
49	48.5	8,903,262	-5,580,608	549,070	3,322,654	2,718,584	785,399	559,767	-	1,977,488	0.024	47,460	21,939,021	
50	49.5	8,903,262	-5,636,414	548,593	3,266,848	2,658,245	767,967	563,967	-	1,934,914	0.022	42,568	21,981,589	
51	50.5	8,903,262	-5,692,778	548,146	3,210,484	2,597,318	750,365	568,196	-	1,891,923	0.021	39,730	22,021,319	
52	51.5	8,903,262	-5,749,705	547,726	3,153,557	2,535,792	732,590	572,458	-	1,848,509	0.019	35,122	22,056,441	
53	52.5	8,903,262	-5,807,202	547,330	3,096,060	2,473,660	714,640	576,752	-	1,804,668	0.018	32,484	22,088,925	
54	53.5	8,903,262	-5,865,274	546,955	3,037,988	2,410,923	696,516	581,076	-	1,760,396	0.017	29,927	22,118,852	
55	54.5	8,903,262	-5,923,927	546,600	2,979,335	2,347,566	678,212	585,434	-	1,715,689	0.015	25,735	22,144,587	
56	55.5	8,903,262	-5,983,166	546,265	2,920,096	2,283,589	659,729	589,825	-	1,670,542	0.014	23,388	22,167,975	
57	56.5	8,903,262	-6,042,998	545,948	2,860,264	2,218,983	641,064	594,249	-	1,624,951	0.013	21,124	22,189,099	
58	57.5	8,903,262	-6,103,428	545,647	2,799,834	2,153,742	622,216	598,707	-	1,578,911	0.012	18,947	22,208,046	
59	58.5	8,903,262	-6,164,462	545,358	2,738,800	2,087,863	603,184	603,196	-	1,532,420	0.011	16,857	22,224,903	
60	59.5	8,903,262	-6,226,107	545,081	2,677,155	2,021,337	583,964	607,720	-	1,485,471	0.010	14,858	22,240,587	
								21,541,825						

Age	59.5
PW(Age) = 1/(1+Discount Rate) ^{Age}	0.010
PW to Perpetuity = 1/Capitalization Rate	12.547
PW _(20and beyond) = PW to Perpetuity * PW Factor _(19.5)	0.125

Net Plant	18,566,361		
ADIT	(3,645,318)		
Rate Base Plant	14,921,043	0.010	149,210
Construction Inflation Rate	0.0422	input	
Plant Inflation over 59.5 years	174,537,108	0.010	1,745,371
PP	19,364,443		
RCNLD	24,334,695		
RCNLD/PP	1.256668989	0.010	187,508
	18,750,811.98		22,412,411

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Teport & Testimony 2023\Scanned 2023 report\Brentwood Wastewater System Valuation

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity	70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r	100.0%						7.97%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							4.88%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	30%	Market	5.34%	Market	Not Applicable	Not Applicable	1.60%
Equity	70%	Market	9.75%	Market	Not Applicable	Not Applicable	6.83%
Total Capital r	100.0%						8.43%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							5.33%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	50%	Embedded	3.76%	Embedded	Not Applicable	Not Applicable	1.88%
Equity	50%	Embedded	9.75%	Market	Not Applicable	Not Applicable	4.88%
Total Capital r	100.0%						6.76%
Growth (g)						Not Applicable	0.00%
Rate without Growth: $[(1+r)/(1+g)]-1$							6.76%

Appendix A-5.1 (WAD)

Water Industry (A) Annual - Itemized Report & Testimony 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019) 2019 (2019)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Strength of Bonded Sewer Fund											
Assets											
Cash and Cash Equivalents	832,262	2,078,714	3,158,832	2,877,519	6,643,993	8,833,711	8,399,537	5,385,626			
Accounts Receivable											
Due from Other Funds											
Due to Other Governments											
Prepaid Rates	422,990	55,799	20,799	44,887	44,887	44,887	44,887	44,887			
Other Receivables											
Total Assets	1,255,252	2,134,513	3,179,631	2,922,406	6,688,890	8,878,600	8,444,424	5,430,513			
Liabilities											
Due to Other Funds	75,713	75,814	139,356	168,252	314,923	4,889					
Other Current Liabilities											
Accounts Payable	341,788	296,642	342,392	497,582	38,462	326,918	199,335	182,410			
Contract Payables	12,811	4,427	9,890	23,249		18,239	11,024	18,879			
Unearned Revenue	8,763	18,700				42,133	28,450	38,853			
Total Liabilities	459,081	493,397	521,638	689,183	353,395	388,239	246,612	240,172			
Net Assets	796,171	1,641,116	1,657,993	1,233,223	6,335,495	8,490,361	8,197,812	5,190,341			
Reserve for Contingencies											
Reserve for Depreciation											
Reserve for Other Purposes											
Total Reserves	0	0	0	0	0	0	0	0			
Net Assets (Total)	796,171	1,641,116	1,657,993	1,233,223	6,335,495	8,490,361	8,197,812	5,190,341			
Income Statement											
Operating Revenue	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357			
Operating Expenses	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357			
Net Operating Income	0	0	0	0	0	0	0	0			
Other Income											
Other Expenses											
Total Income	0	0	0	0	0	0	0	0			
Capital Budget											
Capital Expenditures	1,200,000	1,500,000	1,800,000	2,100,000	2,400,000	2,700,000	3,000,000	3,300,000			
Depreciation	1,200,000	1,500,000	1,800,000	2,100,000	2,400,000	2,700,000	3,000,000	3,300,000			
Net Capital Expenditures	0	0	0	0	0	0	0	0			
Debt Service											
Debt Issuance	0	0	0	0	0	0	0	0			
Debt Retirement	0	0	0	0	0	0	0	0			
Net Debt Service	0	0	0	0	0	0	0	0			
Total Cash Flow	0	0	0	0	0	0	0	0			

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Allocated Capital												
Current Capital												
Current Capital	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%	28.2%

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Revenue	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Operating Expenses	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Net Operating Income	0	0	0	0	0	0	0	0				
Other Income												
Other Expenses												
Total Income	0	0	0	0	0	0	0	0				

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Revenue	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Operating Expenses	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Net Operating Income	0	0	0	0	0	0	0	0				
Other Income												
Other Expenses												
Total Income	0	0	0	0	0	0	0	0				

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Operating Revenue	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Operating Expenses	1,832,383	2,144,819	2,227,973	2,187,577	2,498,421	2,832,331	2,890,895	3,182,357				
Net Operating Income	0	0	0	0	0	0	0	0				
Other Income												
Other Expenses												
Total Income	0	0	0	0	0	0	0	0				

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Market Approach

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Appendix A-5.1 (WAD)

Brentwood Wastewater System Valuation

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Comparable Sales Approach

Ratios See Market Tab Rows 39:45

Central Tendency and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted
All Acquisitions	1.7632	1.8333
Wastewater Collection and Treatment	1.7972	1.8248
Wastewater Collection	1.8733	2.0712
Water Treatment and Distribution	1.4354	1.5060
Water Distribution	1.3500	1.3500
Conclusion		1.8733 AUS Input

Market Sales Analysis - PP/CORLD

	Simple	Weighted
All Acquisitions	0.8171	0.8747
Wastewater Collection and Treatment	0.8536	0.8803
Wastewater Collection	0.8077	0.8582
Water Treatment and Distribution	0.7686	0.8381
Water Distribution	0.5320	0.5320
Conclusion		0.8077 AUS Input

Borough of Brentwood OCLD

Cost Approach - OCLD

7,260,988

Borough of Brentwood CORLD

Cost Approach - CORLD

24,334,695

Market Value Indication

13,602,009

Market Value Indication

19,655,133

Market Sales Analysis - PP/Customer

	Simple	Weighted
All Acquisitions	8563	9890
Wastewater Collection and Treatment	10200	11062
Wastewater Collection	6507	5387
Water Treatment and Distribution	7188	7882
Water Distribution	3992	3992

Financial Basis¹

	Market Value per Share to Book Value per Share
Financial Markets	
Market to Book (equity)	3.21
Market to Book (equity and debt)	1.94
Use (equity and debt)	1.94 AUS Input

Conclusion

Valley Wastewater Info
6,507

Borough of Brentwood Customers

3,980 AUS Input

Borough of Brentwood OCLD

7,260,988

Cost Approach - OCLD

Market Value Indication

25,897,860

Market Value Indication

14,086,317

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	16.51	12.67
Wastewater Collection	18.71	13.77
Water Treatment and Distribution	14.13	11.14
Water Distribution	20.24	20.24
Conclusion		18.71 AUS Input

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	11.45	10.17
Wastewater Collection	12.89	12.07
Water Treatment and Distribution	7.37	6.33
Water Distribution	13.59	13.59
Conclusion		12.89 AUS Input

Borough of Brentwood Cash Flows

1,488,495

Income Approach

Borough of Brentwood Cash Flows

1,661,649

Income Approach

Market Value Indication

27,849,734

21,418,662

Summary of Market Analyses

Indicators

OCLD	13,602,009
CORLD	19,655,133
Customers	25,897,860
Cash Flows	
EBITDA Periods 1-5	27,849,734
EBITDA Periods 1-13	21,418,662
Value Line	14,086,317

Mean 20,418,286

Median 20,536,898

Conclusion 20,418,286

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Cost Approach

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Appendix A-5.1 (WAD)

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**Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023**

	Column Reference in OCLD & RCNLD	Amount in \$s	
Depreciated Replacement Cost (RCNLD)			
Original Cost (OC)	(9)	9,942,191	
Replacement Cost New (RCN)	(16)	58,151,497	
Replacement Cost New less Depreciation (RCNLD)	(31)	24,334,695	19,364,443.00 Purchase Price Economic
Fair Market Vaue (FMV)	(41)	24,334,695	0 Obsolescence
			1.00000000 Condition
Depreciated Original Cost (OCLD)			
Original Cost (OC)	(46)	9,942,191	
Original Cost less Depreciation (OCLD)	(57)	7,260,988	
Cost Approach Conclusion		24,334,695	

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

**Cost Approach
Replacement Cost New**

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Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Replacement Cost New (RCN)

(1)	(2)	(3)	(9)	(10)	(13)	(14)	(15)	(16)
Account	Account	Asset Description	Original Cost	Costing Parameter	Cost Translator	Reproduction Cost New (RCN)	Reproduction Cost New (RCN) to Replacement Cost New (COR)	Replacement Cost New (COR)
Input	Input	Input	OC \$\$	Input	Calculation	RCN \$\$	COR \$\$ / RCN \$\$	COR \$\$
Eng Assmnt NARUC Code	AUS Input NARUC Code	Asset Description	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	AUS Input NARUC Code	Asset Description	Eng Assmnt Original Cost	AUS Input Cost Index Table	Translator	RCN	AUS Input COR / RCN Factor	Col (14) * (15) COR
353.05	353.05	Land & Land Rights - Easements	36	USBLS6	1,130.32	40,692	1.00	40,680
361.20	361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	HHW-135	4.52	193,952	1.00	193,952
361.30	361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	HHW-138	1.57	5,206,042	1.00	5,206,042
361.10	361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	HHW-136	5.04	6,638,454	1.00	6,638,454
361.11	361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	HHW-136	34.75	6,171,412	1.00	6,171,412
361.12	361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	HHW-136	35.58	20,676,276	1.00	20,676,276
361.70	361.70	Collection Sewers - Gravity - Manholes	1,485,458	HHW-145	3.74	5,558,870	1.00	5,558,870
361.22	361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	HHW-138	1.36	3,450,059	1.00	3,450,059
363.00	363.00	Service Laterals	483,827	HHW-139	21.11	10,215,752	1.00	10,215,752
		Total Borough of Brentwood Wastewater Utility	9,942,191			58,151,509		58,151,497
Grand Total	Grand Total	Grand Total	9,942,191		5.85	58,151,509	1.00	58,151,497
Total	Total	Difference						

Cost Approach for Report

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.05	Land & Land Rights - Easements	USBLS	PPI	6.00	USBLS6	1.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	HW	W-1	35.00	HWW-135	1.00
361.30	Collection Sewers - Gravity - Mains - PVC	HW	W-1	38.00	HWW-138	1.00
361.10	Collection Sewers - Gravity - Mains - VCP	HW	W-1	36.00	HWW-136	1.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	HW	W-1	36.00	HWW-136	1.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	HW	W-1	36.00	HWW-136	1.00
361.70	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
361.22	Collection Sewers - Gravity - Mains Relining	HW	W-1	38.00	HWW-138	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00

Appendix A-5.1 (WAD)

	Engineer	Legal	Fees	
Determine the facilities for which a Easment is need	1	0	0	
Locate the Land owner for the property needing a easement	1	1	0	
Develop a diagram o the Property, the facilities, and the easement	2	0	0	
Develop the easement document	1	1	0	
Visit the property owner to obtain permission for the easement and sign the easment documentation	4	0	0	
Register the easement with the Municipal Clerk	0	1	250	
Total	9	3	250	
Labor Costs per Hour	60.48	112		
Total Cost	544.32	336	250	1130.32

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

**Cost Approach
Replacement Cost New less Depreciation**

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at January 1, 2023 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion lowa-type	Normal Service Life (NSL)	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
Input	Input	years	COR \$	Input	years	years	years	% of COR	CORLD \$
Eng Assmnt	Borough of Brentwood Wastewater Asset Detail by Gateway Engineers January 13, 2023	Calculation	Calculation	Input	Input	Calculation	Calculation	Calculation	Calculation
Account	Description	Age	RCN	lowa	NL	Rem Life	Total Life	Condition	CORLD
			Col (16)	AUS Input	AUS Input	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	
353.05	Land & Land Rights - Easements	20.11	40,680	ZNonDep	-	-	-	-	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	37.29	193,952	R2.5	80.00	47.48	84.77	80.00	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	17.39	5,206,042	R2.5	80.00	64.07	81.46	80.00	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	48.60	6,638,454	R2.5	80.00	39.39	87.99	80.00	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	97.22	6,171,412	R2.5	150.00	67.28	164.49	150.00	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	92.44	20,676,276	R2.5	130.00	52.78	145.22	130.00	7,515,724
361.70	Collection Sewers - Gravity - Manholes	60.70	5,558,870	S2.0	75.00	31.87	92.56	75.00	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	8.91	3,450,059	R2.5	60.00	51.66	60.57	60.00	2,944,641
363.00	Service Laterals	87.43	10,215,752	R3.0	50.00	8.83	96.26	50.00	1,794,264
	Total Borough of Brentwood Wastewater Utility		58,151,497						24,334,695
Grand Total	Grand Total	72.12	58,151,497		98.22	43.96	116.07	0.42	24,334,695

Cost Approach for Report

Appendix A-5.1 (WAD)

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(4b)	(5)	(6)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life years	Economic Obsolescence % of CORLD	Tax Depreciation Table	Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00%	Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00%	MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00%	MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00%	MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00%	MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00%	MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00%	MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00%	MACRS	25.00

Brentwood Borough Allegheny County, Pennsylvania
Sanitary Wastewater Collection System

Appraisal Work Papers
As of January 1, 2023

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023

Fair Market Value

(36)	(37)	(39)	(40)	(41)
Account	Description	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
Input	Input	CORLID \$s	% of Preliminary Cost Approach	Appraisal Date Value \$s
Eng Assmnt	Eng Assmnt	Calculation	AUS Economic Obsolescence Analysis	Calculation
Account	Description	Col (31)	(39) * [1.00-Col (40)]	Col (39) * [1.00-Col (40)]
		Prelim CORLID	EO%	FMV
353.05	Land & Land Rights - Easements	40,680	0.00%	40,680
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	109,069	0.00%	109,069
361.30	Collection Sewers - Gravity - Mains - PVC	4,097,615	0.00%	4,097,615
361.10	Collection Sewers - Gravity - Mains - VCP	3,041,305	0.00%	3,041,305
361.11	Collection Sewers - Gravity - Mains - VCP Relined	2,524,727	0.00%	2,524,727
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	7,515,724	0.00%	7,515,724
361.70	Collection Sewers - Gravity - Manholes	2,266,670	0.00%	2,266,670
361.22	Collection Sewers - Gravity - Mains Relining	2,944,641	0.00%	2,944,641
363.00	Service Laterals	1,794,264	0.00%	1,794,264
	Total Borough of Brentwood Wastewater Utility	24,334,695		24,334,695
Grand Total	Grand Total	24,334,695	0.00%	24,334,695

Cost Approach for Report

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Original Cost less Depreciation

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Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 As of January 1, 2023

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion lowa-type	Normal Service Life (NSL)	Age at January 1, 2023 Appraisal Date	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost
Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	Normal Life	Rem Life	Col (48) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) * (56)
Acct	Descrip	Original Cost	lowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.05	Land & Land Rights - Easements	36	ZNonDep	-	20.61	-	-	-	-	36
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	42,867	R2.5	80.00	33.74	50.24	83.98	0.40	17,175	25,692
361.30	Collection Sewers - Gravity - Mains - PVC	3,311,872	R2.5	80.00	16.53	64.82	81.35	0.20	671,928	2,639,944
361.10	Collection Sewers - Gravity - Mains - VCP	1,317,754	R2.5	80.00	37.37	47.38	84.75	0.44	574,400	743,354
361.11	Collection Sewers - Gravity - Mains - VCP Relined	177,603	R2.5	150.00	97.35	67.19	164.54	0.59	105,063	72,540
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	581,161	R2.5	130.00	92.42	52.80	145.22	0.64	369,836	211,325
361.70	Collection Sewers - Gravity - Manholes	1,485,458	S2.0	75.00	19.69	57.86	77.56	0.23	345,233	1,140,225
361.22	Collection Sewers - Gravity - Mains Relining	2,541,613	R2.5	60.00	8.50	52.03	60.53	0.14	355,572	2,186,041
363.00	Service Laterals	483,827	R3.0	50.00	42.90	25.34	68.24	0.50	241,996	241,831
	Total Borough of Brentwood Wastewater Utility	9,942,191							2,681,203	7,260,988
Grand Total	Grand Total	9,942,191		76.85	24.95	55.55	80.50	0.27	2,681,203	7,260,988

Cost Approach for Report

Appendix A-5.1 (WAD)

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**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
January 1, 2023**

Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	(6b)
Account Number	Description	(4a) Iowa Survivor / Retirement Curve	(4b) Normal Service Life	Economic Obsolescence % of CORLD	Tax Depreciation Table	Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00%	Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00%	MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00%	MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00%	MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00%	MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00%	MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00%	MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00%	MACRS	25.00

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Income Approach

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**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis**

Discount Rate:														
Capitalization Rate:														
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows	
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)	
1	0.5	3,926,000	2,630,473	786,073	1,295,527	509,454	147,181	434,978	-	713,368	0.962	686,260	686,260	
2	1.5	4,789,720	2,709,387	799,077	2,080,333	1,281,256	370,155	438,245	46,641	1,225,292	0.891	1,091,735	1,777,995	
3	2.5	4,789,720	2,790,668	812,313	1,999,052	1,186,739	342,849	441,531	-	1,214,672	0.826	1,003,319	2,781,314	
4	3.5	4,789,720	2,874,388	825,783	1,915,332	1,089,549	314,771	444,844	-	1,155,717	0.765	884,124	3,665,438	
5	4.5	4,789,720	2,960,619	839,491	1,829,101	989,610	285,898	448,180	-	1,095,023	0.708	775,276	4,440,714	
6	5.5	5,603,972	3,049,438	853,438	2,554,534	1,701,096	491,447	451,542	43,969	1,567,576	0.656	1,028,330	5,469,044	
7	6.5	5,603,972	3,140,921	855,138	2,463,051	1,607,913	464,526	408,993	-	1,589,532	0.607	964,846	6,433,890	
8	7.5	5,603,972	3,235,148	868,079	2,368,824	1,500,745	433,565	412,060	-	1,523,199	0.563	857,561	7,291,451	
9	8.5	6,276,449	3,332,202	881,242	2,944,247	2,063,005	596,002	415,151	36,315	1,896,779	0.521	988,222	8,279,673	
10	9.5	6,276,449	3,432,168	894,632	2,844,281	1,949,649	563,254	418,264	-	1,862,763	0.483	899,715	9,179,388	
11	10.5	6,276,449	3,535,133	908,250	2,741,316	1,833,066	529,573	421,402	-	1,790,341	0.447	800,282	9,979,670	
12	11.5	6,653,036	3,641,187	922,100	3,011,849	2,089,749	603,729	424,563	20,335	1,963,222	0.414	812,774	10,792,444	
13	12.5	6,653,036	3,750,422	936,183	2,902,614	1,966,431	568,102	427,747	-	1,906,765	0.383	730,291	11,522,735	
14	13.5	6,653,036	3,862,934	950,502	2,790,102	1,839,600	531,460	430,955	-	1,827,687	0.355	648,829	12,171,564	
15	14.5	7,052,218	3,978,822	965,062	3,073,396	2,108,334	609,098	434,188	21,556	2,008,554	0.329	660,814	12,832,378	
16	15.5	7,052,218	4,018,610	979,862	3,033,608	2,053,746	593,327	437,444	-	2,002,837	0.305	610,865	13,443,243	
17	16.5	7,052,218	4,058,796	994,908	2,993,422	1,998,514	577,371	440,725	-	1,975,326	0.282	557,042	14,000,285	
18	17.5	7,475,351	4,099,384	1,010,200	3,375,967	2,365,767	683,470	444,029	22,849	2,225,619	0.261	580,887	14,581,172	
19	18.5	7,475,351	4,140,377	1,025,744	3,334,974	2,309,230	667,136	447,360	-	2,220,478	0.242	537,356	15,118,528	
20 and beyond	19.5	7,475,351	4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	2.811	6,162,401	21,280,929	
								8,672,915						
Age				19.5										
PW(Age) = 1/(1+Discount Rate) ^(Age)				0.224				Net Plant ADIT		17,826,926				
PW to Perpetuity = 1/Capitalization Rate				12.547						(2,293,978)				
PW _(20and Beyond) = PW to Perpetuity * PW Factor _(19.5)				2.811				Rate Base		15,532,948	0.224	3,479,380	18,597,908	
								Annual Plant Construction						
								Inflation Rate		0.0422	input			
								Plant Inflation over 19.5 years		35,503,834	0.224	7,952,859	23,071,387	
								PP	19,364,443					
								OCLD	7,260,988					
								PP/OCLD	2,667					
								RCNLD	24,334,695					
								RCNLD/PP		1.256668989				
										19,519,773.60	0.224	4,372,429	19,490,957	
								Average					20,610,295	

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Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Rate-making Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) * 28.89%	(7)-(8)-(6)	(9) - (6)				(11)-(12)-(13)	(9)/(14)		(10)/(16)
1	0.5	3,926,000	2,630,473	568,359	741,336	(14,168)	(4,093)	731,261	(10,075)	19,231,062	212,004	(62,898)	19,380,168	3.77%	32,382,905	-0.03%
2	1.5	4,789,720	2,709,387	554,483	719,756	806,094	232,880	1,292,970	573,214	19,114,823	258,645	(133,561)	19,239,907	6.72%	32,956,118	1.74%
3	2.5	4,789,720	2,790,668	543,803	699,656	755,593	218,291	1,236,958	537,302	19,012,551	258,645	(211,134)	19,060,062	6.49%	33,493,420	1.60%
4	3.5	4,789,720	2,874,388	533,822	676,334	705,176	203,725	1,177,785	501,451	18,923,573	258,645	(295,481)	18,886,737	6.24%	33,994,871	1.48%
5	4.5	4,789,720	2,960,619	525,838	653,790	649,473	187,633	1,115,630	461,840	18,845,916	258,645	(386,096)	18,718,465	5.96%	34,456,712	1.34%
6	5.5	5,603,972	3,049,438	519,798	631,997	1,402,739	405,251	1,629,485	997,488	18,777,660	302,614	(482,484)	18,597,790	8.76%	35,454,200	2.81%
7	6.5	5,603,972	3,140,921	514,722	610,930	1,337,399	386,375	1,561,954	951,024	18,671,850	302,614	(580,831)	18,393,633	8.49%	36,405,224	2.61%
8	7.5	5,603,972	3,235,148	510,075	590,566	1,268,183	366,378	1,492,371	901,805	18,573,753	302,614	(684,258)	18,192,109	8.20%	37,307,029	2.42%
9	8.5	6,276,449	3,332,202	507,914	570,880	1,865,453	538,929	1,897,404	1,326,524	18,480,908	338,929	(792,112)	18,027,725	10.52%	38,633,553	3.43%
10	9.5	6,276,449	3,432,168	503,366	551,851	1,789,064	516,861	1,824,054	1,272,203	18,395,723	338,929	(905,149)	17,829,503	10.23%	39,905,756	3.19%
11	10.5	6,276,449	3,535,133	500,436	533,456	1,707,424	493,275	1,747,605	1,214,149	18,316,606	338,929	(1,022,967)	17,632,568	9.91%	41,119,905	2.95%
12	11.5	6,653,036	3,641,187	497,985	515,674	1,998,190	577,277	1,936,587	1,420,913	18,243,100	359,264	(1,145,494)	17,456,870	11.09%	42,540,818	3.34%
13	12.5	6,653,036	3,750,422	495,071	498,485	1,909,058	551,527	1,856,016	1,357,531	18,175,691	359,264	(1,272,931)	17,262,024	10.75%	43,898,349	3.09%
14	13.5	6,653,036	3,862,934	493,138	481,869	1,815,095	524,381	1,772,583	1,290,714	18,113,422	359,264	(1,405,064)	17,067,622	10.39%	45,189,062	2.86%
15	14.5	7,052,218	3,978,822	491,669	465,806	2,115,921	611,289	1,970,438	1,504,632	18,055,855	380,820	(1,541,827)	16,894,848	11.66%	46,639,694	3.22%
16	15.5	7,052,218	4,018,610	490,844	450,280	2,092,484	604,519	1,938,245	1,487,965	18,002,368	380,820	(1,683,105)	16,700,083	11.61%	48,181,659	3.09%
17	16.5	7,052,218	4,058,796	490,200	435,270	2,067,952	597,431	1,905,791	1,470,521	17,952,805	380,820	(1,828,915)	16,504,710	11.55%	49,652,179	2.96%
18	17.5	7,475,351	4,099,384	489,746	420,761	2,465,460	712,271	2,173,950	1,753,189	17,907,000	403,669	(1,979,274)	16,331,395	13.31%	51,405,368	3.41%
19	18.5	7,475,351	4,140,377	488,544	406,736	2,439,694	704,828	2,141,602	1,734,866	17,865,727	403,669	(2,134,472)	16,134,924	13.27%	53,140,234	3.26%
20	19.5	7,475,351	4,181,781	489,427	393,178	2,410,965	696,528	2,107,615	1,714,437	17,826,926	403,669	(2,293,978)	15,936,617	13.22%	54,854,672	3.13%
										3,993,231.34						

Appendix A-5.1 (WAD)

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**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Discounted Cash Flow Analysis**

Discount Rate: 7.97%																		
Capitalization Rate: 4.88%																		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)					
Period	Age	Revenues	O&M Expenses	Tax Depreciation	Cash Flow from Operations	Taxable Income before State & Federal Taxes	State and Federal Taxes @ 28.89%	Capital Expenditures	Change in Working Capital	Net Cash Flows	Period Present Worth Factor (PW)	PW of Cashflow	Accumulated PW of Cashflows					
					(3)-(4)	(6)-(5)	(7) *28.89%			(3)-(4)-(8)-(9)-(10)		(11)*(12)	Sum (13)					
20	19.5	7,475,351	4,181,781	1,041,540	3,293,570	2,252,030	650,611	450,714	-	2,192,245	0.224	491,063	15,609,591					
21	20.5	7,923,872	4,223,599	1,057,593	3,700,273	2,642,680	763,470	454,094	24,220	2,458,489	0.208	511,366	16,120,957					
22	21.5	7,923,872	4,265,835	1,073,906	3,658,037	2,584,131	746,555	457,501	-	2,453,981	0.192	471,164	16,592,121					
23	22.5	7,923,872	4,308,493	1,090,480	3,615,379	2,524,899	729,443	460,932	-	2,425,004	0.178	431,651	17,023,772					
24	23.5	8,399,304	4,351,578	1,107,321	4,047,726	2,940,405	849,483	464,391	25,673	2,708,179	0.165	446,850	17,470,622					
25	24.5	8,399,304	4,395,094	1,124,428	4,004,210	2,879,782	831,969	467,872	-	2,704,369	0.153	413,768	17,884,390					
26	25.5	8,399,304	4,439,045	471,007	3,960,259	3,489,252	1,008,045	471,380	-	2,480,834	0.142	352,278	18,236,668					
27	26.5	8,903,262	4,483,436	474,541	4,419,826	3,945,285	1,139,793	474,917	27,214	2,777,902	0.131	363,905	18,600,573					
28	27.5	8,903,262	4,528,271	478,099	4,374,991	3,896,892	1,125,812	478,478	-	2,770,701	0.121	335,255	18,935,828					
29	28.5	8,903,262	4,573,554	481,685	4,329,708	3,848,023	1,111,694	482,067	-	2,735,947	0.112	306,426	19,242,254					
30	29.5	8,903,262	4,619,290	485,297	4,283,972	3,798,675	1,097,437	485,681	-	2,700,854	0.104	280,889	19,523,143					
31	30.5	8,903,262	4,665,483	488,937	4,237,779	3,748,842	1,083,040	489,324	-	2,665,415	0.096	255,880	19,779,023					
32	31.5	8,903,262	4,712,138	492,604	4,191,124	3,698,520	1,068,502	492,994	-	2,629,628	0.089	234,037	20,013,060					
33	32.5	8,903,262	4,759,259	496,300	4,144,003	3,647,703	1,053,821	496,693	-	2,593,489	0.083	215,260	20,228,320					
34	33.5	8,903,262	4,806,852	500,022	4,096,410	3,596,388	1,038,996	500,418	-	2,556,996	0.077	196,889	20,425,209					
35	34.5	8,903,262	4,854,921	503,772	4,048,341	3,544,569	1,024,026	504,171	-	2,520,144	0.071	178,930	20,604,139					
36	35.5	8,903,262	4,903,470	507,549	3,999,792	3,492,243	1,008,909	507,951	-	2,482,932	0.066	163,874	20,768,013					
37	36.5	8,903,262	4,952,504	511,357	3,950,758	3,439,401	993,643	511,762	-	2,445,353	0.061	149,167	20,917,180					
38	37.5	8,903,262	5,002,030	515,192	3,901,232	3,386,040	978,227	515,600	-	2,407,405	0.056	134,815	21,051,995					
39	38.5	8,903,262	5,052,050	519,054	3,851,212	3,332,158	962,660	519,465	-	2,369,087	0.052	123,193	21,175,188					
40	39.5	8,903,262	5,102,570	522,949	3,800,692	3,277,743	946,940	523,363	-	2,330,389	0.048	111,859	21,287,047					
41	40.5	8,903,262	5,153,596	526,871	3,749,666	3,222,795	931,065	527,288	-	2,291,313	0.045	103,109	21,390,156					
42	41.5	8,903,262	5,205,132	530,823	3,698,130	3,167,307	915,035	531,243	-	2,251,852	0.041	92,326	21,482,482					
43	42.5	8,903,262	5,257,183	534,794	3,646,079	3,089,885	892,668	535,226	-	2,218,185	0.038	84,291	21,566,773					
44	43.5	8,903,262	5,309,755	538,781	3,593,507	3,011,587	870,047	539,242	-	2,184,218	0.036	78,632	21,645,405					
45	44.5	8,903,262	5,362,853	542,783	3,540,409	2,954,126	853,447	543,285	-	2,143,677	0.033	70,741	21,716,146					
46	45.5	8,903,262	5,416,482	546,801	3,486,780	2,896,099	836,683	547,360	-	2,102,737	0.031	65,185	21,781,331					
47	46.5	8,903,262	5,470,647	550,834	3,432,615	2,837,504	819,755	551,465	-	2,061,395	0.028	57,719	21,839,050					
48	47.5	8,903,262	5,525,354	554,881	3,377,908	2,778,334	802,661	555,601	-	2,019,646	0.026	52,511	21,891,561					
49	48.5	8,903,262	5,580,608	558,941	3,322,654	2,718,584	785,399	559,767	-	1,977,488	0.024	47,460	21,939,021					
50	49.5	8,903,262	5,636,414	563,013	3,266,848	2,658,245	767,967	563,967	-	1,934,914	0.022	42,568	21,981,589					
51	50.5	8,903,262	5,692,778	567,106	3,210,484	2,597,318	750,365	568,196	-	1,891,923	0.021	39,730	22,021,319					
52	51.5	8,903,262	5,749,705	571,219	3,153,557	2,535,792	732,590	572,458	-	1,848,509	0.019	35,122	22,056,441					
53	52.5	8,903,262	5,807,202	575,351	3,096,060	2,473,660	714,640	576,752	-	1,804,668	0.018	32,484	22,088,925					
54	53.5	8,903,262	5,865,274	579,502	3,037,988	2,410,923	696,516	581,076	-	1,760,396	0.017	29,927	22,118,852					
55	54.5	8,903,262	5,923,927	583,671	2,979,335	2,347,566	678,212	585,434	-	1,715,689	0.015	25,735	22,144,587					
56	55.5	8,903,262	5,983,166	587,857	2,920,096	2,283,589	659,729	589,825	-	1,670,542	0.014	23,388	22,167,975					
57	56.5	8,903,262	6,042,998	592,060	2,860,264	2,218,983	641,064	594,249	-	1,624,951	0.013	21,124	22,189,099					
58	57.5	8,903,262	6,103,428	596,281	2,799,834	2,153,742	622,216	598,707	-	1,578,911	0.012	18,947	22,208,046					
59	58.5	8,903,262	6,164,462	600,520	2,738,800	2,087,863	603,184	603,195	-	1,532,420	0.011	16,857	22,224,903					
60	59.5	8,903,262	6,226,107	604,777	2,677,155	2,021,337	583,964	607,720	-	1,485,471	0.010	14,844	22,240,587					
								21,541,825										
Age	59.5																	
PW(Age) = 1/(1+Discount Rate) ^(Age)	0.010													Net Plant	18,566,361			
PW to Perpetuity = 1/Capitalization Rate	12.547													ADIT	(3,645,318)			
PW (20and Beyond) = PW to Perpetuity * PW Factor _(19.5)	0.125													Rate Base	14,921,043	0.010	149,210	22,374,113
											Plant							
											Construction							
											Inflation Rate	0.0422	Input					
											Plant Inflation over 59.5 years	174,537,108	0.010	1,745,371	23,970,274			
											PP	19,364,443						
											RCNLD	24,334,695						
											RCNLD/PP	1.256668989	0.010	187,508	22,412,411			
												18,750,811.98						

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Report & Testimony 2023\Scanned 2023 report\Brentwood Wastewater System Valuation

Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Potential Purchaser: Investor-Owned Utility
As of January 1, 2023
Calculated Rates of Return on Rate Base and Equity
(Years 1 through 20)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Period	Age	Revenues	O&M Expenses	Book Depreciation	Rate-making Interest Expense	Book Taxable Income (Current + Deferred)	State and Federal Taxes @ 28.89%	Net Operating Income	Net (Equity) Income	Net Plant	Working Capital	Accumulated Deferred Income Taxes (ADIT)	Rate Base	Return on Rate Base	Net Equity	Return on Equity
						(3)-(4)-(5)-(6)	(7) *28.89%	(7)-(8)-(6)	(9) - (6)				(11)-(12)-(13)	(9)/(14)		(10)/(16)
20	19.5	7,475,351	4,181,781	489,427	393,178	2,410,965	696,528	2,107,615	1,714,437	17,826,926	403,669	(2,293,978)	15,936,617	13.22%	54,854,672	3.13%
20	20.5	7,923,872	4,223,599	488,504	380,072	2,831,697	818,077	2,393,692	2,013,620	17,792,425	427,889	(2,458,388)	15,761,926	15.19%	56,868,291	3.54%
20	21.5	7,923,872	4,265,835	488,703	367,403	2,801,931	809,478	2,359,856	1,992,453	17,761,132	427,889	(2,627,453)	15,561,568	15.16%	58,860,744	3.39%
20	22.5	7,923,872	4,308,493	489,414	355,156	2,770,809	800,487	2,325,478	1,970,322	17,732,559	427,889	(2,801,101)	15,359,347	15.14%	60,831,066	3.24%
20	23.5	8,399,304	4,351,578	489,662	343,318	3,214,746	928,740	2,629,324	2,286,006	17,707,196	453,562	(2,979,543)	15,181,217	17.32%	63,117,072	3.62%
20	24.5	8,399,304	4,395,094	490,397	331,874	3,181,939	919,262	2,594,551	2,262,677	17,684,579	453,562	(3,162,714)	14,975,427	17.33%	65,379,750	3.46%
20	25.5	8,399,304	4,439,045	490,616	320,811	3,148,832	909,698	2,559,945	2,239,134	17,665,250	453,562	(3,157,049)	14,561,763	17.11%	67,618,884	3.31%
20	26.5	8,903,262	4,483,436	492,691	310,118	3,617,017	1,044,956	2,882,179	2,572,061	17,647,382	480,776	(3,151,805)	14,976,253	19.24%	70,190,945	3.66%
20	27.5	8,903,262	4,528,271	493,168	299,780	3,582,043	1,034,852	2,846,971	2,547,191	17,632,597	480,776	(3,147,451)	14,565,922	19.02%	72,738,136	3.50%
20	28.5	8,903,262	4,573,554	493,762	289,788	3,546,158	1,024,485	2,811,461	2,521,673	17,620,807	480,776	(3,143,962)	14,957,621	18.80%	75,259,809	3.35%
20	29.5	8,903,262	4,619,290	495,154	280,128	3,508,690	1,013,661	2,775,157	2,495,029	17,611,238	480,776	(3,141,115)	14,950,899	18.56%	77,754,838	3.21%
20	30.5	8,903,262	4,665,483	495,483	270,790	3,471,506	1,002,918	2,739,378	2,468,588	17,604,982	480,776	(3,139,224)	14,946,534	18.33%	80,223,426	3.08%
20	31.5	8,903,262	4,712,138	496,833	261,764	3,432,527	991,657	2,702,634	2,440,870	17,601,045	480,776	(3,138,002)	14,943,819	18.09%	82,664,296	2.95%
20	32.5	8,903,262	4,759,259	496,604	253,039	3,394,360	980,631	2,666,768	2,413,729	17,601,036	480,776	(3,137,915)	14,943,897	17.85%	85,078,025	2.84%
20	33.5	8,903,262	4,806,852	498,100	244,604	3,353,706	968,886	2,629,424	2,384,820	17,603,255	480,776	(3,138,471)	14,945,560	17.59%	87,462,845	2.73%
20	34.5	8,903,262	4,854,921	498,919	236,451	3,312,971	957,117	2,592,305	2,355,854	17,608,407	480,776	(3,139,873)	14,949,310	17.34%	89,818,699	2.62%
20	35.5	8,903,262	4,903,470	500,571	228,569	3,270,652	944,891	2,554,330	2,325,761	17,615,686	480,776	(3,141,889)	14,954,573	17.08%	92,144,460	2.52%
20	36.5	8,903,262	4,952,504	501,428	220,950	3,228,380	932,679	2,516,651	2,295,701	17,625,919	480,776	(3,144,758)	14,961,937	16.82%	94,440,161	2.43%
20	37.5	8,903,262	5,002,030	503,277	213,585	3,184,370	919,964	2,477,991	2,264,406	17,638,140	480,776	(3,148,200)	14,970,716	16.55%	96,704,567	2.34%
20	38.5	8,903,262	5,052,050	503,780	206,465	3,140,967	907,425	2,440,007	2,233,542	17,653,722	480,776	(3,152,612)	14,981,886	16.29%	98,938,109	2.26%
20	39.5	8,903,262	5,102,570	506,000	199,583	3,095,109	894,177	2,400,515	2,200,932	17,670,981	480,776	(3,157,509)	14,994,248	16.01%	101,139,041	2.18%
20	40.5	8,903,262	5,153,596	506,980	192,930	3,049,756	881,075	2,361,611	2,168,681	17,691,185	480,776	(3,163,256)	15,008,705	15.73%	103,307,722	2.10%
20	41.5	8,903,262	5,205,132	508,055	186,499	3,003,576	867,733	2,322,342	2,135,843	17,714,268	480,776	(3,169,834)	15,025,210	15.46%	105,443,565	2.03%
20	42.5	8,903,262	5,257,183	508,840	180,283	2,956,956	854,265	2,282,974	2,102,691	17,740,548	480,776	(3,183,515)	15,037,809	15.18%	107,546,256	1.96%
20	43.5	8,903,262	5,309,755	510,465	174,273	2,908,769	840,343	2,242,699	2,068,426	17,769,218	480,776	(3,204,158)	15,045,836	14.91%	109,614,682	1.89%
20	44.5	8,903,262	5,362,853	510,970	168,464	2,860,975	826,536	2,202,922	2,034,439	17,801,426	480,776	(3,225,916)	15,056,286	14.63%	111,649,121	1.82%
20	45.5	8,903,262	5,416,482	511,284	162,849	2,812,647	812,574	2,162,922	2,000,073	17,837,394	480,776	(3,248,854)	15,069,316	14.35%	113,649,194	1.76%
20	46.5	8,903,262	5,470,647	515,116	157,420	2,760,079	797,387	2,120,112	1,962,692	17,873,634	480,776	(3,271,965)	15,082,445	14.06%	115,611,886	1.70%
20	47.5	8,903,262	5,525,354	514,531	152,173	2,711,204	783,267	2,080,110	1,927,937	17,914,594	480,776	(3,296,534)	15,098,836	13.78%	117,539,823	1.64%
20	48.5	8,903,262	5,580,608	515,737	147,101	2,659,816	768,421	2,038,496	1,891,395	17,958,512	480,776	(3,322,054)	15,117,234	13.48%	119,431,217	1.58%
20	49.5	8,903,262	5,636,414	519,531	142,197	2,605,120	752,619	1,994,698	1,852,501	18,002,836	480,776	(3,347,787)	15,135,825	13.18%	121,283,718	1.53%
20	50.5	8,903,262	5,692,778	522,612	137,457	2,550,415	736,815	1,951,057	1,813,600	18,048,308	480,776	(3,373,948)	15,155,136	12.87%	123,097,318	1.47%
20	51.5	8,903,262	5,749,705	524,717	132,875	2,495,965	721,084	1,907,756	1,774,881	18,095,936	480,776	(3,400,829)	15,175,883	12.57%	124,872,199	1.42%
20	52.5	8,903,262	5,807,202	527,595	128,446	2,440,019	704,922	1,863,543	1,735,097	18,144,979	480,776	(3,428,219)	15,197,536	12.26%	126,607,296	1.37%
20	53.5	8,903,262	5,865,274	526,964	124,165	2,386,859	689,564	1,821,460	1,697,295	18,198,977	480,776	(3,457,139)	15,222,614	11.97%	128,304,592	1.32%
20	54.5	8,903,262	5,923,927	530,238	120,026	2,329,071	672,869	1,776,228	1,656,202	18,254,057	480,776	(3,486,472)	15,248,361	11.65%	129,960,794	1.27%
20	55.5	8,903,262	5,983,166	533,622	116,025	2,270,449	655,933	1,730,541	1,614,516	18,310,143	480,776	(3,516,196)	15,274,723	11.33%	131,575,310	1.23%
20	56.5	8,903,262	6,042,998	532,394	112,158	2,215,712	640,119	1,687,751	1,575,593	18,371,880	480,776	(3,547,653)	15,305,003	11.03%	133,150,903	1.18%
20	57.5	8,903,262	6,103,428	536,219	108,419	2,155,196	622,636	1,640,979	1,532,560	18,434,250	480,776	(3,579,395)	15,335,631	10.70%	134,683,463	1.14%
20	58.5	8,903,262	6,164,462	537,964	104,805	2,096,031	605,543	1,595,293	1,490,488	18,499,364	480,776	(3,612,032)	15,368,108	10.38%	136,173,952	1.09%
20	59.5	8,903,262	6,226,107	540,603	101,311	2,035,241	587,981	1,548,571	1,447,260	18,566,361	480,776	(3,645,318)	15,401,819	10.05%	137,621,212	1.05%

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Teport & Testimony 2023\Scanned 2023 report\Brentwood Wastewater System Valuation

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity	70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r	100.0%						7.97%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							4.88%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitilization Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost (2)*(3)
Debt	30%	Market	5.34%	Market	Not Applicable	Not Applicable	1.60%
Equity	70%	Market	9.75%	Market	Not Applicable	Not Applicable	6.83%
Total Capital r	100.0%						8.43%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							5.33%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	50%	Embedded	3.76%	Embedded	Not Applicable	Not Applicable	1.88%
Equity	50%	Embedded	9.75%	Market	Not Applicable	Not Applicable	4.88%
Total Capital r	100.0%						6.76%
Growth (g)						Not Applicable	0.00%
Rate without Growth: $[(1+r)/(1+g)]-1$							6.76%

Appendix A-5.1 (WAD)

Water Industry (A American - Brentwood) Issues & Technology 2013-2033 (Amended 2022) Report (Brentwood Wastewater System Valuation)

Strength of Bonded Sewer Fund	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Assets										
Land and Equip	1,102,242	1,278,714	1,314,932	1,877,919	1,842,995	1,851,711	1,839,537	1,839,426		
Due to Other Governments										
Due to Other Governments	422,890	33,799	33,799	44,887	44,887	44,887	44,887	44,887		
Other Receivables	1,329,612	1,671,583	1,621,117	1,616,748	1,626,896	1,608,614	1,607,504	1,604,110		
Total Assets	2,854,744	3,014,106	2,970,848	3,539,553	3,514,780	3,505,212	3,491,928	3,488,423		
Liabilities										
Due to Other Funds	70,575	70,839	138,336	163,242	154,825	1,483				
Accounts Payable	341,798	336,642	541,132	497,562	18,362	536,979	539,931	492,470		
Deferred Revenue	10,911	4,420	3,000	23,549		18,109	13,016	15,879		
Unearned Revenue	9,765	16,700			40,139	28,100				
Total Liabilities	433,049	438,581	732,468	724,453	1,134,336	1,083,671	592,016	616,395		
Net Worth	2,421,695	2,575,525	2,238,380	2,815,100	2,380,444	2,421,541	2,900,012	2,872,028		
Capital Assets	1,102,242	1,278,714	1,314,932	1,877,919	1,842,995	1,851,711	1,839,537	1,839,426		
Debt										
General Obligation										
Revenue Bonds										
Total Debt										
Total Fund Balances	2,421,695	2,575,525	2,238,380	2,815,100	2,380,444	2,421,541	2,900,012	2,872,028		
Total Available and Fund Balances	2,421,695	2,575,525	2,238,380	2,815,100	2,380,444	2,421,541	2,900,012	2,872,028		
Revenue										
Property Taxes	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200		
Industrial, Business and Residential	2,644,495	2,977,738	2,962,647	3,195,844	3,137,886	3,177,586	3,183,812	3,132,831		
Charges for Services	3,869	3,869	3,869	3,869	3,869	3,869	3,869	3,869		
Investment Income	2,643,361	2,974,279	2,966,431	3,197,233	3,139,379	3,178,722	3,185,761	3,134,670		
Total Revenue	5,293,225	6,157,086	6,134,147	6,607,346	6,482,334	6,563,377	6,574,612	6,452,570		
Expenses										
Public Works - Construction	1,832,951	2,144,818	2,177,878	2,333,377	2,408,421	2,432,181	2,405,893	2,352,917		
Administration	3,087	3,087	3,087	3,087	3,087	3,087	3,087	3,087		
Debt Service	197,832	198,549	198,538	212,865	214,548	215,814	217,371	218,214		
Interest	17,999	18,312	18,438	19,401	19,532	19,582	19,632	19,682		
Total Expenses	2,047,669	2,364,676	2,397,901	2,565,670	2,647,590	2,670,164	2,645,197	2,593,502		
Income	3,245,556	3,792,410	3,736,246	4,041,676	3,834,743	3,893,213	3,929,415	3,859,068		
Transfers Out	(115,000)	(190,000)	(240,000)	(284,000)	(305,000)	(326,874)	(344,584)	(367,200)		
Net	3,130,556	3,602,410	3,496,246	3,757,676	3,529,743	3,566,339	3,584,831	3,491,868		

Minimum Cover	Current Assets	Current Liabilities
28.0%	28.0%	28.0%
22.6%	22.6%	22.6%
22.8%	22.8%	22.8%
22.6%	22.6%	22.6%
22.6%	22.6%	22.6%
22.6%	22.6%	22.6%
22.6%	22.6%	22.6%
22.6%	22.6%	22.6%

Year	Revenue	Expenses	Income
2014	5,293,225	2,047,669	3,245,556
2015	6,157,086	2,364,676	3,792,410
2016	6,134,147	2,397,901	3,736,246
2017	6,607,346	2,565,670	4,041,676
2018	6,482,334	2,647,590	3,834,743
2019	6,563,377	2,670,164	3,893,213
2020	6,574,612	2,645,197	3,929,415
2021	6,452,570	2,593,502	3,859,068
2022			
2023			

Year	Revenue	Expenses	Income
2014	5,293,225	2,047,669	3,245,556
2015	6,157,086	2,364,676	3,792,410
2016	6,134,147	2,397,901	3,736,246
2017	6,607,346	2,565,670	4,041,676
2018	6,482,334	2,647,590	3,834,743
2019	6,563,377	2,670,164	3,893,213
2020	6,574,612	2,645,197	3,929,415
2021	6,452,570	2,593,502	3,859,068
2022			
2023			

Year	Revenue	Expenses	Income
2014	5,293,225	2,047,669	3,245,556
2015	6,157,086	2,364,676	3,792,410
2016	6,134,147	2,397,901	3,736,246
2017	6,607,346	2,565,670	4,041,676
2018	6,482,334	2,647,590	3,834,743
2019	6,563,377	2,670,164	3,893,213
2020	6,574,612	2,645,197	3,929,415
2021	6,452,570	2,593,502	3,859,068
2022			
2023			

Year	Revenue	Expenses	Income
2014	5,293,225	2,047,669	3,245,556
2015	6,157,086	2,364,676	3,792,410
2016	6,134,147	2,397,901	3,736,246
2017	6,607,346	2,565,670	4,041,676
2018	6,482,334	2,647,590	3,834,743
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Year	Revenue	Expenses	Income
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2020	6,574,612	2,645,197	3,929,415
2021	6,452,570	2,593,502	3,859,068
2022			
2023			

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

Market Approach

**WAD Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net**

Appendix A-5.1 (WAD)

Brentwood Wastewater System Valuation

**Pennsylvania American Water Company
Borough of Brentwood
Wastewater Collection System
Investor-Owned Utility
As of January 1, 2023**

Comparable Sales Approach

Ratios See Market Tab Rows 39:45

Central Tendency and Reliability Analysis

Market Sales Analysis - PP/OCLD

	Simple	Weighted
All Acquisitions	1.7632	1.8333
Wastewater Collection and Treatment	1.7972	1.8248
Wastewater Collection	1.8733	2.0712
Water Treatment and Distribution	1.4354	1.5060
Water Distribution	1.3500	1.3500
Conclusion		1.8733

Market Sales Analysis - PP/CORLD

	Simple	Weighted
All Acquisitions	0.8171	0.8747
Wastewater Collection and Treatment	0.8536	0.8803
Wastewater Collection	0.8077	0.8562
Water Treatment and Distribution	0.7686	0.8381
Water Distribution	0.5320	0.5320
Conclusion		0.8077

Borough of Brentwood OCLD

Cost Approach - OCLD

7,260,988

Borough of Brentwood CORLD

Cost Approach - CORLD

24,334,695

Market Value Indication

13,602,009

Market Value Indication

19,655,133

Market Sales Analysis - PP/Customer

	Simple	Weighted
All Acquisitions	8563	9890
Wastewater Collection and Treatment	10200	11062
Wastewater Collection	6507	5387
Water Treatment and Distribution	7188	7882
Water Distribution	3992	3992

Financial Basis¹

	Market Value per Share to Book Value per Share
Financial Markets	
Market to Book (equity)	3.21
Market to Book (equity and debt)	1.94
Use (equity and debt)	1.94

Conclusion

Valley Wastewater Info

6,507

Borough of Brentwood Customers

3,980

AUS Input

Borough of Brentwood OCLD

Cost Approach - OCLD

7,260,988

Market Value Indication

25,897,860

Market Value Indication

14,086,317

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	16.51	12.67
Wastewater Collection	18.71	13.77
Water Treatment and Distribution	14.13	11.14
Water Distribution	20.24	20.24
Conclusion		18.71

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)

	Simple	Weighted
All Acquisitions	17.09	12.74
Wastewater Collection and Treatment	11.45	10.17
Wastewater Collection	12.89	12.07
Water Treatment and Distribution	7.37	6.33
Water Distribution	13.59	13.59
Conclusion		12.89

Borough of Brentwood Cash Flows

1,488,495

Income Approach

Borough of Brentwood Cash Flows

Income Approach

1,661,649

Market Value Indication

27,849,734

21,418,662

Summary of Market Analyses

Indicators

OCLD	13,602,009
CORLD	19,655,133
Customers	25,897,860
Cash Flows	
EBITDA Periods 1-5	27,849,734
EBITDA Periods 1-13	21,418,662
Value Line	14,086,317

Mean 20,418,286

Median 20,536,898

Conclusion 20,418,286

Bulletin No. 196

1912 to July 1, 2022

The
Handy-Whitman Index[®]
of
Public Utility
Construction Costs[™]



Trends of Construction Costs

COMPILED & PUBLISHED BY
Whitman, Requardt & Associates, LLP
Engineers, Architects and Planners
801 South Caroline Street
Baltimore, Maryland 21231
410-235-3450

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WHITMAN, REQUARDT AND ASSOCIATES, LLP

ISSN 1092-955X

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Appendix A-5.1 (WAD)

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TRENDS OF PUBLIC UTILITY CONSTRUCTION COSTS

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COST TRENDS OF ELECTRIC UTILITY CONSTRUCTION

Cost Trend Tables - 1912 to July 1, 2022		
North Atlantic Region	E-1	E-1-1
South Atlantic Region	E-2	E-2-1
North Central Region	E-3	E-3-1
South Central Region	E-4	E-4-1
Plateau Region	E-5	E-5-1
Pacific Region	E-6	E-6-1

COST TRENDS OF GAS UTILITY CONSTRUCTION

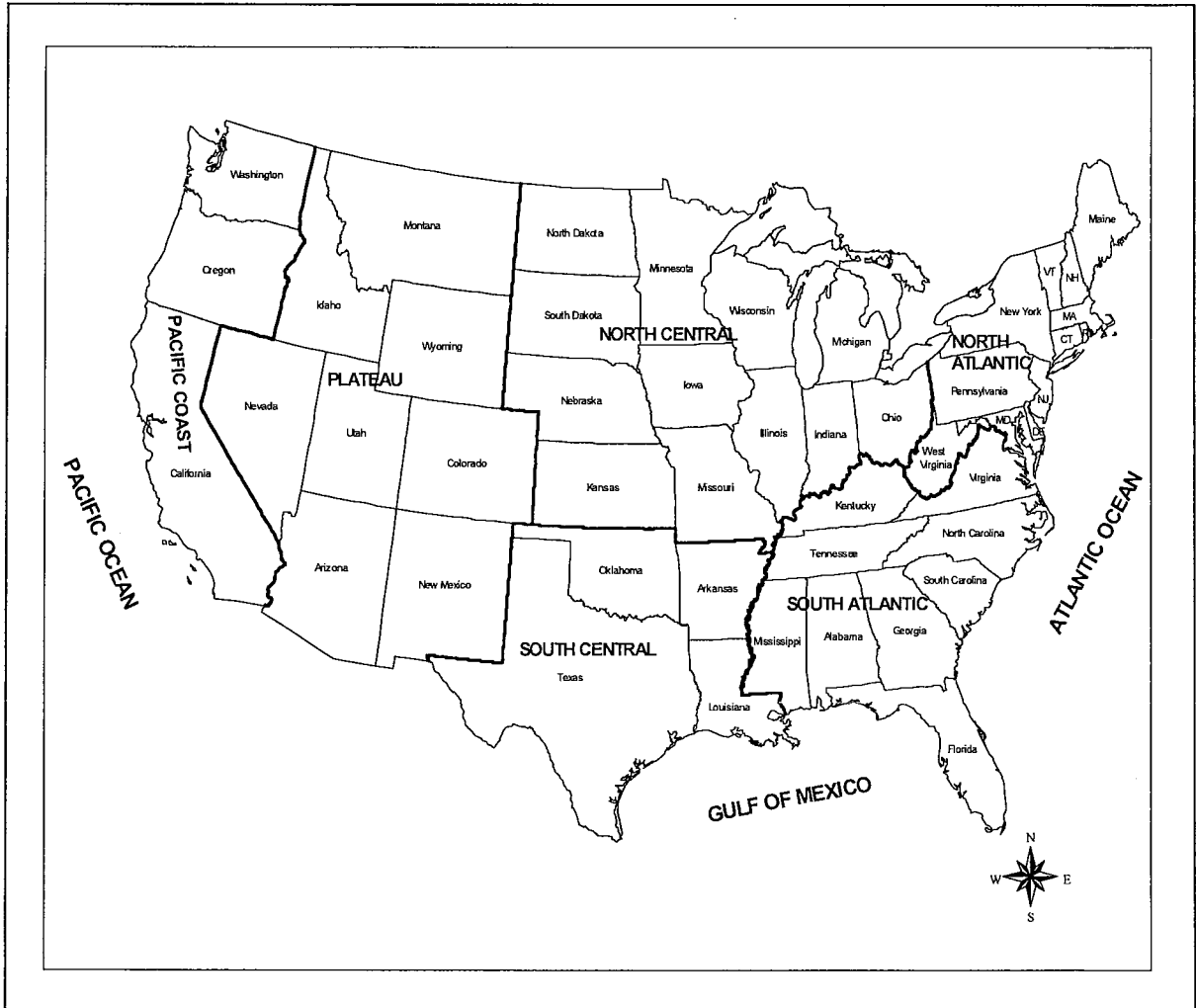
Cost Trend Tables - 1912 to July 1, 2022		
North Atlantic Region	G-1	G-1-1
South Atlantic Region	G-2	G-2-1
North Central Region	G-3	G-3-1
South Central Region	G-4	G-4-1
Plateau Region	G-5	G-5-1
Pacific Region	G-6	G-6-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

Cost Trend Tables - 1912 to July 1, 2022		
North Atlantic Region	W-1	W-1-1
South Atlantic Region	W-2	W-2-1
North Central Region	W-3	W-3-1
South Central Region	W-4	W-4-1
Plateau Region	W-5	W-5-1
Pacific Region	W-6	W-6-1

Appendix A-5.1 (WAD) TRENDS OF PUBLIC UTILITY CONSTRUCTION COSTS

GEOGRAPHIC REGIONS



Tradition of Quality

The Handy-Whitman Index of Public Utility Construction Costs has been published continuously since 1924. Formerly the Handy Index, Bulletin Nos. 1 through 15 were developed by William W. Handy of Baltimore who had wide valuation experience in public utilities. *He believed that valuation studies should not be confined to rate cases but should be kept alive to the benefit of the utility industry.* He began publishing index numbers for electric and gas construction cost trends. Carrying on with the *tradition of quality*, after Mr. Handy's death, we continued publication for his estate beginning with Bulletin 16. Then, January 1, 1950, Whitman, Requardt and Associates, LLP purchased rights to the publication and have since been the sole publishers.

The name Handy-Whitman Index was adopted for Bulletin No. 53 and succeeding issues to combine the names of Mr. Handy and Ezra B. Whitman, a well-known valuation engineer. In 1957 an index of water utility construction costs was added. Mr. Whitman was a consultant on the publication of the Index until his death in 1963.

Whitman, Requardt and Associates, LLP

Ezra B. Whitman, a well-known valuation engineer was one of the founders of our firm. Major Whitman, as he was known from his World War I service, had already made a name for himself. Prior to the founding of the firm in 1915, Major Whitman had been President and Chief Engineer of the Water Board of the City of Baltimore. He designed the first rapid sand filtration plant serving a major city while he was the Baltimore Water Engineer. He was also president of the American Society of Civil Engineers and of the American Institute of Consulting Engineers and a chairman of the Public Service Commission of Maryland.

The Handy-Whitman Index is prepared especially for electric, gas and water utilities and is the only known publication of its kind available to the public. The list of subscribers is international and includes operating utilities, regulatory bodies, valuation engineers, equipment industries, insurance companies and reference libraries.

Tradition of Quality Continued

Since 1915, Whitman, Requardt and Associates, LLP, has been an independent consulting engineering firm organized to serve government, industry and private enterprise.

The firm has steadily expanded its engineering capabilities, providing complete services for civil, sanitary, structural, mechanical and electrical engineering and architectural projects from job inception through construction management.

Construction cost data from utility projects of all types are available from design and valuation assignments. The staff is composed of specialists in these and related disciplines who bring a diverse professional and academic expertise to each assignment. A full-time staff is maintained specifically for preparing the Handy-Whitman Index.

Methods of Preparation of Indexes

An index number is a percentage ratio between the cost of an item at any stated time and its cost at a base period, or:

$$\text{Index Number} = \frac{\text{cost at stated time}}{\text{cost at base period}} \times 100$$

Index numbers have been prepared for many items, including wage rates, cost-of-living, material and equipment costs, and financial transactions. In the Handy-Whitman Index, index numbers have been developed for Building Construction, Electric Utility Construction, Gas Utility Construction and Water Utility Construction. Prices of basic materials such as cement, sand, gravel, cast iron pipe, wire, etc., are obtained from publications such as Engineering News-Record and checked against prices actually being paid for such materials. Labor cost trends are computed from labor rates obtained from sources such as the Construction Labor Research Council. Prices and cost trends of equipment are obtained from nationally recognized manufacturers, and operating utilities.

Handy-Whitman Index numbers are developed from wage rates and prices prevailing on January 1 and July 1 each year. The index numbers are generally based on 1973 = 100, although those items of recent origin are based on a later year.

The proportions of basic materials, labor, equipment and other cost components used in the Handy-Whitman Index are based on analyses developed during valuation and design assignments and on data furnished by utilities and industrial sources willing to assist with the Index. These data are reviewed continuously, and weightings and components are revised as required. This review assures that the indexes published reflect current construction practice.

Geographic Regions

To reflect differing cost trends throughout the 48 contiguous states, the index has been divided into six geographical regions of similar characteristics. They are shown on the accompanying map.

Use of Index Numbers

Handy-Whitman Index numbers have been widely used to trend earlier valuations and original cost records to estimate reproduction cost at prices prevailing at a certain date. The use of indexes for an appropriate property item or group will provide a reliable guide to changes in cost. Cost trends are given for all the important items of property. The electric and gas groups are arranged by the Federal Energy Regulatory Commission Uniform System of Accounts.

The water property accounts are arranged to follow the classification of the National Association of Regulatory Utility Commissioners and the American Water Works Association.

The Handy-Whitman Index will furnish a yardstick for the fluctuations in value of property which will be satisfactory for many purposes. In rate cases, when a more exact determination of value is desired, however, the Index must be used carefully. Average prices and cost trends are used to develop the Index, and any direct application of cost trends without checking with actual local experience may not be accepted without controversy. When local experience is compared with the index and the correlation between the two trends is determined, the result is satisfactory. Costs trended by such a method are used to assist in establishing a rate base.

Indexes in these bulletins are used to trend earlier valuations or original cost records for insurance purposes.

The Handy-Whitman Index has a general application in valuations of all types of property. The building construction cost trends may be used wherever similar items of property are to be compared. Many of the other trends may be used for related items in other industries because of their similarity.

State-of-the-art changes often affect costs independently of inflation. New regulatory and environmental requirements, changes in work rules and improved design standards, for instance, increase construction costs even though the price of wages, materials and equipment may be static. Trended construction costs will not reflect such changes. However, trended costs are a reasonably accurate measure of the cost of reproducing actual plant.

Although every effort is made to maintain accuracy, Whitman, Requardt and Associates, LLP disclaim any

responsibility for the use of these indexes, because local conditions may vary.

No guarantee or warranty of any kind is made in the sale of the Handy-Whitman Index. Published numbers are occasionally subject to change based upon receipt of new or different information. These numbers will be bolded.

Further inquiries on electric, gas and water indexes should be addressed to Whitman, Requardt and Associates, LLP.

Total Electric Plant and Function

Three indexes are provided for total plant. The first is for all steam generation and the other two for weighted combinations of steam and nuclear, and steam and hydro generation. Indexes are also provided for each function.

Indexes are not maintained for plant accounts 323,324,325,341,345 and 346. We believe that indexes for comparable accounts in other functions are sufficiently accurate for these accounts.

The indexes for total nuclear production and total other production incorporate comparable indexes from the steam production function for the accounts not listed.

Value of Index Numbers

We believe that present-day reproduction cost of any property can be calculated more accurately using index numbers than by repricing a complete inventory.

Trending the controlling items of property in any utility by the index method saves time and effort in arriving at a valuation. Analyzing and determining cost trends for all of the great numbers of articles of plant that represent only a very small proportion of the value of the utility is not necessary. They may be assumed to follow in general the trend of the controlling items, and the fluctuations in value above or below the trends of the controlling items will tend to offset each other and have a very slight effect on the total value.

Comments on Bulletin No. 196

During the twelve-month period ending July 1, 2022, the average index of all geographical regions for Total Gas Plant increased 8.5%, and the comparable index for Electric Plant-All Steam Generation increased 11.5%.

November 2022
Whitman, Requardt and Associates, LLP

Cost Trends Of

Building

Construction

COST TREND TABLES
1912 to July 1, 2022

Appendix A-5.1 (WAD)

B-1

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	8	8	8	8	12	18	19	19	20	15	14	17	17	17	17	16
3	Brick Building Construction	8	8	8	9	11	15	17	19	21	17	16	18	19	18	18	18
4	Structural Steel Erected	9	9	9	8	16	29	26	22	22	16	15	19	19	17	17	16
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Reinf. Concrete (Plant-Mix)	7	7	7	8	10	13	16	17	18	14	14	15	17	17	16	16
7																	
8	Building Material																
9	Ready-Mix Concrete	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	Lumber for Reinf. Concrete	7	7	7	7	9	13	19	19	20	14	13	15	19	19	15	15
11	Steel Bars for Reinf. Concrete	15	15	15	17	34	47	37	35	37	24	22	28	29	27	25	24
12	Common Brick	10	10	10	14	16	19	20	27	34	31	30	33	30	28	28	28
13	Concrete Block	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14																	
15	Labor																
16	Building Trades Labor	6	6	6	6	6	7	8	10	11	11	11	12	13	14	15	15
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	5	5	5	5	5	6	8	10	11	9	9	10	11	11	11	11
19	Common Labor	4	4	4	4	5	5	8	10	11	9	8	9	9	9	9	9
20	Electricians	5	5	5	6	6	6	8	9	10	11	11	11	12	13	14	14
21	Pipefitters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	Plumbers	6	6	6	6	6	7	8	9	9	11	11	12	12	13	14	14
23																	

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		2	2	3	3	3	3	3	3	3	3	3	3	4	4	4	4
		8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	16	16	15	14	12	13	15	15	15	16	16	16	17	18	20	20
3	Brick Building Construction	18	17	17	16	14	14	16	16	16	17	17	17	17	19	20	20
4	Structural Steel Erected	16	16	15	13	11	12	14	15	15	17	15	15	15	19	20	20
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Reinf. Concrete (Plant-Mix)	16	16	15	14	12	13	15	15	15	17	17	17	17	18	19	19
7																	
8	Building Material																
9	Ready-Mix Concrete	-	-	-	-	-	-	32	32	32	33	33	32	31	31	32	33
10	Lunber for Reinf. Concrete	15	15	14	12	10	12	16	13	13	15	15	15	16	19	21	22
11	Steel Bars for Reinf. Concrete	24	25	22	20	20	21	24	23	25	31	29	28	27	28	28	28
12	Common Brick	25	23	20	20	19	19	22	20	20	20	20	20	20	21	22	22
13	Concrete Block	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14																	
15	Labor																
16	Building Trades Labor	15	15	15	15	14	12	13	13	13	15	15	15	16	17	18	18
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	11	11	10	10	9	9	11	11	11	12	13	13	14	14	14	15
19	Common Labor	9	9	9	9	8	6	8	9	9	10	10	11	11	12	12	13
20	Electricians	14	15	15	16	16	14	14	14	15	16	16	17	17	18	19	19
21	Pipefitters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	Plumbers	14	15	15	15	13	13	14	14	14	15	16	16	17	17	18	18
23																	

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	20	20	24	28	32	34	35	37	38	40	42	44	48	52	53	55
3	Brick Building Construction	21	21	24	28	32	34	35	37	38	39	41	42	46	49	50	52
4	Structural Steel Erected	20	20	24	30	37	39	41	43	43	47	48	50	59	66	67	67
5	Reinf. Concrete (Ready-Mix)	-	-	-	-	-	-	-	-	35	37	39	41	43	46	48	50
6	Reinf. Concrete (Plant-Mix)	20	21	24	27	30	31	32	34	35	36	38	40	42	44	45	47
7																	
8	Building Material																
9	Ready-Mix Concrete	33	33	35	39	44	45	46	47	49	50	54	57	60	63	66	66
10	Lumber for Reinf. Concrete	23	23	29	33	38	34	37	37	38	36	39	42	44	45	44	47
11	Steel Bars for Reinf. Concrete	28	28	30	34	37	43	45	47	48	51	53	56	61	68	70	72
12	Common Brick	23	27	31	33	38	42	43	47	47	48	50	51	52	53	54	54
13	Concrete Block	-	-	-	-	-	56	58	62	63	63	62	67	69	70	69	73
14																	
15	Labor																
16	Building Trades Labor	18	19	21	23	26	27	28	31	31	33	34	36	37	39	41	43
17	Heavy Constr. Trades Labor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Labor for Reinf. Concrete	15	16	18	22	24	25	26	27	29	30	32	33	35	37	39	41
19	Common Labor	13	14	17	19	21	23	24	25	27	28	30	31	33	35	37	40
20	Electricians	19	19	20	23	25	27	28	30	32	33	34	35	37	38	41	42
21	Pipefitters	-	-	-	-	-	26	27	28	29	31	32	33	35	35	39	41
22	Plumbers	18	18	19	22	25	27	28	29	30	32	34	35	37	38	40	41
23																	

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7
		0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	55	54	55	55	57	58	59	62	65	70	75	84	91	100	121	134
3	Brick Building Construction	53	52	53	54	56	57	59	61	64	68	74	84	91	100	118	127
4	Structural Steel Erected	66	62	62	62	63	63	65	66	69	74	77	83	89	100	140	161
5	Reinf. Concrete (Ready-Mix)	51	52	53	54	55	57	59	61	64	69	77	88	94	100	111	119
6	Reinf. Concrete (Plant-Mix)	49	48	50	51	52	53	56	58	61	66	73	83	91	100	108	115
7																	
8	Building Material																
9	Ready-Mix Concrete	66	66	66	65	64	64	65	65	68	73	82	91	94	100	112	123
10	Lumber for Reinf. Concrete	47	39	41	40	39	38	41	42	46	53	53	63	75	100	93	91
11	Steel Bars for Reinf. Concrete	72	72	72	72	74	81	82	81	81	81	84	91	91	100	157	156
12	Common Brick	56	56	56	57	58	58	60	62	65	65	68	78	84	100	123	126
13	Concrete Block	68	70	70	70	70	67	70	72	75	77	81	90	98	100	109	113
14																	
15	Labor																
16	Building Trades Labor	45	46	48	50	52	54	56	59	62	68	76	87	96	100	108	115
17	Heavy Constr. Trades Labor	-	45	47	48	50	53	56	58	61	67	76	86	96	100	107	116
18	Labor for Reinf. Concrete	43	45	47	49	51	53	56	58	62	67	77	88	96	100	108	116
19	Common Labor	42	44	45	47	49	52	55	58	61	66	75	88	97	100	109	117
20	Electricians	43	45	48	49	51	53	55	57	60	64	72	82	91	100	108	117
21	Pipefitters	41	44	45	45	48	50	52	55	57	62	70	85	97	100	107	114
22	Plumbers	43	44	46	48	49	51	53	56	58	64	71	86	96	100	107	114
23																	

Appendix A-5.1 (WAD)

B-1

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1 9 7 6	1 9 7 7	1 9 7 8	1 9 7 9	1 9 8 0	1 9 8 1	1 9 8 2	1 9 8 3	1 9 8 4	1 9 8 5	1 9 8 6	1 9 8 7	1 9 8 8	1 9 8 9	1 9 9 0	1 9 9 1
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	134	139	150	167	184	190	189	196	211	222	229	234	246	258	262	257
3	Brick Building Construction	130	136	148	164	183	192	197	206	217	225	233	239	252	265	271	272
4	Structural Steel Erected	153	154	170	193	225	227	202	202	225	240	249	255	272	286	286	261
5	Reinf. Concrete (Ready-Mix)	124	131	140	154	166	176	191	201	210	220	225	229	238	244	251	260
6	Reinf. Concrete (Plant-Mix)	122	130	139	154	160	167	177	187	196	204	209	0	220	230	232	238
7																	
8	Building Material																
9	Ready-Mix Concrete	126	133	143	163	185	207	226	227	235	248	245	252	254	244	250	255
10	Lumber for Reinf. Concrete	106	118	130	148	139	138	135	143	144	140	140	146	143	148	147	145
11	Steel Bars for Reinf. Concrete	145	147	166	206	215	216	203	190	198	202	205	205	227	232	222	199
12	Common Brick	130	136	159	190	232	247	255	257	256	246	258	270	292	320	320	316
13	Concrete Block	116	120	139	185	210	228	260	260	262	278	285	287	285	301	288	288
14																	
15	Labor																
16	Building Trades Labor	122	129	135	143	152	164	184	199	212	221	229	234	245	256	268	285
17	Heavy Constr. Trades Labor	123	131	137	146	155	165	184	199	210	220	229	233	244	255	264	279
18	Labor for Reinf. Concrete	122	130	137	147	157	166	184	198	210	220	227	232	242	253	262	277
19	Common Labor	124	133	141	152	163	172	190	204	214	223	231	234	243	254	265	280
20	Electricians	124	129	135	143	150	164	186	207	224	234	239	244	261	271	280	298
21	Pipefitters	122	131	135	143	154	170	192	207	219	228	236	242	248	263	276	290
22	Plumbers	122	131	136	141	152	168	191	205	217	226	235	241	242	257	279	294
23																	

L i n e	CONSTRUCTION, MATERIAL, AND LABOR															2005	
		1 9 9 2	1 9 9 3	1 9 9 4	1 9 9 5	1 9 9 6	1 9 9 7	1 9 9 8	1 9 9 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	Jan. 1	Jul. 1	
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	262	279	298	305	311	322	324	330	342	354	363	371	403	415	422	
3	Brick Building Construction	278	290	304	310	315	328	337	345	359	372	383	391	414	425	431	
4	Structural Steel Erected	260	278	305	317	325	334	336	344	360	372	375	385	433	443	452	
5	Reinf. Concrete (Ready-Mix)	268	279	291	296	304	312	320	327	336	350	364	372	389	402	409	
6	Reinf. Concrete (Plant-Mix)	247	265	281	279	286	298	296	299	304	316	324	328	351	364	373	
7																	
8	Building Material																
9	Ready-Mix Concrete	257	262	270	281	295	286	301	307	315	332	350	356	344	351	371	
10	Lumber for Reinf. Concrete	150	193	227	196	206	218	186	182	168	179	164	153	182	182	215	
11	Steel Bars for Reinf. Concrete	194	212	234	236	236	250	246	229	225	224	221	243	296	348	360	
12	Common Brick	315	310	313	315	311	335	369	384	412	426	426	427	429	429	439	
13	Concrete Block	288	263	262	258	258	285	306	332	354	365	381	384	394	406	406	
14																	
15	Labor																
16	Building Trades Labor	296	307	318	326	331	344	353	362	376	392	412	424	442	458	458	
17	Heavy Constr. Trades Labor	291	300	311	319	325	337	348	358	372	386	402	411	430	446	446	
18	Labor for Reinf. Concrete	289	297	308	314	320	333	343	354	366	382	400	407	426	439	439	
19	Common Labor	293	303	315	315	327	338	349	359	376	389	400	407	421	428	428	
20	Electricians	309	324	336	343	353	365	377	390	401	416	441	454	475	497	497	
21	Pipefitters	305	317	323	335	342	352	361	374	388	409	423	435	470	488	488	
22	Plumbers	305	320	330	339	348	355	363	368	385	405	425	438	455	469	469	
23																	

Appendix A-5.1 (WAD)

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		2006		2007		2008		2009		2010		2011		2012		2013	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	431	436	446	472	493	501	505	486	497	498	515	515	524	527	537	534
3	Brick Building Construction	441	443	457	472	492	497	506	494	506	507	521	518	530	532	542	539
4	Structural Steel Erected	462	471	480	534	550	563	555	509	511	511	531	532	538	542	558	553
5	Reinf. Concrete (Ready-Mix)	414	418	434	446	469	476	484	484	500	506	516	517	525	526	527	527
6	Reinf. Concrete (Plant-Mix)	374	376	382	394	413	422	429	428	443	446	457	457	464	467	470	468
7																	
8	Building Material																
9	Ready-Mix Concrete	371	379	382	425	425	425	429	430	430	437	431	439	441	441	436	436
10	Lumber for Reinf. Concrete	195	195	150	164	157	162	162	159	158	149	147	152	150	165	170	168
11	Steel Bars for Reinf. Concrete	324	361	380	420	398	490	334	326	358	416	417	406	393	391	365	356
12	Common Brick	439	439	457	457	460	460	460	453	453	453	453	434	448	451	458	452
13	Concrete Block	428	450	460	386	390	390	390	390	443	432	430	432	428	428	445	445
14																	
15	Labor																
16	Building Trades Labor	478	478	499	499	527	527	550	550	572	572	590	590	607	607	619	619
17	Heavy Constr. Trades Labor	459	459	483	483	517	517	542	542	564	564	584	584	596	596	605	605
18	Labor for Reinf. Concrete	452	452	476	476	512	512	541	541	562	562	579	579	591	591	598	598
19	Common Labor	436	436	475	475	510	510	550	550	572	572	590	590	604	604	604	604
20	Electricians	512	512	543	543	564	564	582	582	615	615	632	632	665	665	674	674
21	Pipefitters	514	514	526	526	566	566	590	590	607	607	642	642	658	658	668	668
22	Plumbers	502	502	520	520	545	545	580	580	597	597	610	610	623	623	634	634
23																	

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		2014		2015		2016		2017		2018		2019		2020		2021	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	546	549	557	549	552	558	569	576	589	611	611	605	617	613	653	723
3	Brick Building Construction	550	552	585	580	586	589	604	608	633	647	647	643	664	662	692	735
4	Structural Steel Erected	561	567	568	555	549	556	561	569	579	617	618	604	609	594	652	762
5	Reinf. Concrete (Ready-Mix)	541	543	556	554	564	567	581	585	602	609	611	608	625	629	650	685
6	Reinf. Concrete (Plant-Mix)	482	482	497	490	497	505	519	527	541	561	553	551	565	568	599	666
7																	
8	Building Material																
9	Ready-Mix Concrete	441	452	455	461	471	471	481	485	488	488	489	488	492	514	521	537
10	Lumber for Reinf. Concrete	174	170	188	182	178	204	222	240	244	309	255	249	243	259	330	525
11	Steel Bars for Reinf. Concrete	363	373	368	326	288	307	316	349	342	393	413	381	333	325	342	609
12	Common Brick	449	449	617	617	618	618	636	637	725	725	709	709	757	757	765	765
13	Concrete Block	444	499	505	485	483	429	427	411	411	443	429	461	462	461	463	504
14																	
15	Labor																
16	Building Trades Labor	636	636	646	646	660	660	678	678	696	696	707	707	732	732	755	755
17	Heavy Constr. Trades Labor	620	620	640	640	659	659	673	673	696	696	705	705	732	732	754	754
18	Labor for Reinf. Concrete	616	616	633	633	651	651	666	666	690	690	693	693	723	723	745	745
19	Common Labor	620	620	644	644	661	661	674	674	705	705	712	712	750	750	777	777
20	Electricians	691	691	702	702	724	724	731	731	753	753	775	775	787	787	815	815
21	Pipefitters	694	694	704	704	717	717	738	738	755	755	768	768	780	780	796	796
22	Plumbers	655	655	668	668	674	674	696	696	716	716	734	734	751	751	776	776
23																	

Appendix A-5.1 (WAD)

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		2022		2023		2024		2025		2026		2027		2028		2029	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Building Construction																
2	Reinf. Conc. Bldg. Construction	802	794														
3	Brick Building Construction	850	848														
4	Structural Steel Erected	946	886														
5	Reinf. Concrete (Ready-Mix)	707	730														
6	Reinf. Concrete (Plant-Mix)	664	706														
7																	
8	Building Material																
9	Ready-Mix Concrete	554	632														
10	Lumber for Reinf. Concrete	405	579														
11	Steel Bars for Reinf. Concrete	781	767														
12	Common Brick	1198	1198														
13	Concrete Block	553	633														
14																	
15	Labor																
16	Building Trades Labor	779	779														
17	Heavy Constr. Trades Labor	778	778														
18	Labor for Reinf. Concrete	762	762														
19	Common Labor	801	801														
20	Electricians	848	848														
21	Pipefitters	843	843														
22	Plumbers	813	813														
23																	

L i n e	CONSTRUCTION, MATERIAL, AND LABOR	2030		2031		2032		2033		2034		2035		2036		2037	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Building Construction																
2	Reinf. Conc. Bldg. Construction																
3	Brick Building Construction																
4	Structural Steel Erected																
5	Reinf. Concrete (Ready-Mix)																
6	Reinf. Concrete (Plant-Mix)																
7																	
8	Building Material																
9	Ready-Mix Concrete																
10	Lumber for Reinf. Concrete																
11	Steel Bars for Reinf. Concrete																
12	Common Brick																
13	Concrete Block																
14																	
15	Labor																
16	Building Trades Labor																
17	Heavy Constr. Trades Labor																
18	Labor for Reinf. Concrete																
19	Common Labor																
20	Electricians																
21	Pipefitters																
22	Plumbers																
23																	

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS														
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		1	1	1	1	1	1	1	2	2	2	2	2	2	2	
		2	3	4	5	6	7	8	9	0	1	2	3	4	5	
1	Boilers	6	6	6	7	8	13	17	15	16	14	12	14	15	15	
2	Coal & Ash Handling Equipment	12	12	12	12	19	31	29	20	28	24	21	23	23	21	
3	Pumps	9	9	9	12	14	16	18	18	18	17	16	16	16	17	
4	Steam Pipe	17	17	17	12	18	39	44	35	37	35	34	36	37	37	
5	Cranes	6	6	6	7	7	7	7	8	8	9	9	9	9	10	
6	Regulators	32	32	32	32	32	39	47	45	49	50	49	50	53	52	
7	Switchboards	20	20	20	20	21	23	26	35	44	49	43	40	43	43	
8	Power Transformers	23	23	23	23	23	32	41	41	49	48	42	43	46	46	
9	Oil Switches	27	27	27	27	27	30	38	45	49	53	50	50	51	51	
10	Motors	21	21	21	21	21	28	31	37	42	43	34	29	29	29	
11	Line Transformers	48	48	48	48	48	51	69	72	77	79	69	67	69	68	
12	Meters-Electric	37	37	37	37	37	41	46	51	53	57	53	50	50	48	
13	Treated Pine Poles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	Standard Cross Arms	7	7	7	7	7	9	10	12	12	11	12	12	12	13	
15	Standard Galv. Steel Guy Wire	12	12	12	14	15	19	22	23	22	22	21	21	20	20	
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	Mercury Luminaires w/Standard	-	-	-	-	-	-	-	-	-	-	-	-	27	26	
19	Power Wire & Control Cable	23	23	23	30	36	42	48	51	49	37	29	33	31	34	
20	Overhead Conductor-Transmission	28	26	23	25	45	49	54	53	51	31	28	32	31	32	
21	Underground Conductor-Transmission	15	13	12	12	19	22	25	27	26	21	21	26	23	23	
22	Overhead Conductor-Distribution	25	23	20	23	40	43	48	47	45	28	25	28	28	29	
23	Underground Conductor-Distribution	16	15	14	14	22	25	28	30	29	22	22	28	25	25	
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	Condensers & Tubes	7	7	7	7	11	13	20	21	21	20	17	17	18	18	
26	Turbo-Generators	9	9	9	9	13	13	17	18	21	23	20	19	19	19	
27																
28	Gas Compressors	18	18	18	18	18	19	25	25	27	26	25	25	25	25	
29	Gas Transmission Line Pipe	23	24	23	24	34	44	44	45	44	43	40	41	43	43	
30	Steel Distribution Pipe	15	16	16	17	24	36	40	36	34	32	28	30	31	31	
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	Meters-Gas	17	18	18	18	19	23	33	33	32	33	30	30	28	27	
33	House Regulators	24	25	25	25	26	31	47	46	45	45	41	41	39	37	
34																
35	Cast Iron Pipe	16	17	16	17	23	40	44	48	53	44	39	45	47	40	
36	Cast Iron Fittings	10	10	10	13	13	24	27	25	34	29	25	25	25	27	
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	Chemical Feeders-Small	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	Chemical Feeders-Large	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	Gate Valves	15	15	15	17	17	17	24	24	30	28	25	29	29	27	
41	Meter Yokes	24	24	24	24	24	24	29	29	31	31	29	29	29	29	
42	Corporation Stops	27	27	27	27	27	27	25	25	25	25	25	25	24	24	
43	Curb Stops	20	20	20	20	20	20	22	22	22	22	22	22	21	21	
44	Hydrants	23	23	23	23	23	23	23	24	27	27	23	26	27	26	
45	Meters-Water	23	23	23	23	26	29	35	37	37	37	37	37	37	37	
46																
47																
48																
49																
50	Construction Equipment	-	-	-	11	15	19	26	28	30	22	19	23	21	22	
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9
		2	2	2	2	3	3	3	3	3	3	3	3	3	
		6	7	8	9	0	1	2	3	4	5	6	7	8	9
1	Boilers	15	15	14	14	14	14	12	12	15	15	16	18	19	20
2	Coal & Ash Handling Equipment	21	20	20	20	19	17	16	17	20	20	20	21	20	20
3	Pumps	19	19	19	20	20	19	18	18	19	19	19	21	22	22
4	Steam Pipe	37	37	37	36	36	36	35	32	31	31	32	36	35	35
5	Cranes	10	10	11	11	11	11	10	10	10	10	10	10	10	11
6	Regulators	42	41	40	41	42	43	42	43	48	48	48	52	53	53
7	Switchboards	44	44	45	48	48	47	43	43	48	48	48	52	53	53
8	Power Transformers	46	43	41	42	40	40	39	40	46	47	47	50	52	52
9	Oil Switches	51	49	49	51	53	52	51	55	59	59	59	63	65	65
10	Motors	29	28	28	29	29	29	29	30	33	32	32	32	32	32
11	Line Transformers	63	59	58	62	61	59	57	59	61	62	62	66	67	67
12	Meters-Electric	48	48	48	48	48	48	48	50	54	55	55	55	55	55
13	Treated Pine Poles	28	27	26	25	24	23	21	22	23	24	23	24	23	23
14	Standard Cross Arms	10	9	9	9	9	8	8	9	10	11	11	12	12	12
15	Standard Galv. Steel Guy Wire	18	17	16	16	15	14	14	15	17	17	17	18	19	18
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Mercury Luminaires w/Standard	26	23	26	27	28	29	29	29	30	30	30	30	30	30
19	Power Wire & Control Cable	33	30	27	29	26	21	19	23	26	27	29	35	29	26
20	Overhead Conductor-Transmission	29	27	32	38	26	22	19	23	28	27	29	32	27	27
21	Underground Conductor-Transmission	22	21	23	27	20	19	19	21	23	23	25	27	24	24
22	Overhead Conductor-Distribution	26	24	28	34	23	19	17	20	25	24	26	28	24	24
23	Underground Conductor-Distribution	24	22	25	29	22	21	20	22	25	25	27	29	26	26
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Condensers & Tubes	18	16	15	19	20	19	18	19	21	24	24	27	27	27
26	Turbo-Generators	19	19	20	21	22	22	21	22	25	25	26	29	30	30
27															
28	Gas Compressors	24	23	24	24	24	24	24	24	24	24	23	23	23	23
29	Gas Transmission Line Pipe	43	43	43	43	43	43	42	35	35	35	34	35	34	34
30	Steel Distribution Pipe	31	31	31	31	30	29	29	26	29	29	26	28	26	25
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	Meters-Gas	27	27	27	27	27	26	25	25	25	25	25	26	26	26
33	House Regulators	37	38	38	38	37	36	34	34	34	34	34	35	37	40
34															
35	Cast Iron Pipe	40	34	29	30	30	28	25	30	34	35	36	39	39	38
36	Cast Iron Fittings	27	25	25	25	24	21	19	20	22	23	23	23	24	24
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Chemical Feeders-Small	18	19	22	22	20	15	17	17	17	17	17	17	17	17
39	Chemical Feeders-Large	-	-	-	-	-	-	-	-	-	12	12	13	13	13
40	Gate Valves	26	26	28	28	28	24	23	23	22	22	23	25	26	26
41	Meter Yokes	29	29	29	29	29	29	28	28	28	28	28	28	29	29
42	Corporation Stops	24	24	24	24	24	24	24	22	21	21	21	21	21	21
43	Curb Stops	21	21	21	21	21	21	21	21	21	21	21	21	21	21
44	Hydrants	24	24	25	25	25	23	23	23	20	22	22	24	25	25
45	Meters-Water	37	37	37	37	37	37	37	35	26	26	26	31	32	32
46															
47															
48															
49															
50	Construction Equipment	21	22	21	22	22	20	19	19	20	21	21	23	23	23
51															
52															
53															
54															
55															
56															

Appendix A-5.1 (WAD)

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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9
		4	4	4	4	4	4	4	4	4	4	5	5	5	
		0	1	2	3	4	5	6	7	8	9	0	1	2	3
1	Boilers	20	21	21	21	21	21	22	25	31	36	37	41	41	43
2	Coal & Ash Handling Equipment	20	23	25	25	24	24	29	35	42	44	47	50	51	55
3	Pumps	22	23	24	24	24	24	26	32	35	37	40	47	47	48
4	Steam Pipe	35	35	35	35	35	35	37	42	45	50	52	53	53	55
5	Cranes	11	11	11	11	12	17	20	23	26	29	31	33	35	38
6	Regulators	53	53	53	53	52	51	57	63	65	69	70	74	74	81
7	Switchboards	53	53	51	50	45	44	50	58	59	59	62	72	72	77
8	Power Transformers	52	52	51	49	46	45	50	60	62	67	70	78	78	83
9	Oil Switches	65	65	65	65	59	58	67	78	79	79	89	102	102	110
10	Motors	31	32	33	33	31	32	37	45	46	49	53	63	63	66
11	Line Transformers	67	69	68	64	64	64	72	90	93	96	100	113	113	121
12	Meters-Electric	55	55	55	55	55	55	61	69	74	80	80	80	78	81
13	Treated Pine Poles	23	24	27	28	33	39	37	41	43	43	42	44	46	49
14	Standard Cross Arms	13	16	17	19	22	23	25	35	37	34	36	41	42	42
15	Standard Galv. Steel Guy Wire	17	17	17	18	18	18	19	29	35	38	40	42	43	51
16	Fibre Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	Plastic Conduit	-	-	-	-	-	-	-	-	-	-	-	-	179	170
18	Mercury Luminaires w/Standard	30	30	31	31	31	31	32	40	44	48	47	53	52	51
19	Power Wire & Control Cable	31	39	40	40	40	40	48	56	65	66	66	75	77	74
20	Overhead Conductor-Transmission	29	28	31	32	32	32	40	48	52	48	52	59	63	69
21	Underground Conductor-Transmission	25	29	30	29	28	28	34	41	50	56	56	59	61	59
22	Overhead Conductor-Distribution	26	25	27	28	28	28	35	43	46	43	46	52	56	61
23	Underground Conductor-Distribution	27	31	32	32	31	31	36	44	54	59	59	63	64	64
24	Service Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	Condensers & Tubes	27	27	27	27	26	27	30	32	33	36	37	40	40	43
26	Turbo-Generators	30	30	30	30	30	31	36	44	47	49	49	54	54	58
27															
28	Gas Compressors	24	25	27	27	26	28	31	31	35	40	40	41	42	43
29	Gas Transmission Line Pipe	34	34	34	34	34	34	36	41	44	48	50	51	52	54
30	Steel Distribution Pipe	25	25	25	25	25	25	28	33	37	41	43	46	47	52
31	Plastic Pipe	-	-	-	-	-	-	-	-	-	-	-	-	175	175
32	Meters-Gas	26	26	26	26	26	26	33	41	42	45	48	55	55	55
33	House Regulators	48	48	48	48	48	48	53	63	64	68	69	74	74	74
34															
35	Cast Iron Pipe	39	39	40	39	39	40	45	58	69	68	67	73	73	73
36	Cast Iron Fittings	24	26	27	27	27	28	33	42	49	48	48	54	56	59
37	Ductile Iron Pipe	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	Chemical Feeders-Small	17	17	17	17	17	18	22	26	31	34	38	40	40	40
39	Chemical Feeders-Large	13	14	15	15	16	19	20	24	29	35	40	42	42	42
40	Gate Valves	26	28	29	29	29	29	34	39	42	45	52	57	57	57
41	Meter Yokes	29	29	30	30	30	31	37	39	40	39	41	48	48	48
42	Corporation Stops	22	22	23	23	23	24	31	36	37	37	37	45	45	45
43	Curb Stops	22	23	23	23	23	25	31	36	38	37	38	45	45	45
44	Hydrants	25	27	27	27	27	27	32	36	39	43	50	55	55	55
45	Meters-Water	33	35	37	37	37	37	40	42	48	52	59	61	61	65
46															
47															
48															
49															
50	Construction Equipment	24	25	28	29	29	29	34	37	39	40	42	45	46	49
51															
52															
53															
54															
55															
56															

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9
		5	5	5	5	5	5	6	6	6	6	6	6	6	
		4	5	6	7	8	9	0	1	2	3	4	5	6	7
1	Boilers	45	47	54	61	63	65	65	66	66	66	68	70	71	74
2	Coal & Ash Handling Equipment	56	58	68	76	77	79	77	72	72	72	73	73	74	76
3	Pumps	49	50	55	56	56	62	68	68	69	69	70	70	74	77
4	Steam Pipe	56	57	61	67	69	71	71	71	71	71	73	73	73	74
5	Cranes	40	43	45	47	49	52	54	55	55	55	56	56	58	64
6	Regulators	83	85	98	105	108	108	108	96	96	90	87	84	83	84
7	Switchboards	79	81	96	105	108	106	98	81	78	77	77	78	82	90
8	Power Transformers	85	87	100	103	107	103	95	88	84	76	81	84	87	91
9	Oil Switches	112	110	115	131	136	132	109	75	74	64	70	82	80	88
10	Motors	67	68	79	89	93	96	92	87	86	85	85	87	87	88
11	Line Transformers	123	123	127	135	130	125	122	118	107	100	100	101	101	105
12	Meters-Electric	83	79	82	87	89	92	92	91	90	89	89	88	88	89
13	Treated Pine Poles	51	51	55	59	60	57	57	56	56	56	56	56	58	61
14	Standard Cross Arms	42	42	49	50	47	46	46	44	44	44	44	45	47	46
15	Standard Galv. Steel Guy Wire	54	55	58	62	63	63	63	63	63	63	63	63	63	63
16	Fibre Conduit	-	-	-	-	-	-	82	86	86	86	86	84	76	71
17	Plastic Conduit	170	157	159	159	154	154	154	150	146	146	143	139	141	136
18	Mercury Luminaires w/Standard	59	59	60	66	68	68	68	67	67	66	67	66	72	82
19	Power Wire & Control Cable	71	68	72	65	50	50	40	38	40	40	44	55	67	72
20	Overhead Conductor-Transmission	67	73	80	81	79	72	73	73	74	63	69	73	76	78
21	Underground Conductor-Transmission	60	65	72	65	63	65	66	64	63	63	69	77	77	79
22	Overhead Conductor-Distribution	59	67	72	63	58	63	64	62	62	62	64	71	75	78
23	Underground Conductor-Distribution	64	71	78	69	67	70	71	69	67	68	74	82	83	85
24	Service Cable	-	-	93	89	74	69	68	69	67	62	66	68	71	74
25	Condensers & Tubes	44	45	48	53	56	56	56	56	56	57	61	65	71	75
26	Turbo-Generators	59	61	72	80	84	84	78	72	70	70	71	72	73	
27															
28	Gas Compressors	44	46	49	54	58	61	61	61	61	64	68	73	74	78
29	Gas Transmission Line Pipe	55	56	59	65	67	69	69	69	69	69	71	71	71	72
30	Steel Distribution Pipe	54	56	60	68	69	71	71	71	71	71	71	71	71	73
31	Plastic Pipe	154	147	146	142	140	139	137	133	132	132	128	123	126	126
32	Meters-Gas	55	56	63	66	71	71	71	73	79	79	79	79	86	88
33	House Regulators	74	74	74	76	80	80	80	81	82	82	82	80	80	80
34															
35	Cast Iron Pipe	79	80	86	91	95	95	95	95	95	95	95	95	95	95
36	Cast Iron Fittings	62	64	67	69	72	74	74	74	73	72	72	72	72	75
37	Ductile Iron Pipe	-	-	-	-	-	-	-	96	96	96	96	96	96	96
38	Chemical Feeders-Small	40	41	45	48	49	54	60	60	63	63	64	69	73	77
39	Chemical Feeders-Large	42	44	54	61	68	68	68	68	71	72	71	70	72	79
40	Gate Valves	55	51	57	59	58	58	58	59	62	63	62	62	68	72
41	Meter Yokes	51	57	64	61	59	59	62	63	65	65	66	70	75	77
42	Corporation Stops	46	54	59	59	59	60	62	62	65	65	66	71	79	81
43	Curb Stops	46	54	59	59	59	60	62	63	65	65	67	71	79	82
44	Hydrants	55	52	58	59	59	59	59	59	59	59	59	59	61	66
45	Meters-Water	67	70	77	78	78	78	78	78	84	87	87	93	101	101
46															
47															
48															
49															
50	Construction Equipment	49	51	55	59	62	64	65	67	67	68	70	71	73	76
51															
52															
53															
54															
55															
56															

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9
		6	6	7	7	7	7	7	7	7	7	7	7	8	
		8	9	0	1	2	3	4	5	6	7	8	9	0	1
1	Boilers	76	78	83	89	94	100	119	143	159	172	186	203	221	245
2	Coal & Ash Handling Equipment	79	84	88	93	95	100	124	150	154	162	175	192	213	225
3	Pumps	78	80	85	89	93	100	127	154	177	183	195	212	235	259
4	Steam Pipe	78	82	86	92	98	100	112	131	143	155	178	206	223	236
5	Cranes	68	72	78	82	88	100	122	139	147	171	186	215	237	267
6	Regulators	84	87	90	92	97	100	128	150	165	170	174	179	189	206
7	Switchboards	92	93	94	96	97	100	131	196	212	222	234	238	261	295
8	Power Transformers	93	95	97	95	93	100	129	157	162	172	182	193	210	223
9	Oil Switches	96	92	93	93	95	100	123	140	143	174	186	195	203	229
10	Motors	89	94	100	104	100	100	110	155	167	186	186	188	195	210
11	Line Transformers	109	106	105	104	100	100	110	133	136	147	158	166	165	194
12	Meters-Electric	92	95	98	101	101	100	107	126	135	140	144	148	144	160
13	Treated Pine Poles	62	66	69	73	77	100	150	205	192	190	206	234	265	289
14	Standard Cross Arms	44	50	65	60	58	100	162	157	146	155	161	223	244	252
15	Standard Galv. Steel Guy Wire	63	64	72	86	97	100	133	153	151	162	178	205	214	244
16	Fibre Conduit	72	78	83	82	85	100	119	130	133	149	173	203	218	235
17	Plastic Conduit	116	105	100	98	100	100	118	133	129	144	161	187	199	190
18	Mercury Luminaires w/Standard	74	78	94	101	102	100	125	173	194	211	234	263	288	314
19	Power Wire & Control Cable	81	86	84	74	86	100	115	95	97	95	101	109	135	142
20	Overhead Conductor-Transmission	75	84	97	107	103	100	121	167	204	220	189	201	232	250
21	Underground Conductor-Transmission	76	82	86	83	89	100	149	142	142	154	148	188	238	259
22	Overhead Conductor-Distribution	75	84	97	107	102	100	121	166	203	220	192	210	246	257
23	Underground Conductor-Distribution	76	86	94	92	100	100	135	130	132	140	148	196	231	222
24	Service Cable	71	77	92	98	99	100	105	124	126	131	149	183	221	217
25	Condensers & Tubes	80	84	89	94	99	100	109	128	142	157	171	189	209	229
26	Turbo-Generators	72	75	81	89	96	100	111	131	144	158	170	188	206	230
27															
28	Gas Compressors	84	88	91	91	90	100	120	150	161	172	188	213	237	265
29	Gas Transmission Line Pipe	75	80	83	89	98	100	122	145	172	187	212	225	253	290
30	Steel Distribution Pipe	73	76	82	89	97	100	127	142	155	170	194	213	225	254
31	Plastic Pipe	123	111	98	96	100	100	112	116	120	125	129	142	152	142
32	Meters-Gas	88	89	94	100	100	100	111	128	131	136	139	143	149	158
33	House Regulators	81	83	92	98	100	100	106	125	132	136	144	171	201	210
34															
35	Cast Iron Pipe	95	95	96	100	100	100	153	178	180	183	195	201	217	235
36	Cast Iron Fittings	77	80	87	99	99	100	144	142	148	152	163	173	194	209
37	Ductile Iron Pipe	96	96	97	100	100	100	153	182	186	189	201	207	215	228
38	Chemical Feeders-Small	81	81	86	90	92	100	126	180	209	230	249	257	287	316
39	Chemical Feeders-Large	80	81	87	92	94	100	125	177	194	195	201	212	232	249
40	Gate Valves	74	74	79	91	96	100	127	160	191	197	220	252	270	289
41	Meter Yokes	79	87	93	95	95	100	132	139	160	227	246	262	296	320
42	Corporation Stops	85	90	96	99	99	100	126	133	133	136	139	154	168	178
43	Curb Stops	86	90	96	99	99	100	126	133	135	140	146	161	177	187
44	Hydrants	71	76	84	94	95	100	143	185	214	229	261	279	293	315
45	Meters-Water	101	107	108	108	106	100	93	93	98	101	105	108	122	127
46															
47															
48															
49															
50	Construction Equipment	80	84	88	93	95	100	117	141	153	164	178	197	222	246
51															
52															
53															
54															
55															
56															

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Appendix A-5.1 (WAD)

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS														
		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
		8	8	8	8	8	8	8	9	9	9	9	9	9	9	
		2	3	4	5	6	7	8	9	0	1	2	3	4	5	
1	Boilers	264	273	283	292	298	307	330	344	364	380	385	404	413	425	
2	Coal & Ash Handling Equipment	224	229	240	246	250	255	270	289	296	300	302	308	318	325	
3	Pumps	276	281	284	292	296	300	310	327	342	353	361	391	406	419	
4	Steam Pipe	254	226	215	215	215	231	271	264	241	229	222	199	199	216	
5	Cranes	302	328	344	384	411	423	442	458	474	482	490	537	598	615	
6	Regulators	216	225	227	229	231	236	239	248	253	257	257	256	260	241	
7	Switchboards	318	317	319	333	338	343	366	398	429	439	449	499	496	572	
8	Power Transformers	231	226	229	237	242	253	264	291	327	337	343	360	371	388	
9	Oil Switches	279	280	275	271	268	273	336	380	402	411	399	358	369	395	
10	Motors	224	250	260	261	257	266	285	339	365	357	348	376	478	495	
11	Line Transformers	208	210	211	212	213	211	212	221	224	222	223	226	230	225	
12	Meters-Electric	188	201	200	202	207	205	187	175	174	186	190	189	174	169	
13	Treated Pine Poles	291	280	276	283	289	284	289	300	310	323	332	367	416	445	
14	Standard Cross Arms	249	240	243	230	228	226	250	291	333	366	381	419	441	464	
15	Standard Galv. Steel Guy Wire	254	236	227	233	233	235	249	253	252	252	251	253	254	255	
16	Fibre Conduit	175	210	231	225	221	225	301	470	379	260	230	198	222	228	
17	Plastic Conduit	158	183	197	189	188	199	280	409	366	316	289	237	251	260	
18	Mercury Luminaires w/Standard	333	326	343	358	352	321	321	334	345	353	361	389	408	430	
19	Power Wire & Control Cable	132	131	123	107	110	123	137	139	136	130	126	119	121	127	
20	Overhead Conductor-Transmission	247	271	246	242	242	218	359	366	355	372	379	334	352	399	
21	Underground Conductor-Transmission	270	268	256	242	277	281	298	328	405	461	469	477	477	485	
22	Overhead Conductor-Distribution	252	266	259	249	244	229	349	366	354	363	366	322	341	386	
23	Underground Conductor-Distribution	206	201	196	202	216	222	223	243	254	258	259	254	253	263	
24	Service Cable	207	198	229	209	194	201	250	285	271	264	258	227	240	271	
25	Condensers & Tubes	247	256	257	247	222	239	263	268	268	270	270	275	288	308	
26	Turbo-Generators	242	256	266	270	270	274	292	302	306	312	315	325	333	343	
27																
28	Gas Compressors	280	284	295	301	303	307	325	354	371	388	405	438	446	455	
29	Gas Transmission Line Pipe	315	271	262	254	265	272	301	298	269	257	250	233	235	243	
30	Steel Distribution Pipe	268	270	282	272	237	250	291	316	318	323	323	327	370	381	
31	Plastic Pipe	132	149	157	146	146	159	218	283	285	290	275	230	235	244	
32	Meters-Gas	158	146	147	158	166	165	170	177	185	190	190	191	189	190	
33	House Regulators	217	221	230	237	236	243	247	253	269	280	283	297	303	302	
34																
35	Cast Iron Pipe	234	254	247	265	244	244	266	282	278	275	275	275	278	266	
36	Cast Iron Fittings	216	232	229	240	259	289	296	317	324	324	324	350	377	370	
37	Ductile Iron Pipe	228	262	249	281	246	246	275	278	271	271	271	271	273	250	
38	Chemical Feeders-Small	341	353	358	366	373	379	398	410	424	430	432	444	453	453	
39	Chemical Feeders-Large	273	286	294	306	324	341	353	379	402	418	423	438	437	477	
40	Gate Valves	321	358	375	395	417	441	468	517	530	540	548	561	524	540	
41	Meter Yokes	336	389	389	383	394	399	445	470	478	507	516	551	566	603	
42	Corporation Stops	189	200	207	212	220	220	240	254	257	273	279	303	308	318	
43	Curb Stops	198	210	220	225	233	233	254	270	273	289	296	321	330	348	
44	Hydrants	352	384	385	414	439	456	480	521	558	560	560	559	561	577	
45	Meters-Water	128	141	148	135	135	137	140	143	152	160	173	195	175	200	
46																
47																
48																
49																
50	Construction Equipment	263	269	273	276	280	286	295	281	298	320	316	324	331	333	
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS															
												2005		2006		2007	
		1	1	1	1	2	2	2	2	2	2	Jan.	Jul.	Jan.	Jul.	Jan.	Jul.
		9	9	9	9	0	0	0	0	0	0	1	1	1	1	1	1
1	Boilers	433	443	452	460	467	474	481	489	517	535	550	565	578	590	604	
2	Coal & Ash Handling Equipment	328	333	344	351	353	357	359	362	397	426	426	425.4	431	441	453	
3	Pumps	440	476	496	510	528	524	525	544	557	567	575	592.3	602	620	640	
4	Steam Pipe	215	204	190	183	178	170	167	160	194	270	286	292	299	307	304	
5	Cranes	615	656	689	728	747	749	749	749	800	817	817	816.8	817	817	817	
6	Regulators	234	232	234	237	242	240	243	255	261	271	276	290.3	343	360	375	
7	Switchboards	620	656	662	689	749	813	892	983	1066	1111	1173	1227	1340	1447	1596	
8	Power Transformers	370	371	400	400	400	400	383	375	486	540	545	583.7	591	648	671	
9	Oil Switches	399	409	415	415	409	408	399	391	382	379	389	412	420	429	436	
10	Motors	475	467	476	497	533	535	541	543	610	691	695	685.7	658	683	601	
11	Line Transformers	219	206	210	210	209	217	223	225	237	250	258	298.8	345	397	405	
12	Meters-Electric	172	187	193	181	176	206	241	263	290	276	276	276	283	283	291	
13	Treated Pine Poles	463	473	471	473	471	489	505	515	534	541	554	562.3	601	600	604	
14	Standard Cross Arms	466	477	443	413	417	437	433	411	394	440	435	451.1	456	487	471	
15	Standard Galv. Steel Guy Wire	261	280	314	313	318	249	220	227	271	302	302	300.7	280	323	323	
16	Fibre Conduit	204	209	199	225	246	226	275	252	250	284	284	432.2	432	460	390	
17	Plastic Conduit	252	256	251	266	281	291	319	311	323	354	354	447.3	447	527	495	
18	Mercury Luminaires w/Standard	460	471	469	472	479	492	529	571	583	601	615	637.4	774	808	826	
19	Power Wire & Control Cable	121	121	119	112	110	108	103	99.8	112	132	137	159.5	187	263	265	
20	Overhead Conductor-Transmission	402	405	420	354	398	426	409	404	457	491	540	633.3	698	742	770	
21	Underground Conductor-Transmission	487	487	487	493	485	468	461	462	519	536	559	614.6	615	615	615	
22	Overhead Conductor-Distribution	386	387	399	345	381	403	388	387	437	467	515	600.3	648	692	715	
23	Underground Conductor-Distribution	266	263	265	268	270	257	245	239	264	295	308	342.2	343	457	459	
24	Service Cable	267	264	264	249	260	265	259	266	297	313	347	396	396	432	439	
25	Condensers & Tubes	305	306	309	290	284	287	291	304	388	439	433	447.3	465	466	506	
26	Turbo-Generators	348	364	369	371	387	372	380	395	397	411	400	401.8	424	440	452	
27																	
28	Gas Compressors	461	470	478	480	483	487	495	497	503	506	586	535.3	544	557	574	
29	Gas Transmission Line Pipe	269	272	273	267	263	258	256	257	377	449	452	440.4	460	525	482	
30	Steel Distribution Pipe	376	388	389	399	428	424	421	448	637	875	855	924.4	954	829	839	
31	Plastic Pipe	249	251	252	255	265	295	304	308	325	351	351	393	393	509	509	
32	Meters-Gas	192	196	196	191	202	209	202	193	183	185	184	187.6	197	205	231	
33	House Regulators	303	303	307	306	305	312	319	318	323	336	339	343.8	356	377	377	
34																	
35	Cast Iron Pipe	268	279	281	285	291	297	299	301	306	341	341	345.9	346	402	402	
36	Cast Iron Fittings	368	379	379	378	378	384	476	500	514	520	520	660.6	690	706	720	
37	Ductile Iron Pipe	251	268	270	279	290	292	292	292	276	274	274	283.2	283	327	327	
38	Chemical Feeders-Small	462	476	514	522	546	561	563	566	606	640	661	669.4	596	640	676	
39	Chemical Feeders-Large	493	506	537	569	562	581	612	612	597	576	576	586.2	544	531	570	
40	Gate Valves	553	592	611	630	651	685	691	691	704	718	718	718.4	720	720	720	
41	Meter Yokes	670	673	677	679	699	708	713	737	762	769	794	793.6	1111	1111	1169	
42	Corporation Stops	329	329	329	329	338	341	344	353	364	367	367	367.2	527	527	527	
43	Curb Stops	361	361	361	361	371	374	377	387	399	403	403	402.7	577	577	577	
44	Hydrants	625	795	840	874	909	961	970	970	980	989	989	989.2	1097	1097	1116	
45	Meters-Water	207	197	197	198	205	206	207	207	207	207	207	234.7	248	260	262	
46																	
47																	
48																	
49																	
50	Construction Equipment	336	351	380	385	389	391	396	402	414	427	443	448.3	461	463	470.6	
51																	
52																	
53																	
54																	
55																	
56																	

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Appendix A-5.1 (WAD)

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		2008		2009		2010		2011		2012		2013		2014	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	596	616	620	599	608	620	624	634	649	649	669	653	661	665
2	Coal & Ash Handling Equipment	478	537	543	513	499	503	522	536	550	559	562	563	580	581
3	Pumps	643	663	673	675	703	704	706	756	781	787	799	846	859	922
4	Steam Pipe	324	400	454	413	376	417	419	448	438	455	439	425	429	431
5	Cranes	817	899	899	899	899	899	899	899	899	899	899	965	965	1007
6	Regulators	401	427	389	390	402	408	410	418	415	428	422	428	441	425
7	Switchboards	1791	1954	2077	2218	2373	2504	2616	2757	2879	3034	3173	3319	3471	3594
8	Power Transformers	694	725	746	745	780	788	804	814	818	826	815	814	813	816
9	Oil Switches	437	455	460	461	469	475	480	483	483	485	485	488	498	500
10	Motors	635	674	696	719	717	695	713	770	777	782	804	837	849	851
11	Line Transformers	615	505	534	560	588	617	630	650	673	690	737	756	799	819
12	Meters-Electric	292	293	295	295	307	307	295	294	288	291	295	298	303	305
13	Treated Pine Poles	611	643	653	665	672	686	664	678	687	697	700	700	675	675
14	Standard Cross Arms	464	486	518	501	482	465	446	446	452	453	464	466	440	434
15	Standard Galv. Steel Guy Wire	351	381	548	536	550	405	405	405	404	423	423	488	458	486
16	Fibre Conduit	411	420	468	468	380	380	390	390	419	419	417	417	497	497
17	Plastic Conduit	522	526	609	609	463	463	468	468	521	521	477	477	478	478
18	Mercury Luminaires w/Standard	839	899	1024	1053	1087	972	990	1034	1052	1079	1061	1077	990	993
19	Power Wire & Control Cable	242	250	228	234	213	220	245	251	268	270	271	270	267	254
20	Overhead Conductor-Transmission	860	985	985	553	700	714	675	782	650	659	701	729	729	740
21	Underground Conductor-Transmission	877	927	919	929	906	885	973	971	977	1016	1026	1052	1083	1093
22	Overhead Conductor-Distribution	793	898	898	539	661	682	672	772	647	656	686	710	716	735
23	Underground Conductor-Distribution	499	541	631	609	515	518	563	577	621	647	617	654	631	645
24	Service Cable	472	510	511	390	430	460	516	579	497	505	502	512	530	562
25	Condensers & Tubes	496	603	516	462	473	525	527	575	580	566	567	528	536	549
26	Turbo-Generators	457	538	468	417	439	488	474	501	498	487	564	480	478	483
27															
28	Gas Compressors	581	603	621	626	625	631	633	656	662	677	674	692	693	707
29	Gas Transmission Line Pipe	502	604	600	510	444	506	510	525	586	616	542	535	626	627
30	Steel Distribution Pipe	833	1122	1019	929	911	987	1081	1123	1350	1327	1305	1276	1253	1266
31	Plastic Pipe	541	541	644	644	464	464	470	470	535	535	464	464	403	403
32	Meters-Gas	241	250	261	252	257	252	252	256	261	271	271	272	341	342
33	House Regulators	387	392	412	400	406	414	425	430	432	438	443	443	454	454
34															
35	Cast Iron Pipe	421	468	541	541	563	563	550	550	565	676	688	697	770	779
36	Cast Iron Fittings	783	837	897	909	986	987	961	961	1091	1120	1148	1168	1230	1395
37	Ductile Iron Pipe	363	363	485	485	521	521	500	500	524	524	545	545	575	575
38	Chemical Feeders-Small	817	819	831	880	880	880	907	908	1068	1086	1092	1203	1249	1249
39	Chemical Feeders-Large	676	683	654	700	700	700	633	715	753	770	774	803	805	805
40	Gate Valves	736	736	759	759	736	778	762	762	755	755	770	790	803	824
41	Meter Yokes	1169	1169	1202	1202	1202	1241	1241	1241	1323	1594	1594	1594	1594	1594
42	Corporation Stops	527	527	527	527	527	542	542	542	542	723	723	723	723	723
43	Curb Stops	577	577	577	577	577	582	582	582	582	739	739	739	739	739
44	Hydrants	1133	1133	1155	1155	1150	1081	1089	1089	1132	1132	1166	1189	1221	1339
45	Meters-Water	373	373	373	373	374	376	379	379	379	379	380	381	381	381
46															
47															
48															
49															
50	Construction Equipment	474	483	499	502	502	501	505	516	527	539	547	552	554	562
51															
52															
53															
54															
55															
56															

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		2015		2016		2017		2018		2019		2020		2021	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	669	691	697	698	700	681	683	707	710	739	738	743	745	768
2	Coal & Ash Handling Equipment	584	583	582	584	589	595	596	608	620	630	640	664	638	676
3	Pumps	958	963	1043	1076	1120	1244	1248	1345	1401	1492	1526	1639	1640	1690
4	Steam Pipe	417	416	404	411	421	415	407	462	483	468	481	469	492	546
5	Cranes	1007	1007	1007	1007	1007	1007	1041	1083	1108	1108	1141	1175	1222	1344
6	Regulators	416	406	396	403	412	416	420	430	436	437	442	436	445	496
7	Switchboards	3757	3760	3931	3930	4109	4300	4461	4629	4847	4852	5080	5367	5620	5892
8	Power Transformers	812	801	795	798	822	827	868	879	901	901	902	895	911	952
9	Oil Switches	500	502	502	501	501	503	505	507	511	521	530	533	539	550
10	Motors	859	857	869	869	893	883	910	917	937	1006	1023	1026	963	943
11	Line Transformers	854	856	884	882	918	946	982	1008	1048	1048	1086	1129	1170	1214
12	Meters-Electric	307	307	307	298	298	298	304	304	306	306	323	323	332	332
13	Treated Pine Poles	670	658	676	678	670	730	665	668	687	693	799	798	706	705
14	Standard Cross Arms	458	448	457	458	456	451	450	450	456	456	508	512	535	536
15	Standard Galv. Steel Guy Wire	486	486	486	486	515	515	515	515	541	541	623	623	671	671
16	Fibre Conduit	475	475	430	430	412	412	511	511	523	523	525	525	407	407
17	Plastic Conduit	479	479	468	468	452	452	514	514	521	521	549	549	611	611
18	Mercury Luminaires w/Standard	981	1018	986	981	998	942	964	1008	1130	1085	1188	1206	1046	1055
19	Power Wire & Control Cable	258	253	224	221	225	228	246	253	255	257	261	259	303	322
20	Overhead Conductor-Transmission	743	743	777	777	740	740	838	838	885	885	919	919	483	483
21	Underground Conductor-Transmission	1095	1103	1108	1108	1113	1180	1252	1271	1329	1329	1339	1385	1435	1613
22	Overhead Conductor-Distribution	747	750	768	768	741	745	785	801	818	834	868	868	539	540
23	Underground Conductor-Distribution	622	637	589	589	539	562	561	572	605	605	622	650	702	751
24	Service Cable	592	600	580	578	580	593	496	544	490	540	567	564	541	545
25	Condensers & Tubes	547	551	520	535	536	510	516	569	583	574	509	566	604	698
26	Turbo-Generators	485	551	538	561	579	506	507	537	560	548	462	562	607	742
27															
28	Gas Compressors	713	720	722	727	728	735	747	759	779	783	787	795	793	816
29	Gas Transmission Line Pipe	616	589	535	544	570	601	615	693	716	689	680	639	733	996
30	Steel Distribution Pipe	1243	1189	1088	1116	1175	1247	1218	1382	1432	1394	1590	1555	1564	2067
31	Plastic Pipe	403	403	403	403	394	394	410	410	413	413	447	447	559	559
32	Meters-Gas	372	372	388	388	442	442	475	477	511	511	489	490	469	469
33	House Regulators	469	469	481	481	487	487	533	533	558	565	559	559	549	549
34															
35	Cast Iron Pipe	758	748	731	731	809	808	867	868	878	881	912	877	885	839
36	Cast Iron Fittings	1278	1322	1380	1418	1478	1478	1481	1565	1627	1736	1883	1955	2130	2516
37	Ductile Iron Pipe	579	579	600	600	622	622	715	715	721	721	768	768	781	781
38	Chemical Feeders-Small	1316	1404	1471	1471	1496	1589	1618	1738	1792	1871	2019	2106	2176	2316
39	Chemical Feeders-Large	805	805	842	842	863	891	900	939	965	990	1080	1140	1145	1195
40	Gate Valves	814	814	868	868	825	825	771	789	812	832	863	863	1105	1145
41	Meter Yokes	1594	1594	1594	1594	1594	1706	1706	1706	1706	1768	1768	1821	1821	1958
42	Corporation Stops	723	723	723	723	723	723	723	723	773	861	861	887	887	953
43	Curb Stops	780	780	780	780	780	780	780	780	835	929	929	957	957	1029
44	Hydrants	1418	1591	1694	1694	1681	1681	1735	1759	1803	1830	1886	1886	2086	2143
45	Meters-Water	400	400	403	403	404	418	434	434	443	443	459	459	485	485
46															
47															
48															
49															
50	Construction Equipment	564	568	570	574	575	579	580	575	600	609	613	620	621	640
51															
52															
53															
54															
55															
56															

Appendix A-5.1 (WAD)

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		2022		2023		2024		2025		2026		2027		2028	
		Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Boilers	831	873												
2	Coal & Ash Handling Equipment	774	814												
3	Pumps	1821	2046												
4	Steam Pipe	649	701												
5	Cranes	1494	1757												
6	Regulators	547	612												
7	Switchboards	6250	7005												
8	Power Transformers	1032	1101												
9	Oil Switches	571	630												
10	Motors	1065	1188												
11	Line Transformers	1293	1405												
12	Meters-Electric	375	375												
13	Treated Pine Poles	766	757												
14	Standard Cross Arms	564	564												
15	Standard Galv. Steel Guy Wire	610	769												
16	Fibre Conduit	627	627												
17	Plastic Conduit	708	708												
18	Mercury Luminaires w/Standard	1154	1267												
19	Power Wire & Control Cable	382	411												
20	Overhead Conductor-Transmission	605	605												
21	Underground Conductor-Transmission	1902	1864												
22	Overhead Conductor-Distribution	628	630												
23	Underground Conductor-Distribution	816	695												
24	Service Cable	540	546												
25	Condensers & Tubes	785	835												
26	Turbo-Generators	859	799												
27															
28	Gas Compressors	853	952												
29	Gas Transmission Line Pipe	1185	1227												
30	Steel Distribution Pipe	2304	2276												
31	Plastic Pipe	603	603												
32	Meters-Gas	529	539												
33	House Regulators	650	650												
34															
35	Cast Iron Pipe	876	948												
36	Cast Iron Fittings	3004	3279												
37	Ductile Iron Pipe	781	781												
38	Chemical Feeders-Small	2503	2774												
39	Chemical Feeders-Large	1307	1452												
40	Gate Valves	1260	1365												
41	Meter Yokes	2193	2193												
42	Corporation Stops	1068	1068												
43	Curb Stops	1152	1152												
44	Hydrants	2219	2454												
45	Meters-Water	803	826												
46															
47															
48															
49															
50	Construction Equipment	683	721												
51															
52															
53															
54															
55															
56															

Cost Trends Of

Water Utility

Construction

COST TREND TABLES
1912 to July 1, 2022

Appendix A-5.1 (WAD)

W-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A U C	COST INDEX NUMBERS														
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
			9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
1	Source of Supply Plant																
2	Collecting & Impounding Res.	305	7	7	7	7	9	13	15	15	17	16	16	16	16		
3																	
4																	
5																	
6																	
7	Pumping Plant																
8	Structures & Improvements	304	8	8	8	9	11	16	17	18	20	18	18	18	19		
9	Electric Pumping Equipment	311	-	-	15	15	17	20	22	24	24	23	21	22	23		
10																	
11																	
12																	
13																	
14	Water Treatment Plant																
15	Structures & Improvements	304	8	8	8	9	11	16	17	18	20	18	18	18	19		
16	Large Treatment Plant Equip.	320	9	9	9	9	11	14	16	17	20	19	18	18	20		
17	Small Treatment Plant Equip.	320	10	10	10	10	13	17	19	19	22	20	20	20	21		
18																	
19																	
20																	
21																	
22	Transmission Plant																
23	Steel Reservoirs	330	4	4	4	12	15	17	19	20	15	13	12	13	13		
24	Elevated Steel Tanks	330	4	4	4	11	14	16	18	19	16	13	11	12	11		
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-		
26																	
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-		
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-		
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-		
30																	
31																	
32																	
33	Distribution Plant																
34	Mains-Average All Types	331	9	10	8	9	11	16	19	20	22	22	20	21	22		
35	Cast Iron Mains	331	9	10	9	9	12	18	20	22	25	24	22	23	24		
36	Cement-Asbestos Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-		
37	Steel Mains	331	6	7	6	7	8	11	13	13	14	15	14	14	14		
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-		
39	Services Installed	333	6	6	5	6	6	9	10	11	12	13	12	12	13		
40	Meters	334	23	23	23	23	26	29	35	37	37	37	37	37	37		
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	-	-	-	-		
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	-	-	-	-		
43																	
44																	
45	Miscellaneous Items																
46	Flocculating Equipment-Installed		14	16	13	14	26	38	31	29	29	24	25	26	24		
47	Clarifier Equipment-Installed		-	-	-	-	-	-	-	-	-	-	-	-	-		
48	Filter Gallery Piping-Installed		8	8	8	8	10	14	16	18	20	18	17	18	19		
49																	
50																	
51																	
52																	
53																	
54																	
55																	
56																	

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS													
			1	1	1	1	1	1	1	1	1	1	1	1	1	1
			9	9	9	9	9	9	9	9	9	9	9	9	9	9
			2	2	2	2	3	3	3	3	3	3	3	3	3	
			6	7	8	9	0	1	2	3	4	5	6	7	8	9
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	17	17	17	17	17	16	14	14	15	15	15	17	17	17
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	19	18	18	18	17	16	15	15	16	16	16	18	18	18
9	Electric Pumping Equipment	311	23	23	23	22	22	22	22	23	24	24	25	26	26	26
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	19	18	18	18	17	16	15	15	16	16	16	18	18	18
16	Large Treatment Plant Equip.	320	20	20	20	20	20	19	17	17	18	18	18	20	20	20
17	Small Treatment Plant Equip.	320	20	20	20	20	20	19	17	17	19	19	19	21	21	21
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	12	12	12	12	11	10	9	9	12	11	12	14	14	14
24	Elevated Steel Tanks	330	11	10	10	10	10	9	8	8	10	10	11	12	13	13
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	21	21	20	20	20	20	18	18	19	19	20	21	22	22
35	Cast Iron Mains	331	23	21	20	21	21	20	18	18	20	20	21	23	24	24
36	Cement-Asbestos Mains	331	-	-	-	-	-	-	-	-	-	-	31	32	32	33
37	Steel Mains	331	15	15	15	16	16	16	14	13	14	14	14	16	16	16
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	13	13	13	14	14	14	13	11	12	13	13	14	14	14
40	Meters	334	37	37	37	37	37	37	37	35	26	26	26	31	32	32
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		23	22	22	22	21	20	20	20	21	21	23	26	25	25
47	Clarifier Equipment-Installed		-	-	-	-	-	-	-	-	-	-	-	17	23	24
48	Filter Gallery Piping-Installed		19	18	18	18	18	18	15	16	18	18	18	19	20	20
49																
50																
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

W-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS													
			1	1	1	1	1	1	1	1	1	1	1	1	1	1
			9	9	9	9	9	9	9	9	9	9	9	9	9	9
			4	4	4	4	4	4	4	4	4	4	5	5	5	5
			0	1	2	3	4	5	6	7	8	9	0	1	2	3
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	17	18	20	20	20	21	23	27	31	32	33	35	36	38
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	18	19	20	21	21	22	24	28	32	35	36	38	38	39
9	Electric Pumping Equipment	311	26	27	27	27	27	27	31	39	43	45	49	55	55	55
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	18	19	20	21	21	22	24	28	32	35	36	38	38	39
16	Large Treatment Plant Equip.	320	21	22	23	24	24	25	28	32	35	36	38	40	41	42
17	Small Treatment Plant Equip.	320	21	22	24	24	24	25	28	33	37	39	41	43	43	44
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	14	16	16	13	14	16	20	26	29	27	28	30	31	32
24	Elevated Steel Tanks	330	12	15	15	14	15	14	17	23	26	25	26	28	29	31
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	-	-	-	-	-	-	-	-	-	-	-	42	43	45
28	Steel Mains	331	-	-	-	-	-	-	-	-	-	-	-	40	40	43
29	Concrete Cylinder Mains	331	-	-	-	-	-	-	-	-	-	-	-	44	45	47
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	23	23	24	25	25	26	29	35	41	42	43	45	47	48
35	Cast Iron Mains	331	24	25	27	27	28	28	32	39	46	46	48	50	51	53
36	Cement-Asbestos Mains	331	33	34	36	36	37	37	44	49	59	61	62	64	65	67
37	Steel Mains	331	16	17	18	18	18	19	21	24	28	29	31	32	34	36
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	14	15	16	16	17	17	19	22	25	27	28	29	31	33
40	Meters	334	33	35	37	37	37	37	40	42	48	52	59	61	61	65
41	Meter Installations	334	-	-	-	-	-	-	-	-	-	29	31	34	35	36
42	Hydrants Installed	335	-	-	-	-	-	-	-	-	-	35	37	41	41	43
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		25	27	28	28	28	30	33	38	44	45	45	49	49	50
47	Clarifier Equipment-Installed		25	26	27	27	27	29	32	37	43	43	44	46	46	49
48	Filter Gallery Piping-Installed		21	21	22	22	22	23	25	30	35	37	37	39	40	41
49																
50																
51																
52																
53																
54																
55																
56																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	N	COST INDEX NUMBERS													
			1	1	1	1	1	1	1	1	1	1	1	1	1	1
			9	9	9	9	9	9	9	9	9	9	9	9	9	9
		U	5	5	5	5	5	5	6	6	6	6	6	6	6	6
		C	4	5	6	7	8	9	0	1	2	3	4	5	6	7
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	39	41	44	47	49	51	52	53	55	56	57	59	61	64
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	41	43	46	49	50	52	53	53	54	55	56	57	59	61
9	Electric Pumping Equipment	311	55	56	63	69	73	74	74	71	71	71	73	74	78	81
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	41	43	46	49	50	52	53	53	54	55	56	57	59	61
16	Large Treatment Plant Equip.	320	44	45	48	50	52	54	55	56	58	59	60	62	64	67
17	Small Treatment Plant Equip.	320	46	47	50	53	54	56	58	58	60	60	62	63	66	68
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	32	33	38	42	37	36	35	35	35	41	44	45	46	47
24	Elevated Steel Tanks	330	31	33	35	38	38	38	38	37	36	37	38	38	41	44
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	47	50	52	56	57	61	62	63	64	65	66	67	69	71
28	Steel Mains	331	44	46	49	52	55	57	57	58	59	60	61	63	65	67
29	Concrete Cylinder Mains	331	48	50	52	54	56	59	60	60	61	62	62	64	66	70
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	51	53	57	60	63	65	68	69	71	72	73	74	75	76
35	Cast Iron Mains	331	56	59	62	66	68	72	73	75	77	79	79	80	80	81
36	Cement-Asbestos Mains	331	68	70	75	78	81	84	86	86	87	89	88	81	82	82
37	Steel Mains	331	38	40	43	46	48	51	53	55	56	58	60	63	65	66
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	35	36	39	41	44	46	48	50	51	53	55	58	60	63
40	Meters	334	67	70	77	78	78	78	78	78	84	87	87	93	101	101
41	Meter Installations	334	38	40	44	45	46	48	51	52	54	55	57	59	62	65
42	Hydrants Installed	335	44	44	48	50	51	53	54	55	56	57	58	58	61	64
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		52	53	57	58	58	59	60	61	61	62	65	66	67	68
47	Clarifier Equipment-Installed		50	49	53	55	57	58	58	59	60	60	63	65	66	67
48	Filter Gallery Piping-Installed		44	46	48	50	53	54	56	57	58	59	60	61	63	65
49																
50																
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

W-1

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS														
			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
			9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
1	Source of Supply Plant																
2	Collecting & Impounding Res.	305	67	72	78	86	94	100	115	127	133	139	148	164	179	189	
3																	
4																	
5																	
6																	
7	Pumping Plant																
8	Structures & Improvements	304	64	69	75	84	92	100	117	127	130	137	148	163	181	191	
9	Electric Pumping Equipment	311	81	84	89	93	96	100	122	155	174	184	192	205	222	245	
10																	
11																	
12																	
13																	
14	Water Treatment Plant																
15	Structures & Improvements	304	64	69	75	84	92	100	117	127	130	137	148	163	181	191	
16	Large Treatment Plant Equip.	320	69	73	79	89	96	100	118	134	144	152	162	175	191	208	
17	Small Treatment Plant Equip.	320	70	74	80	90	96	100	120	139	150	160	172	186	204	223	
18																	
19																	
20																	
21																	
22	Transmission Plant																
23	Steel Reservoirs	330	49	53	75	82	85	100	140	159	171	172	173	178	191	208	
24	Elevated Steel Tanks	330	48	55	71	80	86	100	152	183	182	183	195	206	228	250	
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26																	
27	Cast Iron Mains	331	74	78	84	91	96	100	129	137	142	150	158	166	180	196	
28	Steel Mains	331	69	74	80	88	96	100	113	125	133	141	152	166	180	199	
29	Concrete Cylinder Mains	331	72	78	80	88	95	100	113	134	138	140	148	162	176	189	
30																	
31																	
32																	
33	Distribution Plant																
34	Mains-Average All Types	331	77	80	84	94	98	100	110	146	154	162	173	185	202	219	
35	Cast Iron Mains	331	82	83	88	97	99	100	143	158	163	167	178	185	202	218	
36	Cement-Asbestos Mains	331	82	85	88	97	98	100	127	148	159	167	176	202	212	234	
37	Steel Mains	331	68	72	78	88	97	100	115	128	139	151	164	179	197	212	
38	PVC Mains	331	-	-	-	-	-	-	25	100	104	108	113	122	132	138	
39	Services Installed	333	66	72	79	89	96	100	115	123	130	139	145	160	175	184	
40	Meters	334	101	106	108	108	106	100	93	93	98	101	105	108	122	127	
41	Meter Installations	334	68	73	79	89	97	100	113	120	131	147	152	162	177	189	
42	Hydrants Installed	335	68	72	80	90	96	100	123	143	157	167	182	194	207	222	
43																	
44																	
45	Miscellaneous Items																
46	Flocculating Equipment-Installed		69	74	82	93	98	100	139	174	195	218	246	290	350	406	
47	Clarifier Equipment-Installed		68	72	82	93	98	100	140	167	181	199	210	232	272	310	
48	Filter Gallery Piping-Installed		68	72	78	90	97	100	119	130	136	144	151	158	171	185	
49																	
50																	
51																	
52																	
53																	
54																	
55																	
56																	

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	N	COST INDEX NUMBERS													
			1	1	1	1	1	1	1	1	1	1	1	1	1	
		A	9	9	9	9	9	9	9	9	9	9	9	9		
		U	8	8	8	8	8	8	8	9	9	9	9	9		
		C	2	3	4	5	6	7	8	9	0	1	2	3	4	5
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	197	206	217	227	234	238	248	255	258	262	270	282	295	302
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	198	206	218	225	233	239	251	265	271	274	281	294	308	316
9	Electric Pumping Equipment	311	260	271	277	282	284	299	311	330	349	355	368	386	428	442
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	198	206	218	225	233	239	251	265	271	274	281	294	308	316
16	Large Treatment Plant Equip.	320	227	242	251	262	269	276	286	301	313	322	332	342	348	357
17	Small Treatment Plant Equip.	320	243	259	268	279	286	293	303	317	328	334	343	354	360	366
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	210	182	184	181	184	196	220	216	229	253	261	248	246	250
24	Elevated Steel Tanks	330	244	197	200	198	207	219	260	268	278	285	277	249	242	252
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	208	222	225	236	235	242	253	266	273	279	284	295	305	305
28	Steel Mains	331	215	223	230	234	232	241	255	272	279	287	293	302	316	324
29	Concrete Cylinder Mains	331	203	213	218	232	239	243	258	269	277	288	295	303	311	317
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	231	239	244	254	255	263	280	295	301	307	311	321	327	332
35	Cast Iron Mains	331	223	245	253	264	263	269	282	296	304	313	320	329	339	341
36	Cement-Asbestos Mains	331	253	244	249	255	259	275	315	340	338	332	319	335	338	354
37	Steel Mains	331	233	228	231	237	242	248	265	277	281	288	295	302	304	311
38	PVC Mains	331	137	151	149	151	150	160	197	217	211	200	183	193	191	204
39	Services Installed	333	198	207	215	221	226	230	245	258	262	272	283	292	300	307
40	Meters	334	128	141	148	135	135	137	140	150	159	162	196	195	175	200
41	Meter Installations	334	207	230	239	247	255	259	269	282	294	310	320	337	347	358
42	Hydrants Installed	335	245	264	270	285	296	307	320	343	363	372	378	385	391	398
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		458	496	506	540	560	575	579	580	565	528	539	555	562	566
47	Clarifier Equipment-Installed		356	389	398	431	442	446	451	455	442	416	435	458	492	514
48	Filter Gallery Piping-Installed		201	217	223	234	237	243	251	266	279	289	297	309	319	321
49																
50																
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS														
			2005		2006		2007		2005		2006		2007				
			1	1	1	1	2	2	2	2	2	2	2	2			
			9	9	9	9	0	0	0	0	0	0	0	0			
1	Source of Supply Plant																
2	Collecting & Impounding Res.	305	309	317	318	318	326	336	344	350	373	388	394	400	405	413	439
3																	
4																	
5																	
6																	
7	Pumping Plant																
8	Structures & Improvements	304	321	331	337	343	362	378	389	394	421	442	447	456	464	481	494
9	Electric Pumping Equipment	311	450	473	489	505	530	527	529	543	572	604	611	620	619	639	628
10																	
11																	
12																	
13																	
14	Water Treatment Plant																
15	Structures & Improvements	304	321	331	337	343	362	378	389	394	421	442	447	456	464	481	494
16	Large Treatment Plant Equip.	320	367	380	391	401	413	428	443	452	466	480	482	499	500	516	533
17	Small Treatment Plant Equip.	320	375	389	401	410	424	439	452	460	480	498	502	520	518	539	559
18																	
19																	
20																	
21																	
22	Transmission Plant																
23	Steel Reservoirs	330	251	255	268	268	270	274	275	276	308	329	338	348	375	494	537
24	Elevated Steel Tanks	330	268	273	283	288	299	341	429	431	481	524	524	524	596	657	657
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																	
27	Cast Iron Mains	331	311	320	323	328	348	363	383	385	393	411	415	442	451	480	484
28	Steel Mains	331	329	337	342	351	377	391	400	404	451	509	508	530	539	528	527
29	Concrete Cylinder Mains	331	324	331	338	345	372	404	415	415	425	436	440	454	459	460	462
30																	
31																	
32																	
33	Distribution Plant																
34	Mains-Average All Types	331	339	347	355	361	377	391	404	407	432	462	464	485	494	524	523
35	Cast Iron Mains	331	348	358	364	370	390	404	421	425	436	457	460	483	492	525	528
36	Cement-Asbestos Mains	331	364	372	375	382	405	423	444	446	460	480	483	538	546	599	597
37	Steel Mains	331	316	322	334	339	346	358	363	367	416	459	460	467	477	494	487
38	PVC Mains	331	211	216	216	219	231	242	253	254	263	277	278	321	321	365	361
39	Services Installed	333	321	323	330	334	348	354	360	368	388	404	407	421	459	478	481
40	Meters	334	207	197	197	198	205	206	207	207	207	207	207	235	248	260	262
41	Meter Installations	334	375	381	387	392	406	417	428	440	456	466	467	482	530	549	552
42	Hydrants Installed	335	418	475	493	508	526	551	565	570	585	597	597	613	647	663	669
43																	
44																	
45	Miscellaneous Items																
46	Flocculating Equipment-Installed		579	603	622	642	652	671	683	697	758	801	801	852	852	869	983
47	Clarifier Equipment-Installed		540	562	572	579	593	603	617	630	663	709	709	729	729	760	892
48	Filter Gallery Piping-Installed		328	337	344	349	363	378	398	408	421	438	438	468	470	500	501
49																	
50																	
51																	
52																	
53																	
54																	
55																	
56																	

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A R R U C	COST INDEX NUMBERS													
			2008		2009		2010		2011		2012		2013		2014	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	457	466	470	465	475	478	492	495	501	502	507	505	515	517
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	516	543	551	536	552	558	571	583	597	600	618	608	621	630
9	Electric Pumping Equipment	311	640	666	679	688	707	701	708	760	780	785	800	844	856	900
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	516	543	551	536	552	558	571	583	597	600	618	608	621	630
16	Large Treatment Plant Equip.	320	566	582	614	616	631	638	642	653	669	680	689	697	713	725
17	Small Treatment Plant Equip.	320	602	624	666	669	686	693	706	712	740	754	764	779	800	813
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	537	722	722	722	722	722	771	771	795	810	778	780	715	742
24	Elevated Steel Tanks	330	680	866	866	866	866	867	1079	1079	1059	1082	1089	1099	1131	1131
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	510	534	578	576	601	601	602	610	634	669	691	684	712	743
28	Steel Mains	331	543	606	605	585	593	609	644	658.5	711	708	724	704	694	708
29	Concrete Cylinder Mains	331	468	475	502	502	494	495	510	517	523	526	547	534	535	547
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	550	588	624	608	617	623	633	644	669	690	698	693	720	733
35	Cast Iron Mains	331	556	579	625	624	647	648	654	660	681	716	733	730	759	781
36	Cement-Asbestos Mains	331	621	632	691	678	638	649	658	683	716	721	712	707	704	721
37	Steel Mains	331	514	582	595	559	565	575	593	606	633	637	638	631	665	665
38	PVC Mains	331	372	374	419	408	353	363	369	389	412	412	391	392	383	383
39	Services Installed	333	501	511	534	534	545	554	568	574	589	600	602	602	603	605
40	Meters	334	373	373	373	373	374	376	379	379	379	379	380	381	381	381
41	Meter Installations	334	572	573	597	598	612	623	635	635	646	673	677	677	688	688
42	Hydrants Installed	335	693	699	732	731	740	721	730	731	757	758	774	784	807	849
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		1187	1373	1645	1645	1699	1744	1823	1848	1904	1973	1978	2015	2041	2078
47	Clarifier Equipment-Installed		920	944	997	997	991	1001	1056	1060	1077	1102	1105	1136	1154	1162
48	Filter Gallery Piping-Installed		530	543	589	590	613	614	620	620	641	666	677	680	713	728
49																
50																
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

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COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS													
			2015		2016		2017		2018		2019		2020		2021	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	526	521	526	532	543	549	559	570	576	575	584	583	605	648
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	642	646	655	659	672	671	687	706	717	713	719	730	762	815
9	Electric Pumping Equipment	311	928	931	990	1013	1052	1135	1146	1216	1261	1346	1374	1454	1436	1465
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	642	646	655	659	672	671	687	706	717	713	719	730	762	815
16	Large Treatment Plant Equip.	320	736	737	755	758	774	785	797	812	832	842	871	890	922	946
17	Small Treatment Plant Equip.	320	832	840	861	864	881	897	911	934	960	975	1012	1035	1075	1107
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	742	742	742	774	784	784	801	820	832	832	836	836	836	990
24	Elevated Steel Tanks	330	1131	1131	1131	1143	1161	1161	1181	1200	1244	1244	1244	1244	1244	1473
25	Concrete Reservoirs	330	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26																
27	Cast Iron Mains	331	733	744	754	759	793	785	810	825	844	858	884	895	931	979
28	Steel Mains	331	712	713	697	705	723	726	733	770	792	785	824	830	845	962
29	Concrete Cylinder Mains	331	562	575	591	592	601	592	620	626	639	641	638	653	664	682
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	736	738	747	750	774	772	790	801	819	826	847	850	883	911
35	Cast Iron Mains	331	780	785	795	797	832	826	855	864	883	894	920	924	952	977
36	Cement-Asbestos Mains	331	724	731	741	743	751	746	763	770	784	793	820	831	900	931
37	Steel Mains	331	673	670	678	681	697	701	704	717	734	736	748	748	775	805
38	PVC Mains	331	387	387	388	388	387	387	397	397	401	401	417	418	471	472
39	Services Installed	333	617	616	622	617	638	651	661	667	677	684	706	701	712	739
40	Meters	334	400	400	403	403	404	418	434	434	443	443	459	459	485	485
41	Meter Installations	334	702	702	709	708.5	722	733	750	750	765	772	790	797	815	838
42	Hydrants Installed	335	877	930	971	972	980	981	1012	1024	1049	1063	1101	1104	1184	1220
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		2167	2177	2192	2192	2198	2213	2223	2264	2360	2360	2470	2481	2567	2617
47	Clarifier Equipment-Installed		1184	1188	1229	1272	1311	1315	1369	1401	1462	1462	1523	1557	1662	1718
48	Filter Gallery Piping-Installed		727	728	735	738	772	772	801	808	825	834	868	866	900	920
49																
50																
51																
52																
53																
54																
55																
56																

L i n e	CONSTRUCTION AND EQUIPMENT	N A R U C	COST INDEX NUMBERS													
			2022		2023		2024		2025		2026		2027		2028	
			Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
1	Source of Supply Plant															
2	Collecting & Impounding Res.	305	693	704												
3																
4																
5																
6																
7	Pumping Plant															
8	Structures & Improvements	304	881	905												
9	Electric Pumping Equipment	311	1593	1787												
10																
11																
12																
13																
14	Water Treatment Plant															
15	Structures & Improvements	304	881	905												
16	Large Treatment Plant Equip.	320	1012	1065												
17	Small Treatment Plant Equip.	320	1188	1259												
18																
19																
20																
21																
22	Transmission Plant															
23	Steel Reservoirs	330	1113	1218												
24	Elevated Steel Tanks	330	1656	1813												
25	Concrete Reservoirs	330	-	-												
26																
27	Cast Iron Mains	331	1065	1132												
28	Steel Mains	331	1046	1057												
29	Concrete Cylinder Mains	331	724	751												
30																
31																
32																
33	Distribution Plant															
34	Mains-Average All Types	331	984	1021												
35	Cast Iron Mains	331	1048	1101												
36	Cement-Asbestos Mains	331	1007	1036												
37	Steel Mains	331	881	898												
38	PVC Mains	331	503	505												
39	Services Installed	333	782	797												
40	Meters	334	803	826												
41	Meter Installations	334	895	898												
42	Hydrants Installed	335	1283	1373												
43																
44																
45	Miscellaneous Items															
46	Flocculating Equipment-Installed		2850	3009												
47	Clarifier Equipment-Installed		1860	1999												
48	Filter Gallery Piping-Installed		988	1023												
49																
50																
51																
52																
53																
54																
55																
56																

Appendix A-5.1 (WAD)

		USBLS Producer								
		USBLS Consumer s Price Index Ref:CUUR 000SA0,C UUS0000S		Price Communi cations Equipmen t Ref: pcu3342		USBLS Technical Labor Ref: ecu11122I & CIU20154		USBLS PPI Motors & Generator s Ref: PCU33531 2335312		USBLS PPI Alarm Systems Ref: PCU33429 03342901
Source	Table	Year	A0 Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Constant cost	
USBLS	USBLS	1912	10	7	6	9.7	8.7	100		
USBLS	USBLS	1913	10	7	6	9.7	8.7	100		
USBLS	USBLS	1914	10	7	6	9.7	8.7	100		
USBLS	USBLS	1915	10	8	6	9.7	8.7	100		
USBLS	USBLS	1916	11	10	7	10.7	9.6	100		
USBLS	USBLS	1917	13	11	8	12.7	11.4	100		
USBLS	USBLS	1918	15	12	9	14.6	13.1	100		
USBLS	USBLS	1919	17	14	10	16.5	14.8	100		
USBLS	USBLS	1920	20	13	12	19.4	17.4	100		
USBLS	USBLS	1921	18	12	11	17.5	15.7	100		
USBLS	USBLS	1922	17	12	10	16.5	14.8	100		
USBLS	USBLS	1923	17	12	10	16.5	14.8	100		
USBLS	USBLS	1924	17	13	10	16.5	14.8	100		
USBLS	USBLS	1925	18	13	11	17.5	15.7	100		
USBLS	USBLS	1926	18	12	11	17.5	15.7	100		
USBLS	USBLS	1927	17	12	10	16.5	14.8	100		
USBLS	USBLS	1928	17	12	10	16.5	14.8	100		
USBLS	USBLS	1929	17	12	10	16.5	14.8	100		
USBLS	USBLS	1930	17	11	10	16.5	14.8	100		
USBLS	USBLS	1931	15	10	9	14.6	13.1	100		
USBLS	USBLS	1932	14	9	8	13.6	12.2	100		
USBLS	USBLS	1933	13	9	7	12.6	11.3	100		
USBLS	USBLS	1934	13	10	7	12.6	11.3	100		
USBLS	USBLS	1935	14	10	7	13.6	12.2	100		
USBLS	USBLS	1936	14	10	7	13.6	12.2	100		
USBLS	USBLS	1937	14	10	7	13.6	12.2	100		
USBLS	USBLS	1938	14	10	7	13.6	12.2	100		
USBLS	USBLS	1939	14	10	7	13.6	12.2	100		
USBLS	USBLS	1940	14	11	7	13.6	12.2	100		
USBLS	USBLS	1941	15	12	8	14.6	13.1	100		
USBLS	USBLS	1942	16	13	9	15.6	14	100		
USBLS	USBLS	1943	17	14	10	16.6	14.9	100		
USBLS	USBLS	1944	18	14	11	17.6	15.8	100		
USBLS	USBLS	1945	18	16	11	17.6	15.8	100		
USBLS	USBLS	1946	20	18	12	19.5	17.5	100		
USBLS	USBLS	1947	22	20	13	21.4	19.2	100		

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		USBLS Producer						
		USBLS	Price	USBLS	USBLS PPI	USBLS PPI		
		Consumer	Index	Technical	Motors &	Alarm		
		s Price	Communi	Labor Ref:	Generator	Systems		
		Index	cations	ecu11122I	s Ref:	Ref:		
		Ref:CUUR	Equipmen	&	PCU33531	PCU33429		
		000SA0,C	t Ref:	CIU20154	2335312	03342901	Constant	
		UUS0000S	pcu3342				cost	
Source	Table	Year	A0 Line 1	Line 2	Line 3	Line 4	Line 5	Line 6
USBLS	USBLS	1948	24	20	14	23.3	20.9	100
USBLS	USBLS	1949	24	20	14	23.3	20.9	100
USBLS	USBLS	1950	24	22	14	23.3	20.9	100
USBLS	USBLS	1951	26	23	15	25.2	22.6	100
USBLS	USBLS	1952	27	23	16	26.2	23.5	100
USBLS	USBLS	1953	27	23	16	26.2	23.5	100
USBLS	USBLS	1954	27	23	16	26.2	23.5	100
USBLS	USBLS	1955	27	23	16	26.2	23.5	100
USBLS	USBLS	1956	27	24	16	26.2	23.5	100
USBLS	USBLS	1957	28	25	17	27.2	24.4	100
USBLS	USBLS	1958	29	25	18	28.2	25.3	100
USBLS	USBLS	1959	29	26	18	28.2	25.3	100
USBLS	USBLS	1960	30	26	19	29.2	26.2	100
USBLS	USBLS	1961	30	26	19	29.2	26.2	100
USBLS	USBLS	1962	30	27	19	29.2	26.2	100
USBLS	USBLS	1963	31	27	20	30.2	27.1	100
USBLS	USBLS	1964	31	28	20	30.2	27.1	100
USBLS	USBLS	1965	32	28	21	31.2	28	100
USBLS	USBLS	1966	32	29	21	31.2	28	100
USBLS	USBLS	1967	33	31	22	32.2	28.9	100
USBLS	USBLS	1968	35	33	23	34.1	30.6	100
USBLS	USBLS	1969	37	35	24	36	32.4	100
USBLS	USBLS	1970	39	37	25	37.9	34.2	100
USBLS	USBLS	1971	41	38	26	39.8	36	100
USBLS	USBLS	1972	42	40	27	40.8	36.9	100
USBLS	USBLS	1973	44	44	28	42.7	38.7	100
USBLS	USBLS	1974	49	49	31	47.6	43.1	100
USBLS	USBLS	1975	54	52	34	52.5	47.5	100
USBLS	USBLS	1976	57	56	36	55.4	50.1	100
USBLS	USBLS	1977	61	60	38	59.3	53.6	100
USBLS	USBLS	1978	65	67	40	63.2	57.1	100
USBLS	USBLS	1979	73	75	45	71	64.1	100
USBLS	USBLS	1980	82	83	50	79.7	72	100
USBLS	USBLS	1981	91	89	55	88.5	79.9	100
USBLS	USBLS	1982	97	92	59	94.3	85.2	100
USBLS	USBLS	1983	100	96	61	97.2	87.8	100

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		USBLS Producer						
		USBLS	Price	USBLS	USBLS PPI	USBLS PPI		
		Consumer	Index	Technical	Motors &	Alarm		
		s Price	Communi	Labor Ref:	Generator	Systems		
		Index	cations	ecu11122I	s Ref:	Ref:		
		Ref:CUUR	Equipmen	&	PCU33531	PCU33429		
		000SA0,C	t Ref:	CIU20154	2335312	03342901	Constant	
		UUS0000S	pcu3342				cost	
Source	Table	Year	A0 Line 1	Line 2	Line 3	Line 4	Line 5	Line 6
USBLS	USBLS	1984	104	100	63	101.1	91.3	100
USBLS	USBLS	1985	108	102	65	105	94.8	100
USBLS	USBLS	1986	110	104	66	106.9	96.6	100
USBLS	USBLS	1987	114	104	69	110.8	100.1	100
USBLS	USBLS	1988	118	106	72	116.4	101.6	100
USBLS	USBLS	1989	124	108	76	123.3	104.3	100
USBLS	USBLS	1990	131	109	80	127.5	103.4	100
USBLS	USBLS	1991	136	110	84	129.7	101.9	100
USBLS	USBLS	1992	140	112	88	131.5	102.2	100
USBLS	USBLS	1993	145	113	92	133.5	103.2	100
USBLS	USBLS	1994	148	114	95	134.2	104.2	100
USBLS	USBLS	1995	152	115	97	137.5	106.5	100
USBLS	USBLS	1996	157	116	100	139.1	108.3	100
USBLS	USBLS	1997	161	115	102	138.6	109.4	100
USBLS	USBLS	1998	163	113	106	139.8	111.3	100
USBLS	USBLS	1999	167	110	109	139.9	109.4	100
USBLS	USBLS	2000	172	109	114	140.4	108.4	100
USBLS	USBLS	2001	177	105	119	141.6	109	100
USBLS	USBLS	2002	180	102	123	142	110.4	100
USBLS	USBLS	2003	184	98	127	142.4	110.8	100
USBLS	USBLS	2004	189	97	132	145.8	109.8	100
USBLS	USBLS	2005	195	97	135	154.4	110.6	100
USBLS	USBLS	2006	202	96	139	161.8	113.1	100
USBLS	USBLS	2007	207	97	146	169.6	113.8	100
USBLS	USBLS	2008	215	97	152	177.7	116	100
USBLS	USBLS	2009	215	97	155	181.8	116.8	100
USBLS	USBLS	2010	218	96	157	185.4	117.8	100
USBLS	USBLS	2011	225	96	161	196.5	118.4	100
USBLS	USBLS	2012	230	95	164	201.2	119.9	100
USBLS	USBLS	2013	233	96	162	203.2	121.5	100
USBLS	USBLS	2014	237	96	165	206.1	122.2	100
USBLS	USBLS	2015	237	95.1	168	206.4	400.5	100
USBLS	USBLS	2016	240.2	93.8	171.8	204.8	401.2	100
USBLS	USBLS	2017	245.1	93.2	175.1	207.3	123.4	100
USBLS	USBLS	2018	250.9	93.3	178.8	211.8	121	100
USBLS	USBLS	2019	255.7	93.7	182.7	215.9	121.4	100

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			USBLS Producer					
			USBLS Consumer s Price Index Ref:CUUR 000SA0,C UUS0000S	USBLS Price Communi cations Equipmen t Ref: pcu3342	USBLS Technical Labor Ref: ecu11122I & CIU20154	USBLS PPI Motors & Generator s Ref: PCU33531 2335312	USBLS PPI Alarm Systems Ref: PCU33429 03342901	Constant cost
Source	Table	Year	A0 Line 1	Line 2	Line 3	Line 4	Line 5	Line 6
USBLS	USBLS	2020	259.5	94.5	186.5	216.4	122	100
USBLS	USBLS	2021	272.2	97.6	192.5	228.6	128.2	100
USBLS	USBLS	2022	292.6	100.3	200.4	262.4	137.6	100
USBLS	USBLS	2023	302.3	101.6	205.7	279.3	157.7	100
USBLS	USBLS	2024	314.2	103.3	211.7	296	167.1	100
USBLS	USBLS	2025	327.9		218.1	316.4	178.9	100

Appendix A-5.1 (WAD)

DEPRECIATION AND FUNCTIONAL OBSOLESCENCE

An important step in the appraisal of property using the cost approach is the determination of the depreciation or condition of the property. Depreciation in this appraisal was segregated into normal (mostly physical) depreciation and functional obsolescence. The normal depreciation was determined based on the age of the property and its normal service life; while functional obsolescence was based on the impact on the property's remaining life caused by factors such as changing technology, service requirements, and competition.

Depreciation - The depreciation was determined based on the property's age and its normal service life using the following formula:

$$\text{Condition} = \frac{\text{Remaining Life}}{\text{Age} + \text{Remaining Life}}$$

or

$$\text{Depreciation} = \frac{\text{Age}}{\text{Age} + \text{Remaining Life}}$$

Where: Remaining Life = $f(\text{Age, Survival Characteristic, Normal Service life})$

Functional Obsolescence - The obsolescence inherent in the property was determined using the above-described normal service life in comparison to the property's service life is adjusted for functional factors. The obsolescence was quantified based on the difference between the property's normal service life and its functional service life. The following formula was used to calculate the obsolescence:

$$\text{Obsolescence} = \frac{\text{Normal Service Life} - \text{Functional Service Life}}{\text{Normal Service Life}}$$

Service Lives - (normal versus functional) - The service life of property is that period of time in which it provides the service to which it was designed and placed into service. In most industrial properties there is a difference between a property's normal or physical life and its functional life. A piece of equipment may physically last for an extended

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period; however, as that property ages changing technology, improvements or enhancement in similar equipment, functional and or service requirements change resulting in decreased utility of the existing equipment, and therefore decrease in value to it owner, this additional deterioration over that defined by the equipment's normal life is functional obsolescence.

Wastewater Depreciation Service Life Experience in Pennsylvania

The service lives used in the depreciation and functional obsolescence calculations were developed based on the property and its use, AUS Consultants' experience in developing depreciation studies for the water and wastewater industries and depreciation studies filed with recent PAWC and Aqua America rate cases. With each of their rate case filings PAWC and Aqua America have filed depreciation studies in support of their depreciation service lives and associated depreciation expenses contained within their revenue requirements. The depreciation studies were prepared by Gannett Fleming Rate Consultants a recognized firm in the depreciation consulting area. AUS Consultants has reviewed the studies which are summarized in the following table:

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Summary of PAWC Depreciation Studies Prepared for Rate Case

Account	Account Description	Iowa Curves		Service Life		Remaining Life	
		12/31/2016	12/31/2019	12/31/2016	12/31/2019	12/31/2016	12/31/2019
				years	years	years	years
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	R3	R3	45	45	39.1	33.3
354.30	STRUCTURES AND IMPROVEMENTS - SPP	R2.5	S0	50	55	45.2	32.6
354.40	STRUCTURES AND IMPROVEMENTS - TDP	R2	S0	65	55	56.6	31.7
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	S1	S1	35	35	33.3	23.2
355.00	POWER GENERATION EQUIPMENT	R2.5	S0.5	35	35	29.7	19.3
360.10	COLLECTION SEWERS - FORCE MAINS	S2	R3	70	75	53.1	52.5
361.10	COLLECTION SEWERS - GRAVITY MAINS	R2.5	R2.5	70	80	56.9	54.8
361.20	MANHOLES	S1.5	S2.5	50	50	41.3	32.2
363.00	SERVICES	R3	R3	38	47	22.9	30.2
364.00	FLOW MEASURING DEVICES	L3	L2.5	20	15	13.3	5.1
365.00	FLOW MEASURING INSTALLATIONS	S1.5	S2	30	25	23.1	10.8
370.00	RECEIVING WELLS	R3	R3	50	50	42.7	33.7
371.00	PUMPING EQUIPMENT	S0	S0.5	40	30	35.5	18.2
380.00	TREATMENT EQUIPMENT	5-R2	S1.5	45	35	37.1	20.1
381.00	PLANT SEWERS	R3	R3	50	50	43.1	32.7
382.00	OUTFALL SEWER LINES	R3	R3	50	50	37.8	28.3
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	S2.5	S2.5	20	20	13.6	11.3
389.60	OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	SQ	SQ	20	5	12.3	3.5
390.00	OFFICE FURNITURE AND EQUIPMENT	L4	SQ	15	20	9.5	10.1
391.00	TRANSPORTATION EQUIPMENT	SQ	L4	25	14	19.9	9.8
392.00	STORES EQUIPMENT	SQ	SQ	20	25	16.4	17.2
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	SQ	SQ	15	20	11.3	15.4
394.00	LABORATORY EQUIPMENT	L2.5	SQ	16	15	8.7	10.4
395.00	POWER OPERATED EQUIPMENT	SQ	R2	15	22	10.3	13.2
396.00	COMMUNICATION EQUIPMENT	SQ	SQ	15	15	9.6	6.9
397.00	MISCELLANEOUS EQUIPMENT		SQ		15		12.8
398.00	OTHER TANGIBLE PLANT		SQ		25		21.5

AUS Consultants believe this increase in service lives is attributable to the widespread use of relining older mains instead of replacing mains which are in need of repair. The practice of relining mains with a cured in place plastic liner not only repairs specific main but has the affect of extending the life of the original main by the length of time which the relining can be expected to last. Most relining vendors warranty their product and procedure for 50 years. Thus, in essence the original mains' service life will be extended by 50 plus years at the date the relining occurred. For those mains associated with relining their installation date was established at the date of their relining and their depreciation parameters were established the same as the depreciation parameters of the relining, i.e., R2.5 – 60 years.

The following table presents the depreciation parameters (Iowa-type survivor curve and service life) used in the cost approach in calculating the depreciation of the property:

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
 Borough of Brentwood
 Wastewater Collection System
 Investor-Owned Utility
 February 16 2023

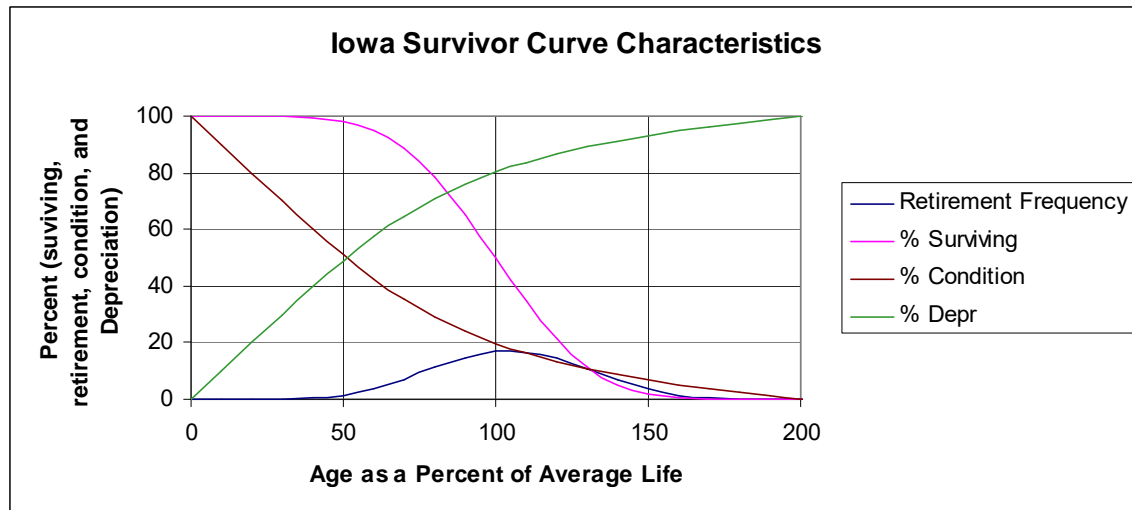
Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)	(5)	(6)	(6b)
		(4a)	(4b)		
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation
			years	% of CORLD	Table
					Life
353.05	Land & Land Rights - Easements	ZNonDep	0.00	0.00% Non-Depr	0.00
361.20	Collection Sewers - Gravity - Mains - CIP/DIP	R2.5	80.00	0.00% MACRS	25.00
361.30	Collection Sewers - Gravity - Mains - PVC	R2.5	80.00	0.00% MACRS	25.00
361.10	Collection Sewers - Gravity - Mains - VCP	R2.5	80.00	0.00% MACRS	25.00
361.11	Collection Sewers - Gravity - Mains - VCP Relined	R2.5	150.00	0.00% MACRS	25.00
361.12	Collection Sewers - Gravity - Mains - VCP Relined future Periods	R2.5	130.00	0.00% MACRS	25.00
361.70	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00% MACRS	25.00
361.22	Collection Sewers - Gravity - Mains Relining	R2.5	60.00	0.00% MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00% MACRS	25.00

As the above table demonstrates the depreciation lives selected for the AUS Consultants appraisal are consistent with the industry depreciation studies' finding for wastewater plant. However due to the age of some of the property the extend of the depreciation was limited to 85% of the assets original cost and its replacement cost new.

Iowa Survivor Curves

The Iowa Survivor Curves recommended in the McKeesport appraisal are used to determine the remaining life of the property, and therefore its condition, recognizing the properties' service life and age. The Iowa Survivor Curves allows the appraiser to recognize the property being studied (mains, treatment and pumping plant equipment etc placed in a particular year, say 1985) is part of a larger group of property, i.e., all the property i.e., mains, treatment and pumping plant equipment, etc. As such, the service lives which we refer to in our appraisal are an average service lives for the group, i.e., the average life of all mains, treatment and pumping plant equipment, etc. The Iowa Survivor curve allows the appraiser to calculate the remaining life, and therefore condition, of a subset of the group (the mains placed in 1985) based on the groups': (1) Iowa Survivor Curve, (2) Service Life and the (3) age of property at the appraisal date. An Iowa Survivor Curves depicts how property from a group survives and retires about that groups' average life.



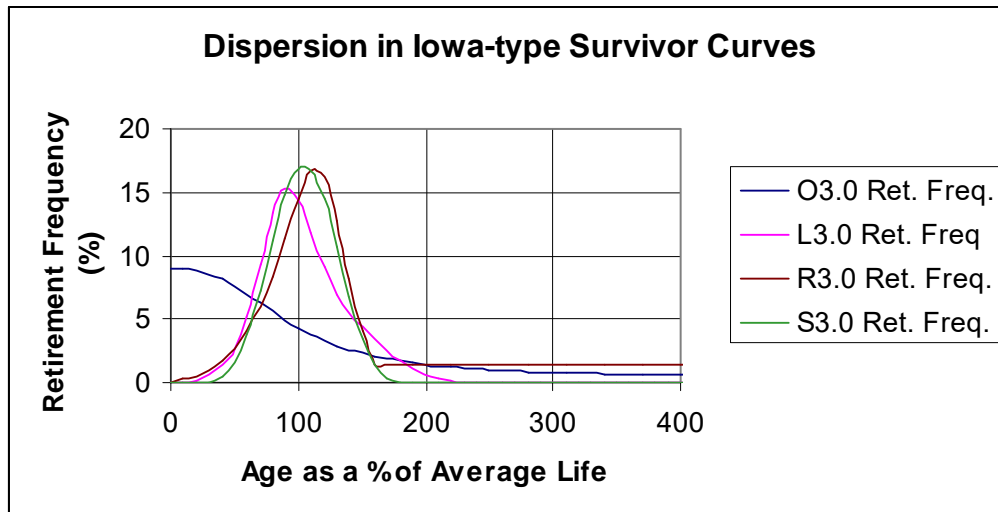
The above figure depicts a typical Iowa-type survivor curve, an S3.0 Iowa-type survivor curve. In this case the survivor curve has been generalized to a service life of 100% of the property's average life, in this generalized form the survivor curve statistics can be utilized with any individual service life in the age-life service life and depreciation calculations. There are four characteristics displayed in the above chart depicting the manner in which property survives and retires about the group's average life, those characteristics are: the retirement frequency (blue), the percent surviving (red), the percent condition (brown) and the percent depreciated (green). The retirement frequency represents the retirement of individual property items about the group's average service life. As can be seen the retirements are distributed about the group's average life with some items retiring before the average life and some items retiring at or after the group's service life. The group's survivor curve is developed from subtracting the retirements as they occur as the property ages. The depreciation curve depicts how much of the property group's life has been consumed; while the condition curve depicts

Appendix A-5.1 (WAD)

how much of the property group's life remains. The condition and depreciation curves are complementary in that condition equals 100% minus depreciation and vice versa.

The theory of Iowa Survivor Curves was presented in the 1920s and 30s by Robley Winfrey based on research at Iowa State University (then the Iowa Engineering Experiment Station). Winfrey's research was first published in Bulletin 103 - Life Characteristics of Physical Property and Bulletin 125 - Statistical Analysis of Industrial Property Retirements. (Incidentally, both publications are out of print, I have a copy of Bulletin 125 but not Bulletin 103, I'm still trying to get a copy of that piece of depreciation literature.). Bulletin 125 was updated in 1967 by Professor Harold Cowles of Iowa State University's Department of Industrial Engineering. In conducting his research, Winfrey collected data on industrial property survival and retirement from various sources and analyzed that data as a function of property's age at retirement and ultimately the property groups' service life when all the property in the group was fully retired.

Winfrey discovered the industrial property's survival and retirement fits three basic patterns with relationship to the property's average life:



Symmetrically moded (S-type Iowa Survivor Curves) (green) – The S-type Iowa Survivor Curve is one wherein the property's retirements are symmetrically distributed about the mode. Mode in statistics is defined as the highest frequency, in this case retirement frequency. Thus an S-type Iowa curve is like a normal curve; however, its shape is not identical to a normal distribution function.

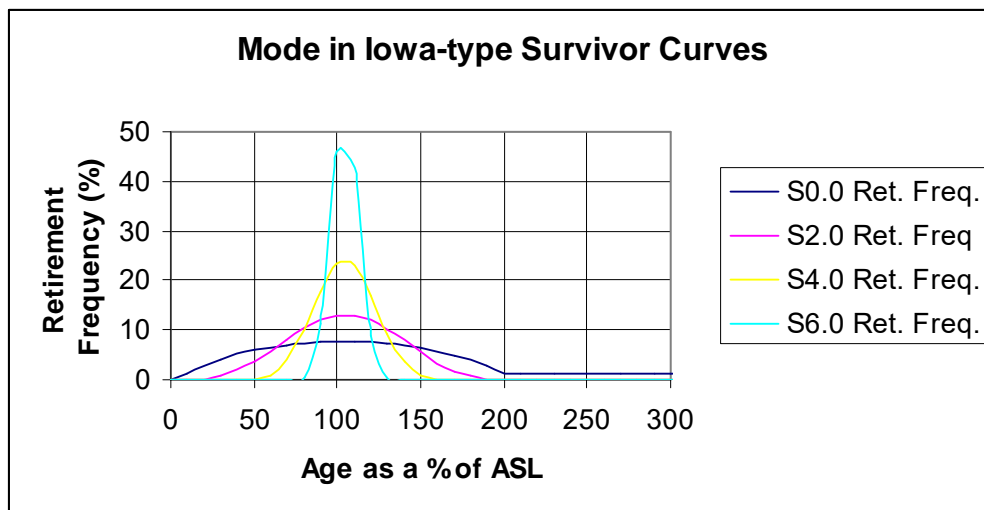
Right moded (R-type Iowa Curves) (brown) – the R-type Iowa curve has its mode skewed to the right of the property's average life; therefore, the retirements tend to be distributed later in the property's life and there are less retirements earlier in the property's life.

Left moded (L-type Iowa Curve) (red) – The L-type Iowa curve has its mode skewed to the left of the property's average life; therefore, the retirements tend to be distributed earlier in the property's life and there are less retirements later in the property's life.

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In the utility industry, the plant, i.e., mains, treatment and pumping plant equipment tends to have a R-type survival/retirement dispersion as it is designed to provide service over extended periods, requiring little maintenance, and its designers have significant experience in designing and placing such property.

In conjunction with the above described R-, S-, and L-type survival/retirement patterns, Winfrey determines that there were several patterns of the manner in which the retirements' peakedness occur around the average life. In this case, Winfrey described the peakedness of the property retirements with peakedness enumerations of 0, 1, 2, 3, 4, 5, and 6. The low peakedness numbers 0 and 1 represent low levels of retirements being distributed over the property's entire life, while high peakedness numbers, 5 and 6 represent retirement patterns where the majority or all the retirements occur tightly grouped around the property's average life. Peakedness numbers 2, 3, and 4 are middle of the road, so to speak, in terms of peakedness.



Origin moded (O-type) survivor curve (blue) – Harold Cowles in his 1967 update of Bulletin 125 introduced the O-type survivor curve with the mode of the curve at the origin or at age equal to zero (0) years. This class of lowa curves was overlooked by Winfrey possibly because it made little intuitive sense that industrial retirement of property would have their maximum retirement frequency at age equal to zero. However, Cowles felt for completeness they should be included. O-type survivor curves do reflect the survival pattern of intangible assets.

lowa-type survivor curves are parametric, as opposed to formalistic, in that they were derived from empirical survival/retirement data which Winfrey collected. There are lowa curve equations presented in Bulletin 125; however in most cases users reference standardized lowa Survivor Curve tables. The lowa-type survivor curves used in this appraisal have been generalized to a service life of 100% of the property's average life. By generalizing the service life to 100% of average life these tables can be used to generate survival and retirement statistics for property of any service life.

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It should be apparent that lowa-types survivor curves are valid for any type property as the curves only depict how that property survives and retires about the average life of a group of similar property.

Generalized lowa-type Survivor Curves

As was discussed earlier, most users of the lowa-type survivor curves use standardized tables of lowa curves. The most usable form of these standardized tables are tables which have been generalized to a standard life of 100% of the property's average life. Based on these generalized tables the user can determine the property's remaining life by knowing the lowa-type survivor curve (mode and peakedness characteristics), the property's (group's) service life, and the specific property's (for which the remaining life is desired) age. The following table reflects how the remaining life, as well as its condition, is determined:

Year	Study Date	Age	lowa Curve	Service Life	Age % of ASL	lowa Lookup	lowa Condition	Remaining Life	Total Life	Condition
				ASL						
		years		years	%			years	years	%
Input		Calc	Input	Input	Calc	Calc	lookup	Calc	Calc	Calc
1970	2006	35.5	R3.0	25	142	R3.0142	0.066388	1.7	37.2	4.47%
1980	2006	25.5	R3.0	25	102	R3.0102	0.192543	4.8	30.3	15.88%
1990	2006	15.5	R3.0	25	62	R3.0062	0.442050	11.1	26.6	41.62%
2000	2006	5.5	R3.0	25	22	R3.0022	0.787294	19.7	25.2	78.16%
2004	2006	1.5	R3.0	25	6	R3.0006	0.941117	23.5	25.0	94.01%
2005	2006	0.5	R3.0	25	2	R3.0002	0.980320	24.5	25.0	98.00%

The above table was develop with reference to the standardized lowa Survivor curves contained and represent a R3.0 25 year lowa curve and life table. The standardized lowa Curves are located in tab database. In order to reference the proper line of the lowa Curve data the user looks up that data by reference to the property's age as percent of the service life (age % of ASL column) and the lowa Survivor curve (lowa Curve column), combining these two criteria the lowa Lookup column will get the user to the proper lowa Curve data.

In the above calculation the lowa-type survivor curve is R3, the service life of the group is 25 years, and its age is defined by property's accounting records which specifies the investment in property by account (A group in service life terms) and by the year of installation of that property. The age is dependent upon the appraisal year (study date) and the year of placement. It is customary to assume that the property placed in any particular placement year was placed continuously during that year and therefore its age is best represented as if that investment was placed in the middle of the year, i.e., July 1; hence, the adoption of the "mid-year" convention where all property is treated as if placed the mid-year.

Service Life and Survival/retirement pattern

The service life and survival/retirement pattern are determined by an analysis of historical survival and retirement experience of the company's property. This historical experience must be adjusted for factor which are known to be impacting the property's

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service life but may not exhibited their effect on the property's retirement. Here it is important that a distinction is made between industrial property's physical service life and its functional service life. While physically a type of property may be deployed and remain in use for many years, over those years factors of changing technology, consumers demand and patterns, and even regulation, lessen the property functional life when compared to its physical life. In an industry such as the communications industry, function obsolescence is the primary driver of depreciation.

The following table details the impact of the above-described lives on the condition calculations:

Year	Study Date	Age	Iowa Curve	Service Life	Age % of ASL	Iowa Lookup	Iowa Condition	Remaining Life	Total Life	Condition
				ASL						
		years		years	%			years	years	%
Input		Calc	Input	Input	Calc	Calc	lookup	Calc	Calc	Calc
1970	2006	35.5	R3.0	30	118	R3.0118	0.131771	4.0	39.5	10.02%
1979	2006	26.5	R3.0	30	88	R3.0088	0.264919	7.9	34.4	23.07%
1981	2006	24.5	R3.0	25	98	R3.0098	0.211333	5.3	29.8	17.74%
1989	2006	16.5	R3.0	25	66	R3.0066	0.411848	10.3	26.8	38.42%
1990	2006	15.5	R3.0	20	78	R3.0078	0.327281	6.5	22.0	29.69%
2000	2006	5.5	R3.0	20	28	R3.0028	0.731331	14.6	20.1	72.67%
2004	2006	1.5	R3.0	20	8	R3.0008	0.921605	18.4	19.9	92.47%
2005	2006	0.5	R3.0	20	3	R3.0003	0.970499	19.4	19.9	97.49%

Statistical Analyses of Industrial Property Retirements

by
Robley Winfrey



**BULLETIN 125
REVISED**

**ENGINEERING RESEARCH INSTITUTE
IOWA STATE UNIVERSITY • AMES, IOWA**

IOWA CURVES

Iowa-type survivor curves are based on a set of empirical data collected (mainly in the 1930s) for the purpose of statistically predicting future service expectancy (remaining service) for physical properties.

The techniques used and methods applied are exactly analogous to those used by the insurance industry for the purpose of predicting human mortality (life expectancy) when determining appropriate insurance premium rates. The only distinction to be made is that the life insurance companies are investigating the life or longevity characteristics of human beings and the studies which developed the Iowa-type survivor curves were developed to predict the longevity or service life experience for physical, inanimate objects. The seminal statistical analyses for industrial property were conducted under the auspices of the Iowa Research Station now known as Iowa State University and were published in Statistical Analyses of Industrial Property Retirements, Bulletin 125, Engineering Research Institute, Iowa State University.

From the preface to the revised 1967 edition of Bulletin 125:

"With the original publication of Bulletin 125 by the Iowa Engineering Experiment Station in 1935 (now known as the Engineering Research Institute), a significant contribution was made to the practice of industrial property life estimation. This was in the form, first, of a single volume, readily available, which presented in considerable detail the procedures for statistically analyzing historical property retirement data. Secondly, but no less significant, was the presentation of a set of 18 generalized density functions descriptive of industrial property retirement dispersion, mathematically described in terms of the Pearson frequency curve family, but with parameters established empirically from the analysis of a wide range of actual retirement experience.

These curves, the cumulative form of which are commonly referred to as the Iowa-type Survivor Curves, have been used extensively since their introduction and, at the present time, the set is accepted as the standard of industrial property retirement dispersion. Because of the very simple mnemonic coding system which suggests the varying statistical characteristics involved, the Iowa Curves have also become widely used and recognized in the identification or classification of retirement dispersions, even for patterns derived in terms of analytical techniques not using the Curves."

The tables which follow this discussion are the ones used to estimate the remaining life of investment at particular age for an account with a particular service life.

Statistical Analyses of Industrial Property Retirements

by Robley Whitrey

(Revised April, 1967 by Harold
A. Cowles, Professor, Department
of Industrial Engineering)

Originally printed as
BULLETIN 125
of the
IOWA ENGINEERING EXPERIMENT STATION
December, 1935

ENGINEERING RESEARCH INSTITUTE
Iowa State University, Ames, Iowa

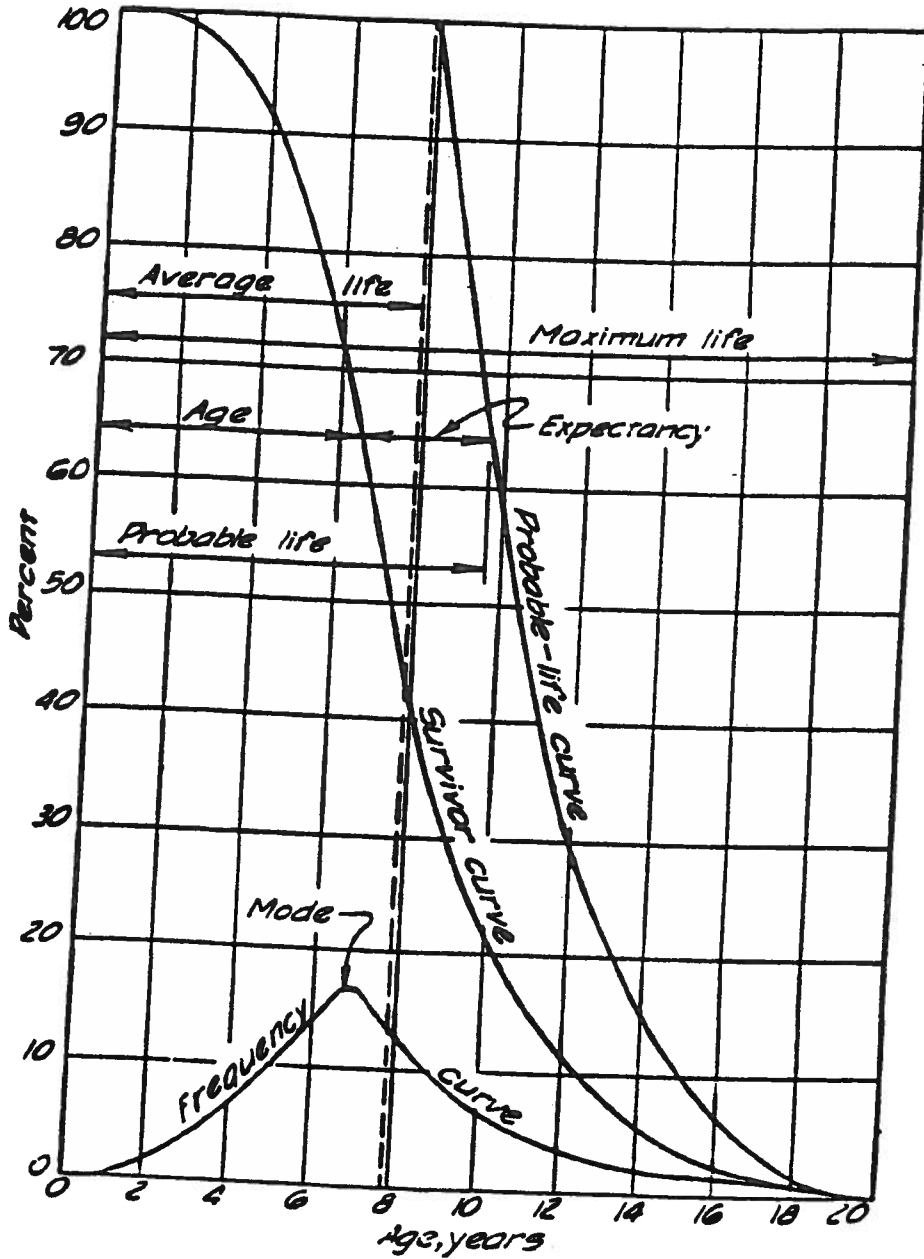


Fig. 1.—A typical survivor curve and its derived curves.

8. The *service life* of a unit is that period of time (or service) extending from the date of its installation to the date of its retirement from service. While the service life of physical property is usually expressed in years it may also be expressed in terms of units of production (screws, wheels, cars, pounds, miles, car-miles), time units of less than a year (months, hours, minutes), or combinations of physical units or services and time (lamp-hours, ten-years).

9. The *probable service life* of an individual unit is that period of time extending from its date of installation to the forecasted date when it probably will be retired from service.

10. The *expectancy of life* of an individual unit is that period of time extending from the observation age (usually the present) to the forecasted date when the unit probably will be retired from service. Age plus expectancy always equals probable life.

11. The *average service life* of a group of individual units is the quotient obtained by dividing the sum of the service lives of all the units by the number of units. The average service life (in years) is equal to the area under the survivor curve in percent-years (or unit-years) divided by 100 percent (or the total number of units).

12. The *probable average service life* of a group of individual units is the average of the probable service lives of the units of the group.

13. The *expectancy of life* of a group of individual units is that period of time extending from the observation age (usually the present) to the average of the forecasted dates when the units probably will be retired. The observation age plus the expectancy always equals the probable average service life.

Note: Service life and average service life are always known quantities since they represent completed service life; probable service life and probable average service life always must be estimated since they are forecasts of uncompleted service.

14. *Maximum life* or *maximum age* is the age of the last unit of a given group to be retired from service; it is also the age at which the survivor curve has a zero ordinate, or zero percent surviving.

15. Property units which are taken out of service for any reason whatsoever are called *retirements*. Retirements may include original units (units of the initial installation) as well as "second-generation" units, that is, replacements (or renewals) which were installed to take the place of the original units as they were removed.

16. *Replacements* are the units put in service to replace retirements.

17. *Renewals* are replacements "in kind" which have exactly the same life characteristics as the retirements.

18. *Installations* are new units placed in service, not as replacement units, but as additions to the property.

19. All renewals, replacements, and installations are *placements*.

20. *Survivor curves* show the number of units of a given group

which are surviving in service at given ages. The ordinates to the curve give at any particular age the percentage (or the actual number) of the original number which are yet surviving in service. The abscissa is measured in years or other suitable service unit. The *original survivor curve* is the curve drawn through the points calculated from the original data without adjustment. Since this original survivor curve is generally irregular it is smoothed to produce a *smoothed survivor curve*, sometimes referred to as an *adjusted curve*.

Survivor curves have in some publications been referred to as *mortality curves*. However, the term *survivor curve* is used in this report because the curves referred to show the *percent surviving*, not the *percent retired*, and because the term *mortality* suggests human beings and not inanimate objects.

21. A *stub survivor curve* is an incomplete survivor curve; that is, one which does not extend to zero percent surviving because of a lack of retirement data on the longer-lived units.

22. A *probable-life curve* shows the probable average life of the survivors at any age from zero to maximum life.

23. If the percent surviving is read at the beginning of each successive age-interval and the differences in these successive readings plotted at ages corresponding to the midpoints of the intervals, the resulting points form a *frequency curve*, or *distribution curve*. Since the ordinates indicate the percentage of the units retired during each interval, the curve shows in what manner the retirements are distributed over the period from zero age to maximum life.

24. The point on the frequency curve having the highest ordinate is called the *mode*. The year in which the mode occurs is called the *modal year*.

25. A *maximum-life cycle* is a period of time corresponding in length to the maximum life of the units. An industrial property may continue to be operated through several maximum-life cycles of some of the units of which it is composed.

26. An *average-life cycle* is a period of time corresponding in length to the *average life*.

27. If a property is continued in service for a long time and maintained with a constant number of like units of substantially the same potential average life, it will reach a *normal condition* or *stabilized condition*, after which the average age of the units in service and the annual renewals will be constant year after year.

28. *Normal renewals* are the annual renewals after the property group has reached a stabilized condition. Normal renewals, in percent of the original number of units, are equal to 100 percent divided by the average life.

29. *Generalized curves* are those whose ordinates are expressed in percent of the total number of units and whose abscissas (age) are expressed in percent of average life.

30. *Type curves* are those theoretical curves derived by the methods described in this report from a study of actual retirements. They depict typical survivor and frequency curves for industrial property. Actual survivor curves are compared with type survivor curves in the process of determining probable average lives.

MORTALITY TABLES AND CURVES OF HUMAN BEINGS

By a study of population and deaths, life insurance companies have arrived at life tables for human beings of different nationalities. From these life tables the normal death rate and life expectancy for people at different ages can be determined as a basis for life insurance premiums and reserves. Life tables can be prepared from the vital statistics for any desired number of years in combination with census returns. By means of mathematical formulas a life table is adjusted to remove any slight irregularities that may exist in the original data.

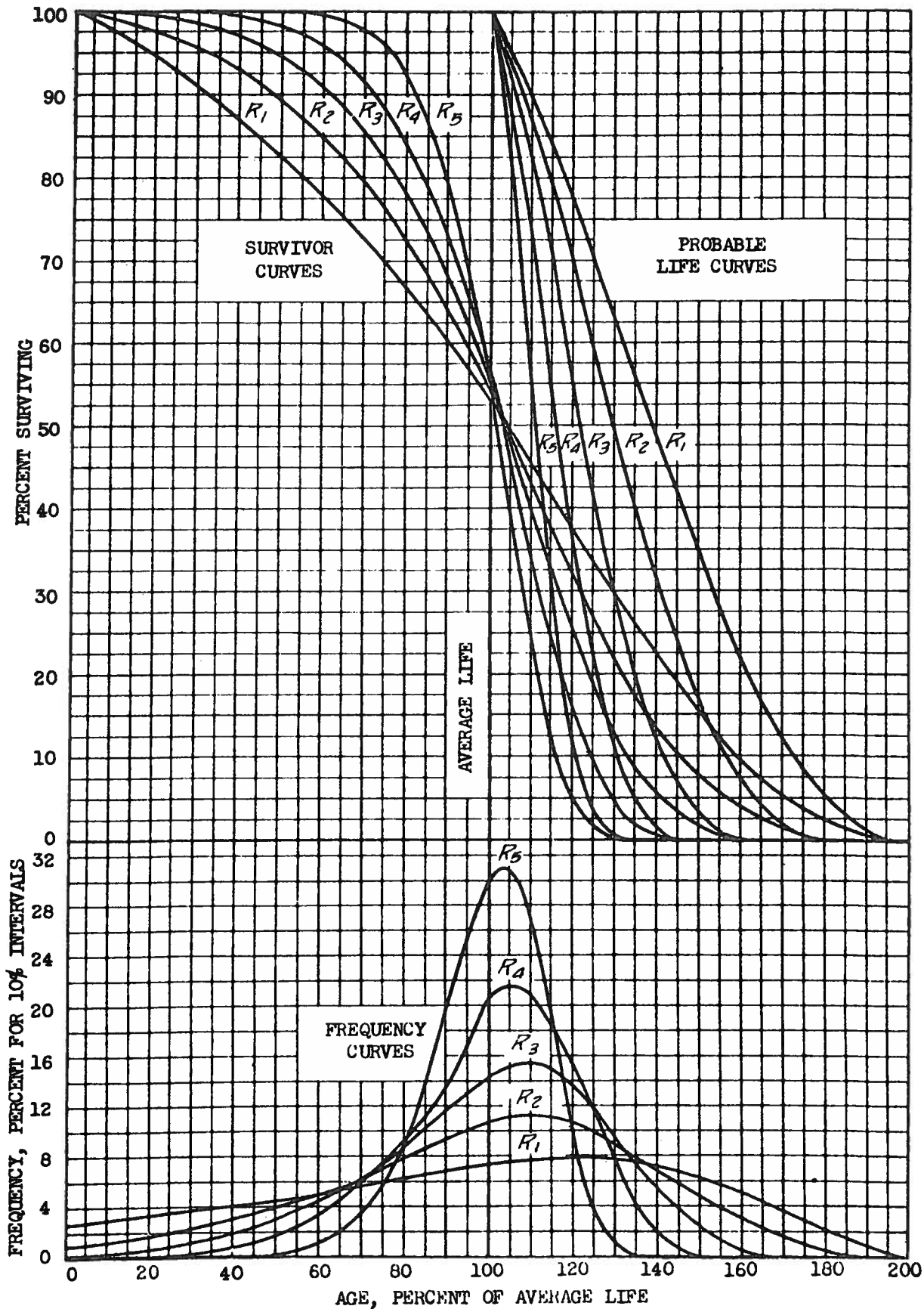
Table 1 is the United States life table for white males, based upon deaths for the 10 years from 1901 to 1910. Unlike industrial property units whose average lives are continually being affected by many forces, the human average life and distribution of deaths according to age change very little over several generations. The life curve, however, varies considerably for different races as is illustrated in Fig. 2. The deaths at different ages are shown for the United States by the frequency curves in Fig. 3.

This reference to the United States life tables is made to show the similarity between the life characteristics of human beings and industrial properties. The essential differences are three. First, human beings experience a heavy infant mortality which results in a bi-modal frequency curve, one mode occurring between ages 0 and 1, and the other between ages 75 and 76. Second, the mode at the age-interval 75-76 occurs at a much greater percentage of average life than is usually found with physical property employed in industry. Third, the curves for industrial equipment vary in shape over wide limits while human mortality curves vary relatively little. The Makehamized curve in Fig. 3 is one that has been smoothed. (It does not represent the same group of lives as the lower curves of the figure.)

ANALYZING RETIREMENT DATA

The foregoing section discussed the life tables for humans and the accompanying curves. Similar analyses can be made of the behavior of the physical equipment employed in industry when sufficient information is available. The processes employed for analyzing the retirements of industrial property are not so easily handled as are those employed for mortality data of human beings, nor are the results usually as uniform because of the small number of units observed and the more numerous, less uniform causes of retirement of industrial

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE RIGHT-MODAL IOWA TYPE CURVES



Appendix A-5.1 (WAD)

CHART NO. 8

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE SYMMETRICAL IOWA TYPE CURVES

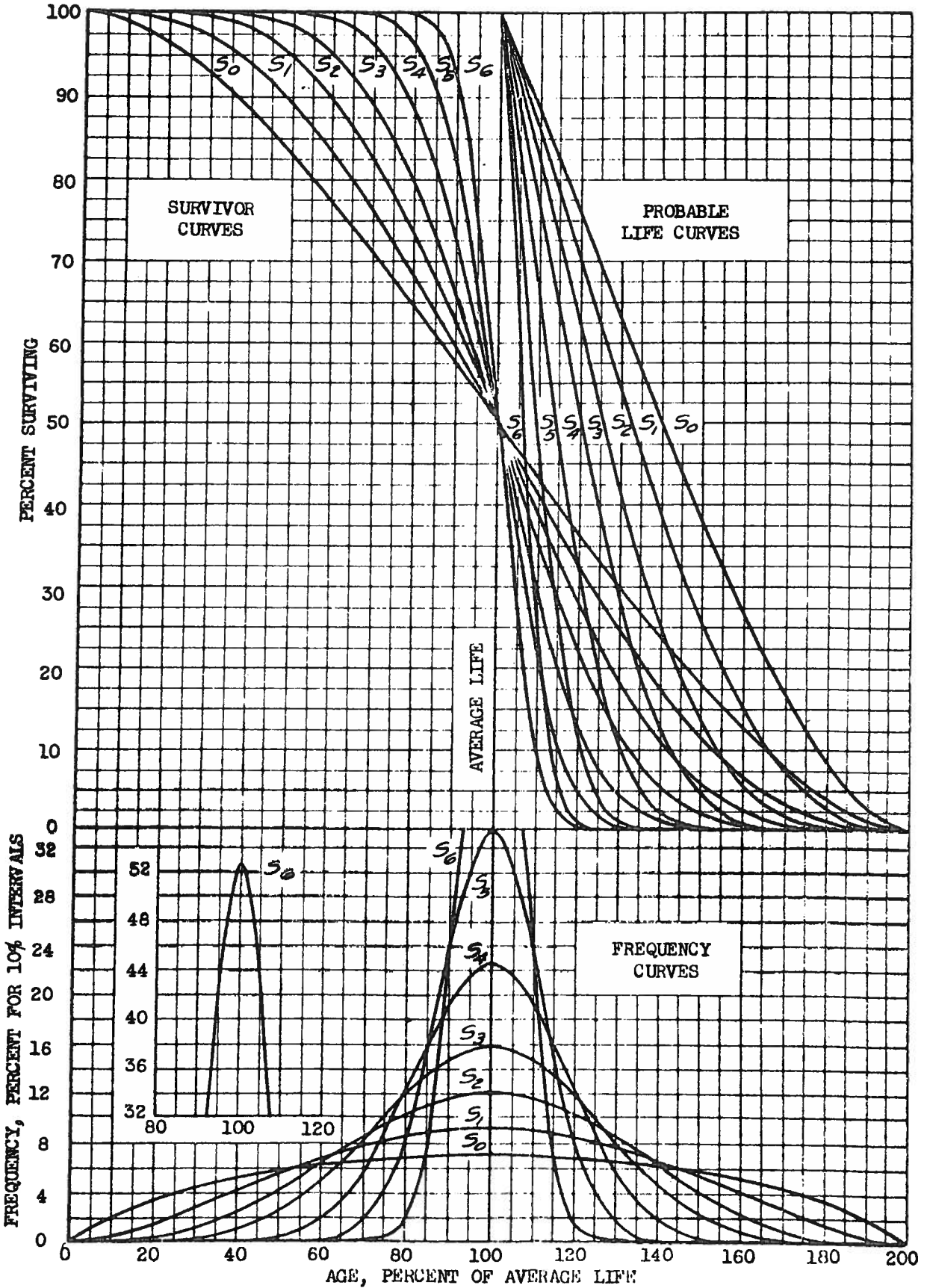
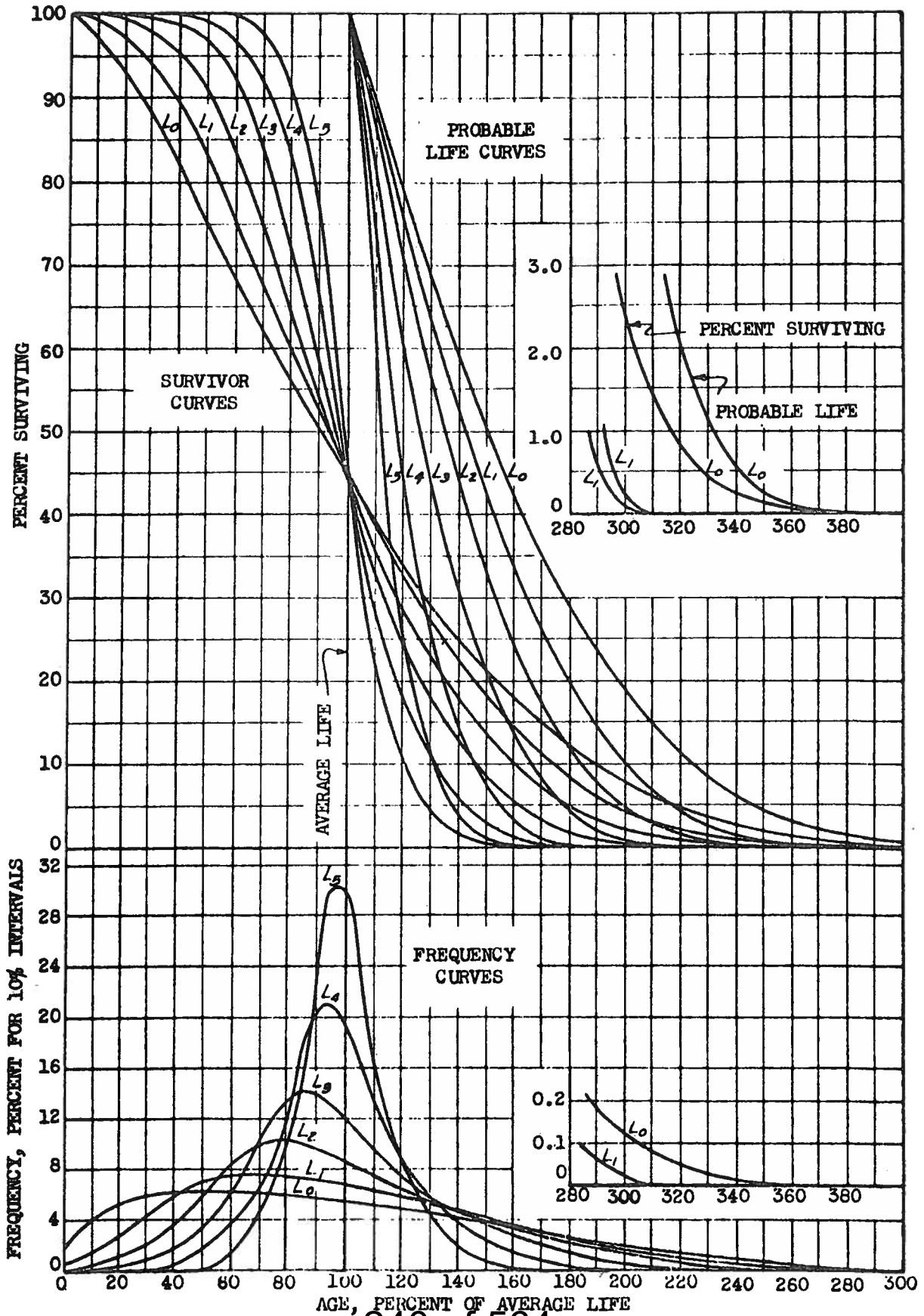


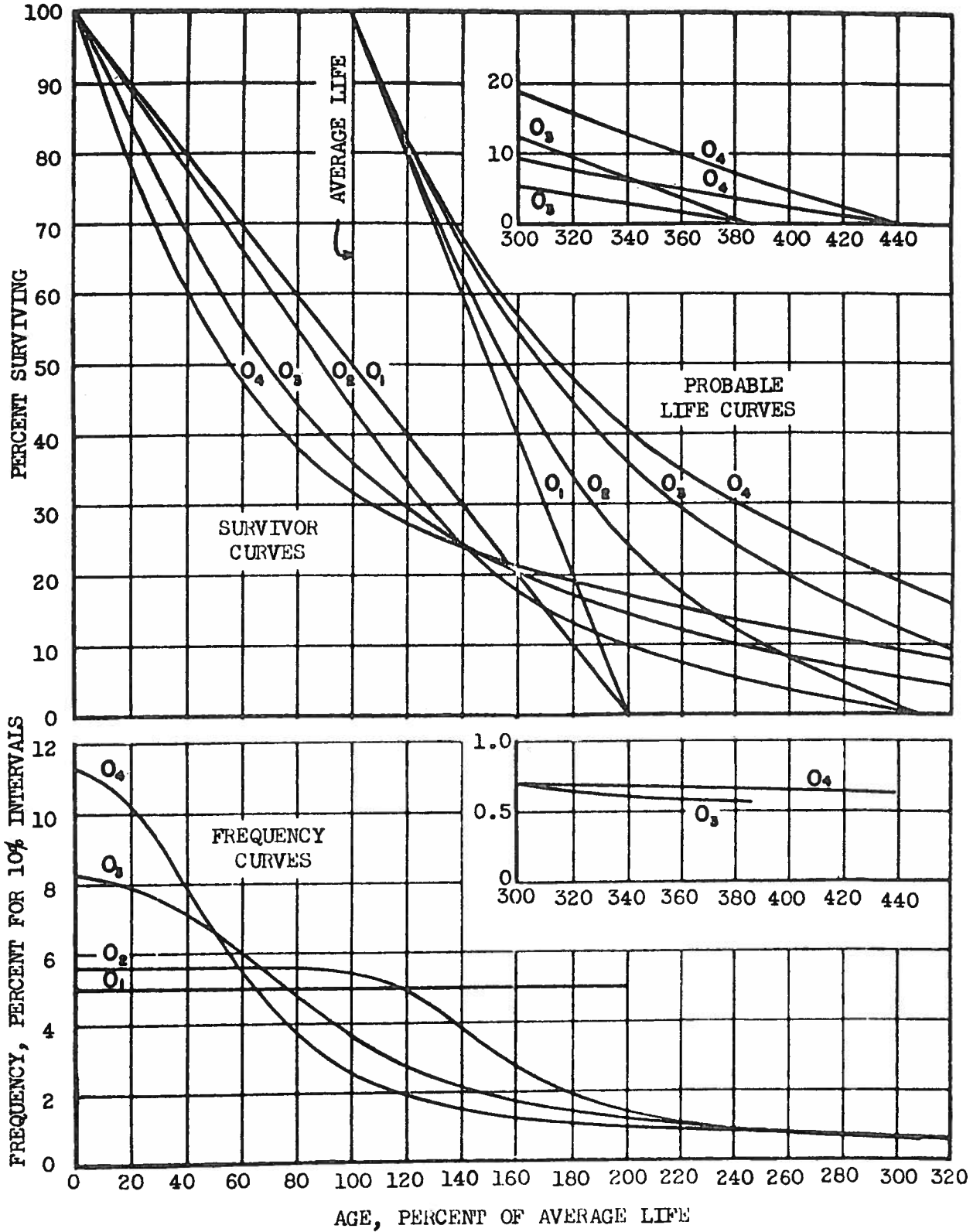
CHART NO. 7

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE LEFT-MODAL IOWA TYPE CURVES



240 of 564
Iowa Survivor Curves

SURVIVOR, PROBABLE LIFE AND FREQUENCY CURVES
FOR THE ORIGIN-MODAL TYPE CURVES



Appendix A-5.1 (WAD)

IowaCurves.xls

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % Depr Resv
R2.0000	R2.0	0	0.0948315	100.0000000	100.0000000	0.0000000
R2.0001	R2.0	1	0.0981016	99.9051685	99.0944462	0.9055538
R2.0002	R2.0	2	0.1014623	99.8070669	98.1913567	1.8086433
R2.0003	R2.0	3	0.1049099	99.7056046	97.2907686	2.7092314
R2.0004	R2.0	4	0.1084509	99.6006947	96.3927202	3.6072798
R2.0005	R2.0	5	0.1120825	99.4922438	95.4972458	4.5027542
R2.0006	R2.0	6	0.1158104	99.3801613	94.6043863	5.3956137
R2.0007	R2.0	7	0.1196318	99.2643509	93.7141762	6.2858238
R2.0008	R2.0	8	0.1235532	99.1447191	92.8266525	7.1733475
R2.0009	R2.0	9	0.1275731	99.0211659	91.9418526	8.0581474
R2.0010	R2.0	10	0.1316938	98.8935928	91.0598126	8.9401874
R2.0011	R2.0	11	0.1359167	98.7618990	90.1805687	9.8194313
R2.0012	R2.0	12	0.1402454	98.6259823	89.3041592	10.6958408
R2.0013	R2.0	13	0.1446791	98.4857369	88.4306173	11.5693827
R2.0014	R2.0	14	0.1492214	98.3410578	87.5599813	12.4400187
R2.0015	R2.0	15	0.1538735	98.1918364	86.6922846	13.3077154
R2.0016	R2.0	16	0.1586370	98.0379629	85.8275662	14.1724338
R2.0017	R2.0	17	0.1635142	97.8793259	84.9658604	15.0341396
R2.0018	R2.0	18	0.1685056	97.7158117	84.1072016	15.8927984
R2.0019	R2.0	19	0.1736164	97.5473061	83.2516279	16.7483721
R2.0020	R2.0	20	0.1788426	97.3736897	82.3991718	17.6008282
R2.0021	R2.0	21	0.1841926	97.1948471	81.5498714	18.4501286
R2.0022	R2.0	22	0.1896649	97.0106545	80.7037592	19.2962408
R2.0023	R2.0	23	0.1952619	96.8209896	79.8608723	20.1391277
R2.0024	R2.0	24	0.2009860	96.6257277	79.0212450	20.9787550
R2.0025	R2.0	25	0.2068376	96.4247417	78.1849127	21.8150873
R2.0026	R2.0	26	0.2128210	96.2179041	77.3519096	22.6480904
R2.0027	R2.0	27	0.2189369	96.0050831	76.5222740	23.4777260
R2.0028	R2.0	28	0.2251892	95.7861462	75.6960373	24.3039627
R2.0029	R2.0	29	0.2315760	95.5609570	74.8732357	25.1267643
R2.0030	R2.0	30	0.2381039	95.3293810	74.0539045	25.9460955
R2.0031	R2.0	31	0.2447710	95.0912771	73.2380800	26.7619200
R2.0032	R2.0	32	0.2515831	94.8465061	72.4257956	27.5742044
R2.0033	R2.0	33	0.2585392	94.5949230	71.6170883	28.3829117
R2.0034	R2.0	34	0.2656450	94.3363838	70.8119927	29.1880073
R2.0035	R2.0	35	0.2728977	94.0707388	70.0105457	29.9894543
R2.0036	R2.0	36	0.2803049	93.7978411	69.2127819	30.7872181
R2.0037	R2.0	37	0.2878657	93.5175362	68.4187384	31.5812616
R2.0038	R2.0	38	0.2955808	93.2296705	67.6284504	32.3715496
R2.0039	R2.0	39	0.3034544	92.9340897	66.8419552	33.1580448
R2.0040	R2.0	40	0.3114920	92.6306353	66.0592899	33.9407101
R2.0041	R2.0	41	0.3196878	92.3191433	65.2808571	34.7191429
R2.0042	R2.0	42	0.3280507	91.9994555	64.5055971	35.4944029
R2.0043	R2.0	43	0.3365783	91.6714048	63.7346439	36.2653561
R2.0044	R2.0	44	0.3452769	91.3348265	62.9676700	37.0323300

Appendix A-5.1 (WAD)

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0045	R2.0	45	0.3541450	90.9895496	62.2047148	37.7952852
R2.0046	R2.0	46	0.3631840	90.6354046	61.4458170	38.5541830
R2.0047	R2.0	47	0.3723984	90.2722206	60.6910148	39.3089852
R2.0048	R2.0	48	0.3817892	89.8998222	59.9403491	40.0596509
R2.0049	R2.0	49	0.3913574	89.5180330	59.1938582	40.8061418
R2.0050	R2.0	50	0.4011030	89.1266756	58.4515839	41.5484161
R2.0051	R2.0	51	0.4110289	88.7255726	57.7135668	42.2864332
R2.0052	R2.0	52	0.4211368	88.3145437	56.9798470	43.0201530
R2.0053	R2.0	53	0.4314261	87.8934069	56.2504678	43.7495322
R2.0054	R2.0	54	0.4419002	87.4619808	55.5254688	44.4745312
R2.0055	R2.0	55	0.4525547	87.0200806	54.8048959	45.1951041
R2.0056	R2.0	56	0.4633961	86.5675259	54.0887899	45.9112101
R2.0057	R2.0	57	0.4744196	86.1041298	53.3771148	46.6228852
R2.0058	R2.0	58	0.4856272	85.6297102	52.6701531	47.3298469
R2.0059	R2.0	59	0.4970178	85.1440830	51.9677110	48.0322890
R2.0060	R2.0	60	0.5085907	84.6470652	51.2699108	48.7300892
R2.0061	R2.0	61	0.5203457	84.1384745	50.5767999	49.4232001
R2.0062	R2.0	62	0.5322781	83.6181288	49.8884211	50.1115789
R2.0063	R2.0	63	0.5443878	83.0858507	49.2042208	50.7957792
R2.0064	R2.0	64	0.5566711	82.5414629	48.5260449	51.4739551
R2.0065	R2.0	65	0.5691252	81.9847918	47.8521390	52.1478610
R2.0066	R2.0	66	0.5817490	81.4156666	47.1831479	52.8168521
R2.0067	R2.0	67	0.5945339	80.8339176	46.5191188	53.4808812
R2.0068	R2.0	68	0.6074762	80.2393837	45.8600979	54.1399021
R2.0069	R2.0	69	0.6205731	79.6319075	45.2061300	54.7938700
R2.0070	R2.0	70	0.6338167	79.0113344	44.5572619	55.4427381
R2.0071	R2.0	71	0.6471968	78.3775177	43.9135399	56.0864601
R2.0072	R2.0	72	0.6607103	77.7303209	43.2750101	56.7249899
R2.0073	R2.0	73	0.6743469	77.0696106	42.6417151	57.3582849
R2.0074	R2.0	74	0.6880913	76.3952637	42.0137038	57.9862962
R2.0075	R2.0	75	0.7019453	75.7071724	41.3910160	58.6089840
R2.0076	R2.0	76	0.7158861	75.0052271	40.7736988	59.2263012
R2.0077	R2.0	77	0.7299071	74.2893410	40.1617951	59.8382049
R2.0078	R2.0	78	0.7439918	73.5594339	39.5553460	60.4446540
R2.0079	R2.0	79	0.7581263	72.8154421	38.9543939	61.0456061
R2.0080	R2.0	80	0.7722978	72.0573158	38.3589792	61.6410208
R2.0081	R2.0	81	0.7864914	71.2850180	37.7691412	62.2308588
R2.0082	R2.0	82	0.8006802	70.4985266	37.1849198	62.8150802
R2.0083	R2.0	83	0.8148537	69.6978464	36.6063528	63.3936472
R2.0084	R2.0	84	0.8289880	68.8829927	36.0334740	63.9665260
R2.0085	R2.0	85	0.8430577	68.0540047	35.4663181	64.5336819
R2.0086	R2.0	86	0.8570489	67.2109470	34.9049168	65.0950832
R2.0087	R2.0	87	0.8709355	66.3538981	34.3493028	65.6506972
R2.0088	R2.0	88	0.8846855	65.4829626	33.7995038	66.2004962
R2.0089	R2.0	89	0.8982801	64.5982771	33.2555461	66.7444539

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0090	R2.0	90	0.9116889	63.6999970	32.7174568	67.2825432
R2.0091	R2.0	91	0.9248881	62.7883081	32.1852560	67.8147440
R2.0092	R2.0	92	0.9378390	61.8634200	31.6589661	68.3410339
R2.0093	R2.0	93	0.9505158	60.9255810	31.1386020	68.8613980
R2.0094	R2.0	94	0.9628930	59.9750652	30.6241779	69.3758221
R2.0095	R2.0	95	0.9749274	59.0121722	30.1157100	69.8842900
R2.0096	R2.0	96	0.9865956	58.0372448	29.6132040	70.3867960
R2.0097	R2.0	97	0.9978571	57.0506492	29.1166680	70.8833320
R2.0098	R2.0	98	1.0086742	56.0527921	28.6261051	71.3738949
R2.0099	R2.0	99	1.0190200	55.0441179	28.1415110	71.8584890
R2.0100	R2.0	100	1.0288558	54.0250979	27.6628840	72.3371160
R2.0101	R2.0	101	1.0381442	52.9962421	27.1902180	72.8097820
R2.0102	R2.0	102	1.0468449	51.9580979	26.7234991	73.2765009
R2.0103	R2.0	103	1.0549312	50.9112530	26.2627111	73.7372889
R2.0104	R2.0	104	1.0623607	49.8563218	25.8078351	74.1921649
R2.0105	R2.0	105	1.0691033	48.7939611	25.3588469	74.6411531
R2.0106	R2.0	106	1.0751200	47.7248578	24.9157200	75.0842800
R2.0107	R2.0	107	1.0803718	46.6497378	24.4784200	75.5215800
R2.0108	R2.0	108	1.0848422	45.5693660	24.0469079	75.9530921
R2.0109	R2.0	109	1.0884819	44.4845238	23.6211450	76.3788550
R2.0110	R2.0	110	1.0912700	43.3960419	23.2010810	76.7989190
R2.0111	R2.0	111	1.0931697	42.3047719	22.7866659	77.2133341
R2.0112	R2.0	112	1.0941701	41.2116022	22.3778369	77.6221631
R2.0113	R2.0	113	1.0942240	40.1174321	21.9745369	78.0254631
R2.0114	R2.0	114	1.0933342	39.0232081	21.5766909	78.4233091
R2.0115	R2.0	115	1.0914621	37.9298739	21.1842289	78.8157711
R2.0116	R2.0	116	1.0885978	36.8384118	20.7970691	79.2029309
R2.0117	R2.0	117	1.0847301	35.7498140	20.4151239	79.5848761
R2.0118	R2.0	118	1.0798369	34.6650839	20.0383019	79.9616981
R2.0119	R2.0	119	1.0739369	33.5852470	19.6665001	80.3334999
R2.0120	R2.0	120	1.0669980	32.5113101	19.2996221	80.7003779
R2.0121	R2.0	121	1.0590372	31.4443121	18.9375479	81.0624521
R2.0122	R2.0	122	1.0501070	30.3852749	18.5801630	81.4198370
R2.0123	R2.0	123	1.0400660	29.3351679	18.2273769	81.7726231
R2.0124	R2.0	124	1.0290709	28.2951019	17.8789959	82.1210041
R2.0125	R2.0	125	1.0170991	27.2660310	17.5349121	82.4650879
R2.0126	R2.0	126	1.0041568	26.2489319	17.1949849	82.8050151
R2.0127	R2.0	127	0.9902881	25.2447751	16.8590529	83.1409471
R2.0128	R2.0	128	0.9755079	24.2544870	16.5269830	83.4730170
R2.0129	R2.0	129	0.9598532	23.2789791	16.1985951	83.8014049
R2.0130	R2.0	130	0.9433670	22.3191259	15.8737270	84.1262730
R2.0131	R2.0	131	0.9260879	21.3757589	15.5522090	84.4477910
R2.0132	R2.0	132	0.9080550	20.4496710	15.2338660	84.7661340
R2.0133	R2.0	133	0.8893190	19.5416160	14.9185150	85.0814850
R2.0134	R2.0	134	0.8699369	18.6522970	14.6059730	85.3940270

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.0135	R2.0	135	0.8499541	17.7823601	14.2960570	85.7039430
R2.0136	R2.0	136	0.8294290	16.9324060	13.9885750	86.0114250
R2.0137	R2.0	137	0.8084200	16.1029770	13.6833420	86.3166580
R2.0138	R2.0	138	0.7869870	15.2945570	13.3801709	86.6198291
R2.0139	R2.0	139	0.7651829	14.5075700	13.0788760	86.9211240
R2.0140	R2.0	140	0.7430681	13.7423871	12.7792740	87.2207260
R2.0141	R2.0	141	0.7207081	12.9993190	12.4811831	87.5188169
R2.0142	R2.0	142	0.6981599	12.2786109	12.1844341	87.8155659
R2.0143	R2.0	143	0.6754730	11.5804510	11.8888620	88.1111380
R2.0144	R2.0	144	0.6527110	10.9049780	11.5943070	88.4056930
R2.0145	R2.0	145	0.6299220	10.2522670	11.3006270	88.6993730
R2.0146	R2.0	146	0.6071579	9.6223450	11.0076849	88.9923151
R2.0147	R2.0	147	0.5844650	9.0151870	10.7153600	89.2846400
R2.0148	R2.0	148	0.5618890	8.4307220	10.4235460	89.5764540
R2.0149	R2.0	149	0.5394630	7.8688330	10.1321560	89.8678440
R2.0150	R2.0	150	0.5172310	7.3293700	9.8411110	90.1588891
R2.0151	R2.0	151	0.4952170	6.8121390	9.5503610	90.4496390
R2.0152	R2.0	152	0.4734520	6.3169220	9.2598670	90.7401331
R2.0153	R2.0	153	0.4519570	5.8434700	8.9696111	91.0303890
R2.0154	R2.0	154	0.4307510	5.3915130	8.6795980	91.3204020
R2.0155	R2.0	155	0.4098480	4.9607620	8.3898460	91.6101540
R2.0156	R2.0	156	0.3892590	4.5509140	8.1003940	91.8996060
R2.0157	R2.0	157	0.3689940	4.1616550	7.8112940	92.1887060
R2.0158	R2.0	158	0.3490550	3.7926610	7.5226200	92.4773800
R2.0159	R2.0	159	0.3294490	3.4436060	7.2344580	92.7655420
R2.0160	R2.0	160	0.3101780	3.1141570	6.9468990	93.0531010
R2.0161	R2.0	161	0.2912410	2.8039790	6.6600590	93.3399410
R2.0162	R2.0	162	0.2726440	2.5127380	6.3740460	93.6259540
R2.0163	R2.0	163	0.2543900	2.2400940	6.0889820	93.9110180
R2.0164	R2.0	164	0.2364840	1.9857040	5.8049920	94.1950080
R2.0165	R2.0	165	0.2189350	1.7492200	5.5221940	94.4778060
R2.0166	R2.0	166	0.2017570	1.5302850	5.2407130	94.7592870
R2.0167	R2.0	167	0.1849660	1.3285280	4.9606590	95.0393410
R2.0168	R2.0	168	0.1685830	1.1435620	4.6821490	95.3178510
R2.0169	R2.0	169	0.1526310	0.9749790	4.4052860	95.5947140
R2.0170	R2.0	170	0.1371620	0.8223480	4.1301220	95.8698780
R2.0171	R2.0	171	0.1221950	0.6851860	3.8568020	96.1431980
R2.0172	R2.0	172	0.1077830	0.5629910	3.5853840	96.4146160
R2.0173	R2.0	173	0.0939780	0.4552080	3.3159460	96.6840540
R2.0174	R2.0	174	0.0808330	0.3612300	3.0485230	96.9514770
R2.0175	R2.0	175	0.0684150	0.2803970	2.7832120	97.2167880
R2.0176	R2.0	176	0.0567860	0.2119820	2.5201260	97.4798740
R2.0177	R2.0	177	0.0460210	0.1551960	2.2592980	97.7407020
R2.0178	R2.0	178	0.0361913	0.1091750	2.0008840	97.9991160
R2.0179	R2.0	179	0.0273739	0.0729837	1.7451020	98.2548980

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5000	R2.5	0	0.0551548	100.0000000	100.0000000	0.0000000
R2.5001	R2.5	1	0.0574713	99.9448452	99.0549097	0.9450903
R2.5002	R2.5	2	0.0598783	99.8873739	98.1116142	1.8883858
R2.5003	R2.5	3	0.0623808	99.8274956	97.1701632	2.8298368
R2.5004	R2.5	4	0.0649805	99.7651148	96.2306089	3.7693911
R2.5005	R2.5	5	0.0676823	99.7001343	95.2930031	4.7069969
R2.5006	R2.5	6	0.0704880	99.6324520	94.3573971	5.6426029
R2.5007	R2.5	7	0.0734014	99.5619640	93.4238472	6.5761528
R2.5008	R2.5	8	0.0764256	99.4885626	92.4924040	7.5075960
R2.5009	R2.5	9	0.0795669	99.4121370	91.5631256	8.4368744
R2.5010	R2.5	10	0.0828257	99.3325701	90.6360693	9.3639307
R2.5011	R2.5	11	0.0862064	99.2497444	89.7112904	10.2887096
R2.5012	R2.5	12	0.0897122	99.1635380	88.7888441	11.2111559
R2.5013	R2.5	13	0.0933485	99.0738258	87.8687897	12.1312103
R2.5014	R2.5	14	0.0971183	98.9804773	86.9511881	13.0488119
R2.5015	R2.5	15	0.1010247	98.8833590	86.0360956	13.9639044
R2.5016	R2.5	16	0.1050710	98.7823343	85.1235743	14.8764257
R2.5017	R2.5	17	0.1092635	98.6772633	84.2136803	15.7863197
R2.5018	R2.5	18	0.1136026	98.5679998	83.3064766	16.6935234
R2.5019	R2.5	19	0.1180954	98.4543972	82.4020252	17.5979748
R2.5020	R2.5	20	0.1227426	98.3363018	81.5003834	18.4996166
R2.5021	R2.5	21	0.1275521	98.2135592	80.6016140	19.3983860
R2.5022	R2.5	22	0.1325226	98.0860071	79.7057791	20.2942209
R2.5023	R2.5	23	0.1376619	97.9534845	78.8129368	21.1870632
R2.5024	R2.5	24	0.1429729	97.8158226	77.9231520	22.0768480
R2.5025	R2.5	25	0.1484576	97.6728497	77.0364828	22.9635172
R2.5026	R2.5	26	0.1541233	97.5243921	76.1529923	23.8470077
R2.5027	R2.5	27	0.1599703	97.3702688	75.2727404	24.7272596
R2.5028	R2.5	28	0.1660032	97.2102985	74.3957863	25.6042137
R2.5029	R2.5	29	0.1722278	97.0442953	73.5221920	26.4778080
R2.5030	R2.5	30	0.1786452	96.8720675	72.6520176	27.3479824
R2.5031	R2.5	31	0.1852608	96.6934223	71.7853222	28.2146778
R2.5032	R2.5	32	0.1920747	96.5081615	70.9221630	29.0778370
R2.5033	R2.5	33	0.1990958	96.3160868	70.0626001	29.9373999
R2.5034	R2.5	34	0.2063245	96.1169910	69.2066917	30.7933083
R2.5035	R2.5	35	0.2137642	95.9106665	68.3544951	31.6455049
R2.5036	R2.5	36	0.2214194	95.6969023	67.5060663	32.4939337
R2.5037	R2.5	37	0.2292928	95.4754829	66.6614609	33.3385391
R2.5038	R2.5	38	0.2373877	95.2461901	65.8207359	34.1792641
R2.5039	R2.5	39	0.2457084	95.0088024	64.9839459	35.0160541
R2.5040	R2.5	40	0.2542592	94.7630940	64.1511440	35.8488560
R2.5041	R2.5	41	0.2630376	94.5088348	63.3223858	36.6776142
R2.5042	R2.5	42	0.2720566	94.2457972	62.4977222	37.5022778
R2.5043	R2.5	43	0.2813111	93.9737406	61.6772060	38.3227940
R2.5044	R2.5	44	0.2908077	93.6924295	60.8608909	39.1391091

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5045	R2.5	45	0.3005543	93.4016218	60.0488248	39.9511752
R2.5046	R2.5	46	0.3105459	93.1010675	59.2410641	40.7589359
R2.5047	R2.5	47	0.3207922	92.7905216	58.4376559	41.5623441
R2.5048	R2.5	48	0.3312959	92.4697294	57.6386509	42.3613491
R2.5049	R2.5	49	0.3420601	92.1384335	56.8441010	43.1558990
R2.5050	R2.5	50	0.3530903	91.7963734	56.0540552	43.9459448
R2.5051	R2.5	51	0.3643885	91.4432831	55.2685661	44.7314339
R2.5052	R2.5	52	0.3759584	91.0788946	54.4876838	45.5123162
R2.5053	R2.5	53	0.3878079	90.7029362	53.7114601	46.2885399
R2.5054	R2.5	54	0.3999405	90.3151283	52.9399471	47.0600529
R2.5055	R2.5	55	0.4123592	89.9151878	52.1731982	47.8268018
R2.5056	R2.5	56	0.4250708	89.5028286	51.4112682	48.5887318
R2.5057	R2.5	57	0.4380798	89.0777578	50.6542120	49.3457880
R2.5058	R2.5	58	0.4513912	88.6396780	49.9020872	50.0979128
R2.5059	R2.5	59	0.4650126	88.1882868	49.1549511	50.8450489
R2.5060	R2.5	60	0.4789476	87.7232742	48.4128661	51.5871339
R2.5061	R2.5	61	0.4932022	87.2443266	47.6758952	52.3241048
R2.5062	R2.5	62	0.5077830	86.7511244	46.9441018	53.0558982
R2.5063	R2.5	63	0.5226945	86.2433414	46.2175550	53.7824450
R2.5064	R2.5	64	0.5379439	85.7206469	45.4963250	54.5036750
R2.5065	R2.5	65	0.5535354	85.1827030	44.7804852	55.2195148
R2.5066	R2.5	66	0.5694743	84.6291676	44.0701108	55.9298892
R2.5067	R2.5	67	0.5857687	84.0596933	43.3652830	56.6347170
R2.5068	R2.5	68	0.6024160	83.4739246	42.6660848	57.3339152
R2.5069	R2.5	69	0.6194267	82.8715086	41.9726019	58.0273981
R2.5070	R2.5	70	0.6368008	82.2520819	41.2849250	58.7150750
R2.5071	R2.5	71	0.6545391	81.6152811	40.6031480	59.3968520
R2.5072	R2.5	72	0.6726418	80.9607420	39.9273682	60.0726318
R2.5073	R2.5	73	0.6911087	80.2881002	39.2576852	60.7423148
R2.5074	R2.5	74	0.7099390	79.5969915	38.5942020	61.4057980
R2.5075	R2.5	75	0.7291259	78.8870525	37.9370279	62.0629721
R2.5076	R2.5	76	0.7486620	78.1579266	37.2862740	62.7137260
R2.5077	R2.5	77	0.7685376	77.4092646	36.6420512	63.3579488
R2.5078	R2.5	78	0.7887430	76.6407270	36.0044770	63.9955230
R2.5079	R2.5	79	0.8092565	75.8519840	35.3736682	64.6263318
R2.5080	R2.5	80	0.8300667	75.0427275	34.7497439	65.2502561
R2.5081	R2.5	81	0.8511477	74.2126608	34.1328259	65.8671741
R2.5082	R2.5	82	0.8724718	73.3615131	33.5230379	66.4769621
R2.5083	R2.5	83	0.8940096	72.4890413	32.9204998	67.0795002
R2.5084	R2.5	84	0.9157238	71.5950317	32.3253360	67.6746640
R2.5085	R2.5	85	0.9375753	70.6793079	31.7376659	68.2623341
R2.5086	R2.5	86	0.9595194	69.7417326	31.1576109	68.8423891
R2.5087	R2.5	87	0.9815073	68.7822132	30.5852881	69.4147119
R2.5088	R2.5	88	1.0034790	67.8007059	30.0208130	69.9791870
R2.5089	R2.5	89	1.0253773	66.7972269	29.4642980	70.5357020

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5090	R2.5	90	1.0471344	65.7718496	28.9158480	71.0841520
R2.5091	R2.5	91	1.0686831	64.7247152	28.3755679	71.6244321
R2.5092	R2.5	92	1.0899420	63.6560321	27.8435540	72.1564460
R2.5093	R2.5	93	1.1108289	62.5660901	27.3198969	72.6801031
R2.5094	R2.5	94	1.1312651	61.4552612	26.8046770	73.1953230
R2.5095	R2.5	95	1.1511522	60.3239961	26.2979729	73.7020271
R2.5096	R2.5	96	1.1704039	59.1728439	25.7998481	74.2001519
R2.5097	R2.5	97	1.1889191	58.0024400	25.3103621	74.6896379
R2.5098	R2.5	98	1.2065949	56.8135209	24.8295610	75.1704390
R2.5099	R2.5	99	1.2233358	55.6069260	24.3574791	75.6425209
R2.5100	R2.5	100	1.2390403	54.3835902	23.8941431	76.1058569
R2.5101	R2.5	101	1.2536021	53.1445499	23.4395671	76.5604329
R2.5102	R2.5	102	1.2669158	51.8909478	22.9937501	77.0062499
R2.5103	R2.5	103	1.2788939	50.6240320	22.5566781	77.4433219
R2.5104	R2.5	104	1.2894273	49.3451381	22.1283281	77.8716719
R2.5105	R2.5	105	1.2984328	48.0557108	21.7086580	78.2913420
R2.5106	R2.5	106	1.3058210	46.7572780	21.2976141	78.7023859
R2.5107	R2.5	107	1.3115058	45.4514570	20.8951299	79.1048701
R2.5108	R2.5	108	1.3154220	44.1399512	20.5011189	79.4988811
R2.5109	R2.5	109	1.3175020	42.8245292	20.1154850	79.8845150
R2.5110	R2.5	110	1.3176890	41.5070272	19.7381129	80.2618871
R2.5111	R2.5	111	1.3159404	40.1893382	19.3688741	80.6311259
R2.5112	R2.5	112	1.3122248	38.8733978	19.0076220	80.9923780
R2.5113	R2.5	113	1.3065191	37.5611730	18.6541979	81.3458021
R2.5114	R2.5	114	1.2988228	36.2546539	18.3084259	81.6915741
R2.5115	R2.5	115	1.2891360	34.9558311	17.9701180	82.0298820
R2.5116	R2.5	116	1.2774830	33.6666951	17.6390679	82.3609321
R2.5117	R2.5	117	1.2638931	32.3892121	17.3150611	82.6849389
R2.5118	R2.5	118	1.2484150	31.1253190	16.9978631	83.0021369
R2.5119	R2.5	119	1.2311139	29.8769040	16.6872311	83.3127689
R2.5120	R2.5	120	1.2120590	28.6457901	16.3829119	83.6170881
R2.5121	R2.5	121	1.1913381	27.4337311	16.0846400	83.9153600
R2.5122	R2.5	122	1.1690731	26.2423930	15.7921439	84.2078561
R2.5123	R2.5	123	1.1452968	25.0733199	15.5051580	84.4948420
R2.5124	R2.5	124	1.1201971	23.9280231	15.2233681	84.7766319
R2.5125	R2.5	125	1.0938761	22.8078260	14.9465010	85.0534990
R2.5126	R2.5	126	1.0664589	21.7139499	14.6742671	85.3257329
R2.5127	R2.5	127	1.0380819	20.6474910	14.4063790	85.5936210
R2.5128	R2.5	128	1.0088780	19.6094091	14.1425540	85.8574460
R2.5129	R2.5	129	0.9789822	18.6005311	13.8825150	86.1174850
R2.5130	R2.5	130	0.9485328	17.6215489	13.6259940	86.3740060
R2.5131	R2.5	131	0.9176611	16.6730161	13.3727360	86.6272640
R2.5132	R2.5	132	0.8864870	15.7553550	13.1224999	86.8775001
R2.5133	R2.5	133	0.8551400	14.8688680	12.8750581	87.1249419
R2.5134	R2.5	134	0.8237340	14.0137280	12.6302040	87.3697960

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5135	R2.5	135	0.7923711	13.1899940	12.3877521	87.6122479
R2.5136	R2.5	136	0.7611500	12.3976229	12.1475360	87.8524640
R2.5137	R2.5	137	0.7301579	11.6364729	11.9094091	88.0905909
R2.5138	R2.5	138	0.6994760	10.9063150	11.6732490	88.3267510
R2.5139	R2.5	139	0.6691670	10.2068390	11.4389530	88.5610470
R2.5140	R2.5	140	0.6392890	9.5376720	11.2064340	88.7935660
R2.5141	R2.5	141	0.6098980	8.8983830	10.9756200	89.0243800
R2.5142	R2.5	142	0.5810320	8.2884851	10.7464550	89.2535450
R2.5143	R2.5	143	0.5527210	7.7074530	10.5188921	89.4811079
R2.5144	R2.5	144	0.5249980	7.1547320	10.2928760	89.7071240
R2.5145	R2.5	145	0.4978830	6.6297340	10.0683579	89.9316421
R2.5146	R2.5	146	0.4713970	6.1318510	9.8452730	90.1547270
R2.5147	R2.5	147	0.4455530	5.6604540	9.6235380	90.3764620
R2.5148	R2.5	148	0.4203759	5.2149010	9.4030380	90.5969620
R2.5149	R2.5	149	0.3958700	4.7945250	9.1836420	90.8163580
R2.5150	R2.5	150	0.3720580	4.3986550	8.9651520	91.0348480
R2.5151	R2.5	151	0.3489550	4.0265970	8.7473331	91.2526670
R2.5152	R2.5	152	0.3265810	3.6776420	8.5298860	91.4701140
R2.5153	R2.5	153	0.3049580	3.3510610	8.3124470	91.6875531
R2.5154	R2.5	154	0.2841100	3.0461030	8.0945830	91.9054170
R2.5155	R2.5	155	0.2640620	2.7619930	7.8757930	92.1242070
R2.5156	R2.5	156	0.2448380	2.4979310	7.6555050	92.3444950
R2.5157	R2.5	157	0.2264680	2.2530930	7.4330760	92.5669240
R2.5158	R2.5	158	0.2089740	2.0266250	7.2078220	92.7921780
R2.5159	R2.5	159	0.1923820	1.8176510	6.9790150	93.0209850
R2.5160	R2.5	160	0.1767130	1.6252690	6.7459320	93.2540680
R2.5161	R2.5	161	0.1619790	1.4485560	6.5078890	93.4921110
R2.5162	R2.5	162	0.1481900	1.2865770	6.2642780	93.7357220
R2.5163	R2.5	163	0.1353470	1.1383870	6.0146450	93.9853550
R2.5164	R2.5	164	0.1234370	1.0030400	5.7587730	94.2412270
R2.5165	R2.5	165	0.1124400	0.8796030	5.4967510	94.5032490
R2.5166	R2.5	166	0.1023100	0.7671630	5.2291050	94.7708950
R2.5167	R2.5	167	0.0929890	0.6648530	4.9568360	95.0431640
R2.5168	R2.5	168	0.0843740	0.5718640	4.6815480	95.3184520
R2.5169	R2.5	169	0.0763160	0.4874900	4.4052840	95.5947160
R2.5170	R2.5	170	0.0685810	0.4111740	4.1301250	95.8698750
R2.5171	R2.5	171	0.0610970	0.3425930	3.8568110	96.1431890
R2.5172	R2.5	172	0.0538920	0.2814960	3.5853870	96.4146130
R2.5173	R2.5	173	0.0469890	0.2276040	3.3159430	96.6840570
R2.5174	R2.5	174	0.0404160	0.1806150	3.0485420	96.9514580
R2.5175	R2.5	175	0.0342080	0.1401990	2.7832260	97.2167740
R2.5176	R2.5	176	0.0283930	0.1059910	2.5201240	97.4798760
R2.5177	R2.5	177	0.0230100	0.0775980	2.2592850	97.7407150
R2.5178	R2.5	178	0.0181160	0.0545880	2.0008610	97.9991390
R2.5179	R2.5	179	0.0136670	0.0364720	1.7451220	98.2548780

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R2.5180	R2.5	180	0.0098240	0.0228050	1.4924140	98.5075860
R2.5181	R2.5	181	0.0065460	0.0129810	1.2434710	98.7565290
R2.5182	R2.5	182	0.0038930	0.0064350	0.9997670	99.0002330
R2.5183	R2.5	183	0.0019010	0.0025420	0.7651460	99.2348540
R2.5184	R2.5	184	0.0006080	0.0006410	0.5514820	99.4485180
R2.5185	R2.5	185	0.0000330	0.0000330	0.5000000	99.5000000
R2.5186	R2.5	186	0.0000000	0.0000000	0.0000000	100.0000000

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R3.0000	R3.0	0	0.0154791	100.0000000	100.0000000	0.0000000
R3.0001	R3.0	1	0.0168400	99.9845209	99.0154038	0.9845962
R3.0002	R3.0	2	0.0182953	99.9676809	98.0319996	1.9680004
R3.0003	R3.0	3	0.0198507	99.9493856	97.0498524	2.9501476
R3.0004	R3.0	4	0.0215111	99.9295349	96.0690317	3.9309683
R3.0005	R3.0	5	0.0232811	99.9080238	95.0896082	4.9103918
R3.0006	R3.0	6	0.0251655	99.8847427	94.1116552	5.8883448
R3.0007	R3.0	7	0.0271702	99.8595772	93.1352463	6.8647537
R3.0008	R3.0	8	0.0292997	99.8324070	92.1604576	7.8395424
R3.0009	R3.0	9	0.0315600	99.8031073	91.1873674	8.8126326
R3.0010	R3.0	10	0.0339584	99.7715473	90.2160540	9.7839460
R3.0011	R3.0	11	0.0364952	99.7375889	89.2465992	10.7534008
R3.0012	R3.0	12	0.0391798	99.7010937	88.2790852	11.7209148
R3.0013	R3.0	13	0.0420189	99.6619139	87.3135939	12.6864061
R3.0014	R3.0	14	0.0450144	99.6198950	86.3502102	13.6497898
R3.0015	R3.0	15	0.0481758	99.5748806	85.3890209	14.6109791
R3.0016	R3.0	16	0.0515060	99.5267048	84.4301109	15.5698891
R3.0017	R3.0	17	0.0550118	99.4751988	83.4735680	16.5264320
R3.0018	R3.0	18	0.0586996	99.4201870	82.5194798	17.4805202
R3.0019	R3.0	19	0.0625744	99.3614874	81.5679340	18.4320660
R3.0020	R3.0	20	0.0666428	99.2989130	80.6190205	19.3809795
R3.0021	R3.0	21	0.0709104	99.2322702	79.6728268	20.3271732
R3.0022	R3.0	22	0.0753794	99.1613598	78.7294426	21.2705574
R3.0023	R3.0	23	0.0800638	99.0859804	77.7889566	22.2110434
R3.0024	R3.0	24	0.0849600	99.0059166	76.8514566	23.1485434
R3.0025	R3.0	25	0.0900774	98.9209566	75.9170332	24.0829668
R3.0026	R3.0	26	0.0954256	98.8308792	74.9857712	25.0142288
R3.0027	R3.0	27	0.1010027	98.7354536	74.0577602	25.9422398
R3.0028	R3.0	28	0.1068191	98.6344509	73.1330843	26.8669157
R3.0029	R3.0	29	0.1128788	98.5276318	72.2118292	27.7881708
R3.0030	R3.0	30	0.1191874	98.4147530	71.2940807	28.7059193
R3.0031	R3.0	31	0.1257477	98.2955656	70.3799210	29.6200790
R3.0032	R3.0	32	0.1325683	98.1698179	69.4694319	30.5305681
R3.0033	R3.0	33	0.1396523	98.0372496	68.5626936	31.4373064
R3.0034	R3.0	34	0.1470041	97.8975973	67.6597862	32.3402138
R3.0035	R3.0	35	0.1546307	97.7505932	66.7607861	33.2392139
R3.0036	R3.0	36	0.1625337	97.5959625	65.8657694	34.1342306
R3.0037	R3.0	37	0.1707211	97.4334288	64.9748087	35.0251913
R3.0038	R3.0	38	0.1791944	97.2627077	64.0879793	35.9120207
R3.0039	R3.0	39	0.1879616	97.0835133	63.2053480	36.7946520
R3.0040	R3.0	40	0.1970244	96.8955517	62.3269858	37.6730142
R3.0041	R3.0	41	0.2063894	96.6985273	61.4529600	38.5470400
R3.0042	R3.0	42	0.2160606	96.4921379	60.5833340	39.4166660
R3.0043	R3.0	43	0.2260437	96.2760773	59.7181711	40.2818289
R3.0044	R3.0	44	0.2363405	96.0500336	58.8575339	41.1424661

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Percent Retired, Surviving, Condition, and Depreciation Reserve
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1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R3.0045	R3.0	45	0.2469616	95.8136931	58.0014839	41.9985161
R3.0046	R3.0	46	0.2579089	95.5667315	57.1500778	42.8499222
R3.0047	R3.0	47	0.2691869	95.3088226	56.3033738	43.6966262
R3.0048	R3.0	48	0.2808028	95.0396357	55.4614301	44.5385699
R3.0049	R3.0	49	0.2927637	94.7588329	54.6243000	45.3757000
R3.0050	R3.0	50	0.3050775	94.4660692	53.7920389	46.2079611
R3.0051	R3.0	51	0.3177452	94.1609917	52.9647021	47.0352979
R3.0052	R3.0	52	0.3307829	93.8432465	52.1423440	47.8576560
R3.0053	R3.0	53	0.3441897	93.5124636	51.3250179	48.6749821
R3.0054	R3.0	54	0.3579797	93.1682739	50.5127802	49.4872198
R3.0055	R3.0	55	0.3721629	92.8102942	49.7056861	50.2943139
R3.0056	R3.0	56	0.3867464	92.4381313	48.9037910	51.0962090
R3.0057	R3.0	57	0.4017400	92.0513849	48.1071558	51.8928442
R3.0058	R3.0	58	0.4171553	91.6496449	47.3158379	52.6841621
R3.0059	R3.0	59	0.4330063	91.2324896	46.5299010	53.4700990
R3.0060	R3.0	60	0.4493046	90.7994833	45.7494102	54.2505898
R3.0061	R3.0	61	0.4660597	90.3501787	44.9744310	55.0255690
R3.0062	R3.0	62	0.4832878	89.8841190	44.2050362	55.7949638
R3.0063	R3.0	63	0.5010013	89.4008312	43.4412990	56.5587010
R3.0064	R3.0	64	0.5192156	88.8998299	42.6832981	57.3167019
R3.0065	R3.0	65	0.5379458	88.3806143	41.9311161	58.0688839
R3.0066	R3.0	66	0.5572013	87.8426685	41.1848378	58.8151622
R3.0067	R3.0	67	0.5770016	87.2854672	40.4445572	59.5554428
R3.0068	R3.0	68	0.5973559	86.7084656	39.7103682	60.2896318
R3.0069	R3.0	69	0.6182804	86.1111097	38.9823709	61.0176291
R3.0070	R3.0	70	0.6397857	85.4928293	38.2606740	61.7393260
R3.0071	R3.0	71	0.6618805	84.8530436	37.5453868	62.4546132
R3.0072	R3.0	72	0.6845751	84.1911631	36.8366242	63.1633758
R3.0073	R3.0	73	0.7078676	83.5065880	36.1345072	63.8654928
R3.0074	R3.0	74	0.7317868	82.7987204	35.4391561	64.5608439
R3.0075	R3.0	75	0.7563066	82.0669336	34.7507062	65.2492938
R3.0076	R3.0	76	0.7814388	81.3106270	34.0692878	65.9307122
R3.0077	R3.0	77	0.8071690	80.5291882	33.3950372	66.6049628
R3.0078	R3.0	78	0.8334932	79.7220192	32.7280932	67.2719068
R3.0079	R3.0	79	0.8603878	78.8885260	32.0685968	67.9314032
R3.0080	R3.0	80	0.8878355	78.0281382	31.4166920	68.5833080
R3.0081	R3.0	81	0.9158049	77.1403027	30.7725229	69.2274771
R3.0082	R3.0	82	0.9442616	76.2244978	30.1362350	69.8637650
R3.0083	R3.0	83	0.9731655	75.2802362	29.5079711	70.4920289
R3.0084	R3.0	84	1.0024595	74.3070707	28.8878751	71.1121249
R3.0085	R3.0	85	1.0320921	73.3046112	28.2760870	71.7239130
R3.0086	R3.0	86	1.0619917	72.2725191	27.6727450	72.3272550
R3.0087	R3.0	87	1.0920782	71.2105274	27.0779829	72.9220171
R3.0088	R3.0	88	1.1222725	70.1184492	26.4919291	73.5080709
R3.0089	R3.0	89	1.1524744	68.9961767	25.9147060	74.0852940

Appendix A-5.1 (WAD)

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R3.0090	R3.0	90	1.1825809	67.8437023	25.3464310	74.6535690
R3.0091	R3.0	91	1.2124787	66.6611214	24.7872109	75.2127891
R3.0092	R3.0	92	1.2420444	65.4486427	24.2371471	75.7628529
R3.0093	R3.0	93	1.2711425	64.2065983	23.6963310	76.3036690
R3.0094	R3.0	94	1.2996359	62.9354558	23.1648400	76.8351600
R3.0095	R3.0	95	1.3273778	61.6358199	22.6427441	77.3572559
R3.0096	R3.0	96	1.3542113	60.3084421	22.1301019	77.8698981
R3.0097	R3.0	97	1.3799820	58.9542308	21.6269579	78.3730421
R3.0098	R3.0	98	1.4045148	57.5742488	21.1333439	78.8666561
R3.0099	R3.0	99	1.4276528	56.1697340	20.6492770	79.3507230
R3.0100	R3.0	100	1.4492231	54.7420812	20.1747630	79.8252370
R3.0101	R3.0	101	1.4690599	53.2928581	19.7097900	80.2902100
R3.0102	R3.0	102	1.4869881	51.8237982	19.2543340	80.7456660
R3.0103	R3.0	103	1.5028572	50.3368101	18.8083510	81.1916490
R3.0104	R3.0	104	1.5164928	48.8339529	18.3717880	81.6282120
R3.0105	R3.0	105	1.5277629	47.3174601	17.9445670	82.0554330
R3.0106	R3.0	106	1.5365224	45.7896972	17.5266011	82.4733989
R3.0107	R3.0	107	1.5426388	44.2531748	17.1177840	82.8822160
R3.0108	R3.0	108	1.5460029	42.7105360	16.7179930	83.2820070
R3.0109	R3.0	109	1.5465211	41.1645331	16.3270869	83.6729131
R3.0110	R3.0	110	1.5441080	39.6180120	15.9449101	84.0550899
R3.0111	R3.0	111	1.5387101	38.0739040	15.5712870	84.4287130
R3.0112	R3.0	112	1.5302810	36.5351939	15.2060260	84.7939740
R3.0113	R3.0	113	1.5188141	35.0049129	14.8489180	85.1510820
R3.0114	R3.0	114	1.5043109	33.4860988	14.4997360	85.5002640
R3.0115	R3.0	115	1.4868099	31.9817879	14.1582340	85.8417660
R3.0116	R3.0	116	1.4663680	30.4949780	13.8241530	86.1758470
R3.0117	R3.0	117	1.4430571	29.0286100	13.4972171	86.5027829
R3.0118	R3.0	118	1.4169929	27.5855529	13.1771280	86.8228720
R3.0119	R3.0	119	1.3882911	26.1685600	12.8635780	87.1364220
R3.0120	R3.0	120	1.3571188	24.7802689	12.5562360	87.4437640
R3.0121	R3.0	121	1.3236401	23.4231501	12.2547650	87.7452350
R3.0122	R3.0	122	1.2880390	22.0995100	11.9588110	88.0411890
R3.0123	R3.0	123	1.2505269	20.8114710	11.6680059	88.3319941
R3.0124	R3.0	124	1.2113230	19.5609441	11.3819740	88.6180260
R3.0125	R3.0	125	1.1706541	18.3496211	11.1003320	88.8996680
R3.0126	R3.0	126	1.1287601	17.1789670	10.8226880	89.1773120
R3.0127	R3.0	127	1.0858769	16.0502069	10.5486490	89.4513510
R3.0128	R3.0	128	1.0422470	14.9643300	10.2778220	89.7221780
R3.0129	R3.0	129	0.9981119	13.9220830	10.0098190	89.9901810
R3.0130	R3.0	130	0.9536992	12.9239711	9.7442570	90.2557430
R3.0131	R3.0	131	0.9092329	11.9702719	9.4807680	90.5192320
R3.0132	R3.0	132	0.8649200	11.0610390	9.2190000	90.7810000
R3.0133	R3.0	133	0.8209611	10.1961190	8.9586190	91.0413810
R3.0134	R3.0	134	0.7775309	9.3751580	8.6993200	91.3006800

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R3.0135	R3.0	135	0.7347881	8.5976270	8.4408310	91.5591691
R3.0136	R3.0	136	0.6928700	7.8628390	8.1829081	91.8170919
R3.0137	R3.0	137	0.6518970	7.1699690	7.9253460	92.0746540
R3.0138	R3.0	138	0.6119650	6.5180720	7.6679810	92.3320190
R3.0139	R3.0	139	0.5731500	5.9061070	7.4106960	92.5893040
R3.0140	R3.0	140	0.5355110	5.3329570	7.1534120	92.8465880
R3.0141	R3.0	141	0.4990880	4.7974460	6.8960930	93.1039070
R3.0142	R3.0	142	0.4639030	4.2983580	6.6387510	93.3612490
R3.0143	R3.0	143	0.4299690	3.8344550	6.3814340	93.6185660
R3.0144	R3.0	144	0.3972850	3.4044860	6.1242290	93.8757710
R3.0145	R3.0	145	0.3658450	3.0072010	5.8672540	94.1327460
R3.0146	R3.0	146	0.3356360	2.6413560	5.6106530	94.3893470
R3.0147	R3.0	147	0.3066410	2.3057200	5.3545910	94.6454090
R3.0148	R3.0	148	0.2788620	1.9990790	5.0992460	94.9007540
R3.0149	R3.0	149	0.2522770	1.7202170	4.8448220	95.1551780
R3.0150	R3.0	150	0.2268850	1.4679400	4.5915160	95.4084840
R3.0151	R3.0	151	0.2026930	1.2410550	4.3395140	95.6604860
R3.0152	R3.0	152	0.1797100	1.0383620	4.0890000	95.9110000
R3.0153	R3.0	153	0.1579600	0.8586520	3.8401530	96.1598470
R3.0154	R3.0	154	0.1374690	0.7006920	3.5931400	96.4068600
R3.0155	R3.0	155	0.1182750	0.5632230	3.3480970	96.6519030
R3.0156	R3.0	156	0.1004170	0.4449480	3.1051630	96.8948370
R3.0157	R3.0	157	0.0839420	0.3445310	2.8644800	97.1355200
R3.0158	R3.0	158	0.0688930	0.2605890	2.6261500	97.3738500
R3.0159	R3.0	159	0.0553160	0.1916960	2.3902580	97.6097420
R3.0160	R3.0	160	0.0432485	0.1363800	2.1569580	97.8430420
R3.0161	R3.0	161	0.0327163	0.0931315	1.9263620	98.0736380
R3.0162	R3.0	162	0.0237359	0.0604152	1.6987790	98.3012210
R3.0163	R3.0	163	0.0163033	0.0366793	1.4745100	98.5254900
R3.0164	R3.0	164	0.0103913	0.0203760	1.2542690	98.7457310
R3.0165	R3.0	165	0.0059434	0.0099847	1.0392430	98.9607570
R3.0166	R3.0	166	0.0028646	0.0040413	0.8322900	99.1677100
R3.0167	R3.0	167	0.0010104	0.0011767	0.6413070	99.3586930
R3.0168	R3.0	168	0.0001662	0.0001662	0.4999820	99.5000180
R3.0169	R3.0	169	0.0000000	0.0000000	0.0000000	100.0000000

Appendix A-5.1 (WAD)

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0000	R4.0	0	0.0008278	100.0000000	100.0000000	0.0000000
R4.0001	R4.0	1	0.0009632	99.9991722	99.0013161	0.9986839
R4.0002	R4.0	2	0.0011139	99.9982090	98.0022631	1.9977369
R4.0003	R4.0	3	0.0012894	99.9970951	97.0033197	2.9966803
R4.0004	R4.0	4	0.0014858	99.9958057	96.0045939	3.9954061
R4.0005	R4.0	5	0.0017109	99.9943199	95.0060129	4.9939871
R4.0006	R4.0	6	0.0019645	99.9926090	94.0076304	5.9923696
R4.0007	R4.0	7	0.0022536	99.9906445	93.0094681	6.9905319
R4.0008	R4.0	8	0.0025768	99.9883909	92.0115519	7.9884481
R4.0009	R4.0	9	0.0029430	99.9858141	91.0139113	8.9860887
R4.0010	R4.0	10	0.0033541	99.9828711	90.0165749	9.9834251
R4.0011	R4.0	11	0.0038157	99.9795170	89.0195789	10.9804211
R4.0012	R4.0	12	0.0043325	99.9757013	88.0229569	11.9770431
R4.0013	R4.0	13	0.0049095	99.9713688	87.0267496	12.9732504
R4.0014	R4.0	14	0.0055561	99.9664593	86.0310001	13.9689999
R4.0015	R4.0	15	0.0062743	99.9609032	85.0357533	14.9642467
R4.0016	R4.0	16	0.0070753	99.9546289	84.0410605	15.9589395
R4.0017	R4.0	17	0.0079612	99.9475536	83.0469732	16.9530268
R4.0018	R4.0	18	0.0089484	99.9395924	82.0535498	17.9464502
R4.0019	R4.0	19	0.0100383	99.9306440	81.0608521	18.9391479
R4.0020	R4.0	20	0.0112429	99.9206057	80.0689449	19.9310551
R4.0021	R4.0	21	0.0125732	99.9093628	79.0778990	20.9221010
R4.0022	R4.0	22	0.0140372	99.8967896	78.0877886	21.9122114
R4.0023	R4.0	23	0.0156517	99.8827524	77.0986939	22.9013061
R4.0024	R4.0	24	0.0174217	99.8671007	76.1106977	23.8893023
R4.0025	R4.0	25	0.0193634	99.8496790	75.1238899	24.8761101
R4.0026	R4.0	26	0.0214911	99.8303156	74.1383648	25.8616352
R4.0027	R4.0	27	0.0238161	99.8088245	73.1542206	26.8457794
R4.0028	R4.0	28	0.0263576	99.7850084	72.1715622	27.8284378
R4.0029	R4.0	29	0.0291262	99.7586508	71.1904984	28.8095016
R4.0030	R4.0	30	0.0321426	99.7295246	70.2111445	29.7888555
R4.0031	R4.0	31	0.0354223	99.6973820	69.2336187	30.7663813
R4.0032	R4.0	32	0.0389815	99.6619597	68.2580481	31.7419519
R4.0033	R4.0	33	0.0428438	99.6229782	67.2845621	32.7154379
R4.0034	R4.0	34	0.0470247	99.5801344	66.3132954	33.6867046
R4.0035	R4.0	35	0.0515423	99.5331097	65.3443880	34.6556120
R4.0036	R4.0	36	0.0564251	99.4815674	64.3779860	35.6220140
R4.0037	R4.0	37	0.0616894	99.4251423	63.4142370	36.5857630
R4.0038	R4.0	38	0.0673580	99.3634529	62.4532971	37.5467029
R4.0039	R4.0	39	0.0734539	99.2960949	61.4953232	38.5046768
R4.0040	R4.0	40	0.0800018	99.2226410	60.5404782	39.4595218
R4.0041	R4.0	41	0.0870266	99.1426392	59.5889268	40.4110732
R4.0042	R4.0	42	0.0945492	99.0556126	58.6408401	41.3591599
R4.0043	R4.0	43	0.1025982	98.9610634	57.6963892	42.3036108
R4.0044	R4.0	44	0.1111975	98.8584652	56.7557492	43.2442508

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0045	R4.0	45	0.1203727	98.7472677	55.8190970	44.1809030
R4.0046	R4.0	46	0.1301480	98.6268950	54.8866129	45.1133871
R4.0047	R4.0	47	0.1405506	98.4967470	53.9584770	46.0415230
R4.0048	R4.0	48	0.1516085	98.3561964	53.0348692	46.9651308
R4.0049	R4.0	49	0.1633424	98.2045879	52.1159720	47.8840280
R4.0050	R4.0	50	0.1757803	98.0412455	51.2019682	48.7980318
R4.0051	R4.0	51	0.1889468	97.8654652	50.2930360	49.7069640
R4.0052	R4.0	52	0.2028656	97.6765184	49.3893561	50.6106439
R4.0053	R4.0	53	0.2175588	97.4736528	48.4911060	51.5088940
R4.0054	R4.0	54	0.2326536	97.2560940	47.5984602	52.4015398
R4.0055	R4.0	55	0.2497578	97.0234404	46.7115922	53.2884078
R4.0056	R4.0	56	0.2665119	96.7736826	45.8306670	54.1693330
R4.0057	R4.0	57	0.2845173	96.5071707	44.9558511	55.0441489
R4.0058	R4.0	58	0.3034000	96.2226534	44.0873008	55.9126992
R4.0059	R4.0	59	0.3231707	95.9192534	43.2251711	56.7748289
R4.0060	R4.0	60	0.3438416	95.5960827	42.3696070	57.6303930
R4.0061	R4.0	61	0.3654260	95.2522411	41.5207481	58.4792519
R4.0062	R4.0	62	0.3879290	94.8868151	40.6787262	59.3212738
R4.0063	R4.0	63	0.4113550	94.4988861	39.8436651	60.1563349
R4.0064	R4.0	64	0.4357090	94.0875311	39.0156770	60.9843230
R4.0065	R4.0	65	0.4609852	93.6518221	38.1948690	61.8051310
R4.0066	R4.0	66	0.4871807	93.1908369	37.3813329	62.6186671
R4.0067	R4.0	67	0.5142860	92.7036562	36.5751538	63.4248462
R4.0068	R4.0	68	0.5422850	92.1893702	35.7764020	64.2235980
R4.0069	R4.0	69	0.5711651	91.6470852	34.9851360	65.0148640
R4.0070	R4.0	70	0.6009006	91.0759201	34.2014031	65.7985969
R4.0071	R4.0	71	0.6314631	90.4750195	33.4252348	66.5747652
R4.0072	R4.0	72	0.6628237	89.8435564	32.6566491	67.3433509
R4.0073	R4.0	73	0.6949434	89.1807327	31.8956490	68.1043510
R4.0074	R4.0	74	0.7277765	88.4857893	31.1422219	68.8577781
R4.0075	R4.0	75	0.7612782	87.7580128	30.3963370	69.6036630
R4.0076	R4.0	76	0.7953930	86.9967346	29.6579499	70.3420501
R4.0077	R4.0	77	0.8300562	86.2013416	28.9269941	71.0730059
R4.0078	R4.0	78	0.8652038	85.3712854	28.2033880	71.7966120
R4.0079	R4.0	79	0.9007626	84.5060816	27.4870250	72.5129750
R4.0080	R4.0	80	0.9366550	83.6053190	26.7777820	73.2222180
R4.0081	R4.0	81	0.9727898	82.6686640	26.0755160	73.9244840
R4.0082	R4.0	82	1.0092020	81.6958742	25.3800550	74.6199450
R4.0083	R4.0	83	1.0464849	80.6866722	24.6912470	75.3087530
R4.0084	R4.0	84	1.0855894	79.6401873	24.0091240	75.9908760
R4.0085	R4.0	85	1.1274805	78.5545979	23.3340089	76.6659911
R4.0086	R4.0	86	1.1729546	77.4271174	22.6665139	77.3334861
R4.0087	R4.0	87	1.2225552	76.2541628	22.0074830	77.9925170
R4.0088	R4.0	88	1.2765531	75.0316076	21.3579230	78.6420770
R4.0089	R4.0	89	1.3349047	73.7550545	20.7189319	79.2810681

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lowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0090	R4.0	90	1.3973417	72.4201498	20.0916240	79.9083760
R4.0091	R4.0	91	1.4632540	71.0228081	19.4770801	80.5229199
R4.0092	R4.0	92	1.5318708	69.5595541	18.8762820	81.1237180
R4.0093	R4.0	93	1.6022349	68.0276833	18.2900851	81.7099149
R4.0094	R4.0	94	1.6732702	66.4254484	17.7191961	82.2808039
R4.0095	R4.0	95	1.7437983	64.7521782	17.1641600	82.8358400
R4.0096	R4.0	96	1.8126111	63.0083799	16.6253510	83.3746490
R4.0097	R4.0	97	1.8785019	61.1957688	16.1029799	83.8970201
R4.0098	R4.0	98	1.9403057	59.3172669	15.5971090	84.4028910
R4.0099	R4.0	99	1.9969244	57.3769612	15.1076440	84.8923560
R4.0100	R4.0	100	2.0473556	55.3800368	14.6343750	85.3656250
R4.0101	R4.0	101	2.0907240	53.3326812	14.1769710	85.8230290
R4.0102	R4.0	102	2.1262794	51.2419572	13.7350060	86.2649940
R4.0103	R4.0	103	2.1534547	49.1156778	13.3079650	86.6920350
R4.0104	R4.0	104	2.1718040	46.9622231	12.8952750	87.1047250
R4.0105	R4.0	105	2.1810722	44.7904191	12.4962990	87.5037010
R4.0106	R4.0	106	2.1811419	42.6093469	12.1103610	87.8896390
R4.0107	R4.0	107	2.1720638	40.4282050	11.7367520	88.2632480
R4.0108	R4.0	108	2.1540241	38.2561412	11.3747400	88.6252600
R4.0109	R4.0	109	2.1273389	36.1021171	11.0235781	88.9764219
R4.0110	R4.0	110	2.0924511	33.9747782	10.6825140	89.3174860
R4.0111	R4.0	111	2.0498882	31.8823271	10.3507971	89.6492029
R4.0112	R4.0	112	2.0002858	29.8324389	10.0276790	89.9723210
R4.0113	R4.0	113	1.9443300	27.8321531	9.7124300	90.2875700
R4.0114	R4.0	114	1.8827472	25.8878231	9.4043380	90.5956620
R4.0115	R4.0	115	1.8162958	24.0050759	9.1027160	90.8972840
R4.0116	R4.0	116	1.7457612	22.1887801	8.8069040	91.1930960
R4.0117	R4.0	117	1.6718969	20.4430189	8.5162840	91.4837160
R4.0118	R4.0	118	1.5954540	18.7711220	8.2302750	91.7697250
R4.0119	R4.0	119	1.5171400	17.1756680	7.9483430	92.0516570
R4.0120	R4.0	120	1.4376240	15.6585280	7.6700060	92.3299940
R4.0121	R4.0	121	1.3575180	14.2209040	7.3948390	92.6051610
R4.0122	R4.0	122	1.2773730	12.8633860	7.1224760	92.8775240
R4.0123	R4.0	123	1.1976880	11.5860130	6.8526120	93.1473880
R4.0124	R4.0	124	1.1188790	10.3883250	6.5850130	93.4149870
R4.0125	R4.0	125	1.0413181	9.2694460	6.3195140	93.6804860
R4.0126	R4.0	126	0.9653040	8.2281280	6.0560060	93.9439940
R4.0127	R4.0	127	0.8910890	7.2628240	5.7944580	94.2055420
R4.0128	R4.0	128	0.8188760	6.3717350	5.5348880	94.4651120
R4.0129	R4.0	129	0.7488360	5.5528590	5.2773810	94.7226190
R4.0130	R4.0	130	0.6811100	4.8040230	5.0220640	94.9779360
R4.0131	R4.0	131	0.6158200	4.1229130	4.7691140	95.2308860
R4.0132	R4.0	132	0.5530780	3.5070930	4.5187400	95.4812600
R4.0133	R4.0	133	0.4930080	2.9540150	4.2715210	95.7284790
R4.0134	R4.0	134	0.4357350	2.4610070	4.0273490	95.9726510

Appendix A-5.1 (WAD)

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lowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
R4.0135	R4.0	135	0.3814000	2.0252720	3.7864600	96.2135400
R4.0136	R4.0	136	0.3301680	1.6438720	3.5490210	96.4509790
R4.0137	R4.0	137	0.2822160	1.3137040	3.3315155	66.6848450
R4.0138	R4.0	138	0.2377380	1.0314880	3.0849780	96.9150220
R4.0139	R4.0	139	0.1969280	0.7937500	2.8585810	97.1414190
R4.0140	R4.0	140	0.1599700	0.5968220	2.6360510	97.3639490
R4.0141	R4.0	141	0.1270220	0.4368520	2.4174760	97.5825240
R4.0142	R4.0	142	0.0981870	0.3098300	2.2029340	97.7970660
R4.0143	R4.0	143	0.0734960	0.2116430	1.9925030	98.0074970
R4.0144	R4.0	144	0.0529003	0.1381470	1.7862840	98.2137160
R4.0145	R4.0	145	0.0362607	0.0852467	1.5844010	98.4155990
R4.0146	R4.0	146	0.0233463	0.0489860	1.3870900	98.6129100
R4.0147	R4.0	147	0.0138307	0.0256397	1.1948260	98.8051740
R4.0148	R4.0	148	0.0072948	0.0118090	1.0086400	98.9913600
R4.0149	R4.0	149	0.0032339	0.0045142	0.8306070	99.1693930
R4.0150	R4.0	150	0.0010741	0.0012803	0.6657290	99.3342710
R4.0151	R4.0	151	0.0002001	0.0002061	0.5292780	99.4707220
R4.0152	R4.0	152	0.0000060	0.0000060	0.5000830	99.4999170
R4.0153	R4.0	153	0.0000000	0.0000000	0.0000000	100.0000000

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0000	S3.0	0	0.0000000	100.0000000	100.0000000	0.0000000
S3.0001	S3.0	1	0.0000000	100.0000000	99.0000000	1.0000000
S3.0002	S3.0	2	0.0000000	100.0000000	98.0000000	2.0000000
S3.0003	S3.0	3	0.0000000	100.0000000	97.0000000	3.0000000
S3.0004	S3.0	4	0.0000000	100.0000000	96.0000000	4.0000000
S3.0005	S3.0	5	0.0000000	100.0000000	95.0000000	5.0000000
S3.0006	S3.0	6	0.0000009	100.0000000	94.0000000	6.0000000
S3.0007	S3.0	7	0.0000029	99.9999991	93.0000010	6.9999990
S3.0008	S3.0	8	0.0000057	99.9999962	92.0000038	7.9999962
S3.0009	S3.0	9	0.0000124	99.9999905	91.0000086	8.9999914
S3.0010	S3.0	10	0.0000229	99.9999781	90.0000200	9.9999800
S3.0011	S3.0	11	0.0000410	99.9999552	89.0000401	10.9999599
S3.0012	S3.0	12	0.0000706	99.9999142	88.0000773	11.9999227
S3.0013	S3.0	13	0.0001154	99.9998436	87.0001392	12.9998608
S3.0014	S3.0	14	0.0001821	99.9997282	86.0002394	13.9997606
S3.0015	S3.0	15	0.0002785	99.9995461	85.0003939	14.9996061
S3.0016	S3.0	16	0.0004120	99.9992676	84.0006294	15.9993706
S3.0017	S3.0	17	0.0005932	99.9988556	83.0009728	16.9990272
S3.0018	S3.0	18	0.0008402	99.9982624	82.0014629	17.9985371
S3.0019	S3.0	19	0.0011616	99.9974222	81.0021467	18.9978533
S3.0020	S3.0	20	0.0015783	99.9962606	80.0030832	19.9969168
S3.0021	S3.0	21	0.0021086	99.9946823	79.0043373	20.9956627
S3.0022	S3.0	22	0.0027761	99.9925737	78.0059929	21.9940071
S3.0023	S3.0	23	0.0036030	99.9897976	77.0081453	22.9918547
S3.0024	S3.0	24	0.0046177	99.9861946	76.0109024	23.9890976
S3.0025	S3.0	25	0.0058498	99.9815769	75.0143890	24.9856110
S3.0026	S3.0	26	0.0073300	99.9757271	74.0187492	25.9812508
S3.0027	S3.0	27	0.0090951	99.9683971	73.0241404	26.9758596
S3.0028	S3.0	28	0.0111771	99.9593020	72.0307388	27.9692612
S3.0029	S3.0	29	0.0136185	99.9481249	71.0387383	28.9612617
S3.0030	S3.0	30	0.0164585	99.9345064	70.0483513	29.9516487
S3.0031	S3.0	31	0.0197382	99.9180479	69.0598068	30.9401932
S3.0032	S3.0	32	0.0235014	99.8983097	68.0733528	31.9266472
S3.0033	S3.0	33	0.0277939	99.8748083	67.0892544	32.9107456
S3.0034	S3.0	34	0.0326624	99.8470144	66.1077900	33.8922100
S3.0035	S3.0	35	0.0381479	99.8143520	65.1292582	34.8707418
S3.0036	S3.0	36	0.0443048	99.7762041	64.1539688	35.8460312
S3.0037	S3.0	37	0.0511732	99.7318993	63.1822462	36.8177538
S3.0038	S3.0	38	0.0588046	99.6807261	62.2144260	37.7855740
S3.0039	S3.0	39	0.0672397	99.6219215	61.2508540	38.7491460
S3.0040	S3.0	40	0.0765267	99.5546818	60.2918859	39.7081141
S3.0041	S3.0	41	0.0867071	99.4781551	59.3378830	40.6621170
S3.0042	S3.0	42	0.0978231	99.3914480	58.3892121	41.6107879
S3.0043	S3.0	43	0.1099110	99.2936249	57.4462428	42.5537572
S3.0044	S3.0	44	0.1230097	99.1837139	56.5093489	43.4906511

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0045	S3.0	45	0.1371507	99.0607042	55.5788989	44.4211011
S3.0046	S3.0	46	0.1523667	98.9235535	54.6552620	45.3447380
S3.0047	S3.0	47	0.1686792	98.7711868	53.7388029	46.2611971
S3.0048	S3.0	48	0.1861134	98.6025076	52.8298788	47.1701212
S3.0049	S3.0	49	0.2046880	98.4163942	51.9288392	48.0711608
S3.0050	S3.0	50	0.2244149	98.2117062	51.0360251	48.9639749
S3.0051	S3.0	51	0.2453012	97.9872913	50.1517639	49.8482361
S3.0052	S3.0	52	0.2673512	97.7419901	49.2763739	50.7236261
S3.0053	S3.0	53	0.2905626	97.4746389	48.4101572	51.5898428
S3.0054	S3.0	54	0.3149290	97.1840763	47.5534000	52.4466000
S3.0055	S3.0	55	0.3404341	96.8691473	46.7063732	53.2936268
S3.0056	S3.0	56	0.3670616	96.5287132	45.8693328	54.1306672
S3.0057	S3.0	57	0.3947830	96.1616516	45.0425129	54.9574871
S3.0058	S3.0	58	0.4235687	95.7668686	44.2261319	55.7738681
S3.0059	S3.0	59	0.4533825	95.3432999	43.4203882	56.5796118
S3.0060	S3.0	60	0.4841824	94.8899174	42.6254621	57.3745379
S3.0061	S3.0	61	0.5159149	94.4057350	41.8415122	58.1584878
S3.0062	S3.0	62	0.5485287	93.8898201	41.0686789	58.9313211
S3.0063	S3.0	63	0.5819635	93.3412914	40.3070850	59.6929150
S3.0064	S3.0	64	0.6161499	92.7593279	39.5568309	60.4431691
S3.0065	S3.0	65	0.6510201	92.1431780	38.8179989	61.1820011
S3.0066	S3.0	66	0.6864967	91.4921579	38.0906539	61.9093461
S3.0067	S3.0	67	0.7224970	90.8056612	37.3748412	62.6251588
S3.0068	S3.0	68	0.7589350	90.0831642	36.6705899	63.3294101
S3.0069	S3.0	69	0.7957239	89.3242292	35.9779110	64.0220890
S3.0070	S3.0	70	0.8327675	88.5285053	35.2967982	64.7032018
S3.0071	S3.0	71	0.8699665	87.6957378	34.6272311	65.3727689
S3.0072	S3.0	72	0.9072227	86.8257713	33.9691749	66.0308251
S3.0073	S3.0	73	0.9444323	85.9185486	33.3225799	66.6774201
S3.0074	S3.0	74	0.9814892	84.9741163	32.6873822	67.3126178
S3.0075	S3.0	75	1.0182848	83.9926271	32.0635042	67.9364958
S3.0076	S3.0	76	1.0547151	82.9743423	31.4508619	68.5491381
S3.0077	S3.0	77	1.0906649	81.9196272	30.8493540	69.1506460
S3.0078	S3.0	78	1.1260299	80.8289623	30.2588730	69.7411270
S3.0079	S3.0	79	1.1606951	79.7029324	29.6793010	70.3206990
S3.0080	S3.0	80	1.1945553	78.5422373	29.1105120	70.8894880
S3.0081	S3.0	81	1.2275000	77.3476820	28.5523710	71.4476290
S3.0082	S3.0	82	1.2594261	76.1201820	28.0047390	71.9952610
S3.0083	S3.0	83	1.2902269	74.8607559	27.4674680	72.5325320
S3.0084	S3.0	84	1.3198013	73.5705290	26.9404030	73.0595970
S3.0085	S3.0	85	1.3480530	72.2507277	26.4233890	73.5766110
S3.0086	S3.0	86	1.3748846	70.9026747	25.9162619	74.0837381
S3.0087	S3.0	87	1.4002104	69.5277901	25.4188600	74.5811400
S3.0088	S3.0	88	1.4239378	68.1275797	24.9310110	75.0689890
S3.0089	S3.0	89	1.4459896	66.7036419	24.4525449	75.5474551

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0090	S3.0	90	1.4662924	65.2576523	23.9832900	76.0167100
S3.0091	S3.0	91	1.4847698	63.7913599	23.5230711	76.4769289
S3.0092	S3.0	92	1.5013619	62.3065901	23.0717111	76.9282889
S3.0093	S3.0	93	1.5160102	60.8052282	22.6290381	77.3709619
S3.0094	S3.0	94	1.5286632	59.2892180	22.1948710	77.8051290
S3.0095	S3.0	95	1.5392757	57.7605548	21.7690370	78.2309630
S3.0096	S3.0	96	1.5478119	56.2212791	21.3513601	78.6486399
S3.0097	S3.0	97	1.5542393	54.6734672	20.9416640	79.0583360
S3.0098	S3.0	98	1.5585370	53.1192279	20.5397761	79.4602239
S3.0099	S3.0	99	1.5606909	51.5606909	20.1455231	79.8544769
S3.0100	S3.0	100	1.5606909	50.0000000	19.7587349	80.2412651
S3.0101	S3.0	101	1.5585370	48.4393091	19.3792419	80.6207581
S3.0102	S3.0	102	1.5542393	46.8807721	19.0068769	80.9931231
S3.0103	S3.0	103	1.5478119	45.3265328	18.6414750	81.3585250
S3.0104	S3.0	104	1.5392757	43.7787209	18.2828729	81.7171271
S3.0105	S3.0	105	1.5286631	42.2394452	17.9309101	82.0690899
S3.0106	S3.0	106	1.5160103	40.7107821	17.5854299	82.4145701
S3.0107	S3.0	107	1.5013619	39.1947718	17.2462750	82.7537250
S3.0108	S3.0	108	1.4847698	37.6934099	16.9132950	83.0867050
S3.0109	S3.0	109	1.4662919	36.2086401	16.5863359	83.4136641
S3.0110	S3.0	110	1.4459901	34.7423482	16.2652550	83.7347450
S3.0111	S3.0	111	1.4239380	33.2963581	15.9499090	84.0500910
S3.0112	S3.0	112	1.4002102	31.8724201	15.6401500	84.3598500
S3.0113	S3.0	113	1.3748848	30.4722099	15.3358450	84.6641550
S3.0114	S3.0	114	1.3480530	29.0973251	15.0368600	84.9631400
S3.0115	S3.0	115	1.3198011	27.7492721	14.7430561	85.2569439
S3.0116	S3.0	116	1.2902269	26.4294710	14.4543080	85.5456920
S3.0117	S3.0	117	1.2594261	25.1392441	14.1704850	85.8295150
S3.0118	S3.0	118	1.2275000	23.8798180	13.8914710	86.1085290
S3.0119	S3.0	119	1.1945550	22.6523180	13.6171401	86.3828599
S3.0120	S3.0	120	1.1606951	21.4577630	13.3473700	86.6526300
S3.0121	S3.0	121	1.1260300	20.2970679	13.0820510	86.9179490
S3.0122	S3.0	122	1.0906648	19.1710379	12.8210681	87.1789319
S3.0123	S3.0	123	1.0547152	18.0803731	12.5643160	87.4356840
S3.0124	S3.0	124	1.0182848	17.0256579	12.3116800	87.6883200
S3.0125	S3.0	125	0.9814891	16.0073731	12.0630680	87.9369320
S3.0126	S3.0	126	0.9444329	15.0258840	11.8183630	88.1816370
S3.0127	S3.0	127	0.9072221	14.0814511	11.5774790	88.4225210
S3.0128	S3.0	128	0.8699670	13.1742290	11.3403140	88.6596860
S3.0129	S3.0	129	0.8327670	12.3042620	11.1067700	88.8932300
S3.0130	S3.0	130	0.7957240	11.4714950	10.8767610	89.1232390
S3.0131	S3.0	131	0.7589350	10.6757710	10.6501980	89.3498020
S3.0132	S3.0	132	0.7224970	9.9168360	10.4270001	89.5729999
S3.0133	S3.0	133	0.6864971	9.1943390	10.2070690	89.7929310
S3.0134	S3.0	134	0.6510199	8.5078420	9.9903250	90.0096750

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Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0135	S3.0	135	0.6161500	7.8568220	9.7766990	90.2233011
S3.0136	S3.0	136	0.5819630	7.2406720	9.5661089	90.4338911
S3.0137	S3.0	137	0.5485290	6.6587090	9.3584729	90.6415271
S3.0138	S3.0	138	0.5159150	6.1101800	9.1537210	90.8462790
S3.0139	S3.0	139	0.4841820	5.5942650	8.9517880	91.0482121
S3.0140	S3.0	140	0.4533830	5.1100830	8.7525981	91.2474020
S3.0141	S3.0	141	0.4235690	4.6567000	8.5560840	91.4439160
S3.0142	S3.0	142	0.3947830	4.2331310	8.3621800	91.6378200
S3.0143	S3.0	143	0.3670610	3.8383480	8.1708230	91.8291770
S3.0144	S3.0	144	0.3404340	3.4712870	7.9819520	92.0180480
S3.0145	S3.0	145	0.3149290	3.1308530	7.7955040	92.2044960
S3.0146	S3.0	146	0.2905630	2.8159240	7.6114220	92.3885780
S3.0147	S3.0	147	0.2673510	2.5253610	7.4296480	92.5703520
S3.0148	S3.0	148	0.2453010	2.2580100	7.2501270	92.7498730
S3.0149	S3.0	149	0.2244150	2.0127090	7.0728060	92.9271940
S3.0150	S3.0	150	0.2046880	1.7882940	6.8976320	93.1023680
S3.0151	S3.0	151	0.1861140	1.5836060	6.7245530	93.2754470
S3.0152	S3.0	152	0.1686790	1.3974920	6.5535220	93.4464780
S3.0153	S3.0	153	0.1523660	1.2288130	6.3844900	93.6155100
S3.0154	S3.0	154	0.1371510	1.0764470	6.2174110	93.7825890
S3.0155	S3.0	155	0.1230100	0.9392960	6.0522380	93.9477620
S3.0156	S3.0	156	0.1099110	0.8162860	5.8889290	94.1110710
S3.0157	S3.0	157	0.0978230	0.7063750	5.7274410	94.2725590
S3.0158	S3.0	158	0.0867070	0.6085520	5.5677320	94.4322680
S3.0159	S3.0	159	0.0765270	0.5218450	5.4097620	94.5902380
S3.0160	S3.0	160	0.0672400	0.4453180	5.2534920	94.7465080
S3.0161	S3.0	161	0.0588040	0.3780780	5.0988860	94.9011140
S3.0162	S3.0	162	0.0511730	0.3192740	4.9459060	95.0540940
S3.0163	S3.0	163	0.0443050	0.2681010	4.7945200	95.2054800
S3.0164	S3.0	164	0.0381480	0.2237960	4.6446910	95.3553090
S3.0165	S3.0	165	0.0326620	0.1856480	4.4963870	95.5036130
S3.0166	S3.0	166	0.0277940	0.1529860	4.3495800	95.6504200
S3.0167	S3.0	167	0.0235020	0.1251920	4.2042330	95.7957670
S3.0168	S3.0	168	0.0197375	0.1016900	4.0603190	95.9396810
S3.0169	S3.0	169	0.0164582	0.0819525	3.9178100	96.0821900
S3.0170	S3.0	170	0.0136189	0.0654943	3.7766790	96.2233210
S3.0171	S3.0	171	0.0111777	0.0518754	3.6369070	96.3630930
S3.0172	S3.0	172	0.0090944	0.0406977	3.4984640	96.5015360
S3.0173	S3.0	173	0.0073307	0.0316033	3.3613300	96.6386700
S3.0174	S3.0	174	0.0058498	0.0242726	3.2254840	96.7745160
S3.0175	S3.0	175	0.0046178	0.0184228	3.0909090	96.9090910
S3.0176	S3.0	176	0.0036030	0.0138050	2.9575850	97.0424150
S3.0177	S3.0	177	0.0027755	0.0102020	2.8255000	97.1745000
S3.0178	S3.0	178	0.0021089	0.0074265	2.6946400	97.3053600
S3.0179	S3.0	179	0.0015783	0.0053176	2.5649990	97.4350010

Appendix A-5.1 (WAD)

S:\Depreciation\lowacurves.xls

Iowa-type Retirement - Survival Tables

Percent Retired, Surviving, Condition, and Depreciation Reserve
as a function of Age as a Percent of Average Service Life

1	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% Depr Resv
S3.0180	S3.0	180	0.0011617	0.0037393	2.4365660	97.5634340
S3.0181	S3.0	181	0.0008396	0.0025776	2.3093440	97.6906560
S3.0182	S3.0	182	0.0005946	0.0017381	2.1833410	97.8166590
S3.0183	S3.0	183	0.0004116	0.0011435	2.0585660	97.9414340
S3.0184	S3.0	184	0.0002778	0.0007319	1.9350420	98.0649580
S3.0185	S3.0	185	0.0001821	0.0004541	1.8128020	98.1871980
S3.0186	S3.0	186	0.0001156	0.0002720	1.6918880	98.3081120
S3.0187	S3.0	187	0.0000706	0.0001564	1.5723710	98.4276290
S3.0188	S3.0	188	0.0000413	0.0000858	1.4543500	98.5456500
S3.0189	S3.0	189	0.0000229	0.0000446	1.3379620	98.6620380
S3.0190	S3.0	190	0.0000119	0.0000217	1.2234140	98.7765860
S3.0191	S3.0	191	0.0000058	0.0000097	1.1110030	98.8889970
S3.0192	S3.0	192	0.0000025	0.0000040	1.0011880	98.9988120
S3.0193	S3.0	193	0.0000010	0.0000014	0.8946340	99.1053660
S3.0194	S3.0	194	0.0000003	0.0000004	0.7925260	99.2074740
S3.0195	S3.0	195	0.0000001	0.0000001	0.6968450	99.3031550
S3.0196	S3.0	196	0.0000000	0.0000000	0.6112800	99.3887200
S3.0197	S3.0	197	0.0000000	0.0000000	0.5431250	99.4568750
S3.0198	S3.0	198	0.0000000	0.0000000	0.5056800	99.4943200
S3.0199	S3.0	199	0.0000000	0.0000000	0.5000000	99.5000000
S3.0200	S3.0	200	0.0000000	0.0000000	0.0000000	100.0000000

PENNSYLVANIA-AMERICAN WATER COMPANY

**2020 GENERAL BASE RATE CASE
R-2020-3019369 (WATER)
R-2020-3019371 (WASTEWATER)**

**EXHIBIT NO. 11-C, 11-D
DEPRECIATION STUDY**

**WATER OPERATIONS EXCLUDING STEELTON
AS OF DECEMBER 31, 2021, 2022**

EXHIBIT NO. 11-C - DEPRECIATION STUDY
WATER OPERATIONS EXCLUDING STEELTON
AS OF DECEMBER 31, 2021

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY
MECHANICSBURG, PENNSYLVANIA

WATER OPERATIONS EXCLUDING STEELTON

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2021

Prepared by:



*Excellence Delivered **As Promised***

Appendix A-5.1 (WAD)

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Mechanicsburg, Pennsylvania

WATER OPERATIONS EXCLUDING STEELTON

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2021

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



Excellence Delivered **As Promised**

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention: Ashley E. Everette
Director, Rates and Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to water plant as of December 31, 2021. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Water Plant as of December 31, 2020". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink that reads "John J. Spanos".

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

**PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON
DEPRECIATION STUDY**

RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages 3 through 13 summarize the results of the depreciation study as of December 31, 2021. Table 1 sets forth the development of the net original cost by account as of December 31, 2021. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2021, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2021. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2021. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2017 through 2021.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-8. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2017 through 2021, beginning on pages III-2 through III-6.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

	(1) DEPRECIABLE GROUP	(2) ORIGINAL COST AS OF DECEMBER 31, 2021	(3) CUSTOMER ADVANCES	(4) CONTRIBUTIONS IN AID OF CONSTRUCTION	(5) EXCLUDED PROPERTY	(6) NET ORIGINAL COST AS OF DECEMBER 31, 2021
INTANGIBLE PLANT						
301.00	ORGANIZATION	766,405.12				766,405.12
302.00	FRANCHISES AND CONSENTS	2,404,599.20				2,404,599.20
303.00	MISCELLANEOUS INTANGIBLE PLANT	1,453,020.77				1,453,020.77
	TOTAL INTANGIBLE PLANT	4,624,025.09	0.00	0.00	0.00	4,624,025.09
NONDEPRECIABLE PLANT						
303.20	POWER AND PUMPING LAND	4,315,318.23				4,315,318.23
303.30	PURIFICATION LAND	15,412.25				15,412.25
303.40	TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	3,724,070.21		215,927.20		3,508,143.01
303.50	DISTRIBUTION RESERVOIRS AND STANDPIPE LAND	2,001,789.51				2,001,789.51
303.51	TRANSMISSION AND DISTRIBUTION - LAND	1,762,423.06				1,762,423.06
303.52	TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	5,288,947.81				5,288,947.81
303.61	OFFICE LAND	5,260,832.58				5,260,832.58
	TOTAL NONDEPRECIABLE PLANT	22,368,793.65	0.00	215,927.20	0.00	22,152,866.45
DEPRECIABLE PLANT						
303.14	WATER RIGHTS - HIBERNIA	1,942,822.51				1,942,822.51
303.35	WASTE HANDLING AND TREATMENT LAND	155,025.17				155,025.17
303.99	COMPREHENSIVE PLANNING STUDIES	9,710,061.35				9,710,061.35
304.15	OTHER WATER SOURCE STRUCTURES	44,248,707.65				44,248,707.65
304.20	POWER AND PUMPING STRUCTURES	121,818,280.30		41,310.00		120,487,362.70
304.30	PURIFICATION BUILDINGS	289,983,841.49		230,375.00		289,583,861.48
304.36	WASTE HANDLING AND TREATMENT STRUCTURES	11,688,886.83				11,688,886.83
304.38	WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	65,958.42				65,958.42
304.39	PURIFICATION BUILDINGS - TANK PAINTING	119,362.95				119,362.95
304.61	OFFICE BUILDINGS	44,005,306.44		12,834.00		43,932,472.44
304.62	STORES, SHOP AND GARAGE BUILDINGS	55,111,889.86		576.00		55,111,313.86
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	4,132,815.74				4,132,815.74
305.00	COLLECTING AND IMPOUNDING RESERVOIRS	135,672,663.72				135,669,088.72
306.00	LAKE, RIVER AND OTHER INTAKES	18,257,338.08				18,215,787.08
307.00	WELLS AND SPRINGS	10,694,793.00				10,623,182.73
310.00	POWER GENERATION EQUIPMENT	19,954,396.50				19,809,562.50
311.20	PUMPING EQUIPMENT - ELECTRIC PUMPING EQUIPMENT	25,829,705.97				23,758,420.92
311.50	PUMPING EQUIPMENT - OTHER	2,389,457.83				2,389,457.83
311.52	PUMPING EQUIPMENT - SOURCE OF SUPPLY	14,212,241.21				14,212,241.21
311.53	PUMPING EQUIPMENT - WATER TREATMENT	46,865,937.19				46,865,937.19
311.54	PUMPING EQUIPMENT - TRANSMISSION AND DISTRIBUTION	6,787,770.63				6,787,770.63
320.10	PURIFICATION SYSTEM - LARGE STRUCTURES	278,019,906.37				277,364,892.10
320.18	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	103,245.73				103,245.73
320.19	PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	3,522,542.77				3,522,542.77
320.20	PURIFICATION SYSTEM - CHEMICAL TREATMENT	84,745,690.42				84,703,323.42
320.29	PURIFICATION SYSTEM - CHEM. TREATMENT PAINT	8,167.87				8,167.87
320.30	GRANULAR ACTIVATED CARBON	8,601,165.21				8,601,165.21
320.37	WASTE HANDLING AND TREATMENT - EQUIPMENT	14,969,798.93				14,969,798.93
330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	117,655,216.74		27,162.27		114,750,102.23
				42,367.00		
				627,852.00		
				2,905,114.51		

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2021 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (6)
330.10 ELEVATED TANKS AND STANDPIPES	14,100,477.17				14,100,477.17
330.20 GROUND LEVEL FACILITIES	18,929,725.89				18,929,725.89
330.30 BELOW GRADE FACILITIES	818,672.56				818,672.56
330.40 CLEARWELL	12,806,094.73				12,806,094.73
330.58 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	2,211,111.35				2,211,111.35
330.59 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	34,570,376.62				34,570,376.62
331.00 MAINS AND ACCESSORIES	3,064,685,925.46	63,514,361.86	200,747,868.78	502,366.00	2,799,921,328.82
333.00 SERVICES	649,550,756.85	5,782,801.70	11,851,183.63		631,916,771.52
334.00 METERS AND METER INSTALLATIONS	207,962,808.09		1,707,754.19		206,255,053.90
335.00 FIRE HYDRANTS	127,625,861.91	71,848.81	4,768,402.44		122,785,610.66
340.10 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	7,475,864.68				7,475,864.68
340.20 OFFICE FURNITURE AND EQUIPMENT - COMPUTERS AND PERIPHERAL EQUIPMENT	24,511,435.46				24,511,435.46
340.30 OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE	45,994,769.94				45,994,769.94
340.31 OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE - BUSINESS TRANSFORMATION	62,990,459.09				62,990,459.09
340.50 OFFICE FURNITURE AND EQUIPMENT - OTHER OFFICE EQUIPMENT	7,644.67		354.00		7,290.67
341.00 TRANSPORTATION EQUIPMENT - NOT CLASSIFIED	349.00				349.00
341.10 TRANSPORTATION EQUIPMENT - LIGHT DUTY TRUCKS	28,802,310.96				28,802,310.96
341.20 TRANSPORTATION EQUIPMENT - EQUIPMENT	23,205,811.64				23,205,811.64
341.30 TRANSPORTATION EQUIPMENT - AUTOS	3,874,730.49				3,874,730.49
341.40 TRANSPORTATION EQUIPMENT - OTHER	10,439,225.68				10,439,225.68
342.00 STORES EQUIPMENT	448,033.65				448,033.65
343.00 TOOLS AND WORK EQUIPMENT	32,097,198.82		61.00		32,097,137.82
344.00 LABORATORY EQUIPMENT	2,606,821.35				2,606,821.35
345.00 POWER OPERATED EQUIPMENT	2,405,805.64				2,405,805.64
346.00 COMMUNICATION EQUIPMENT - EQUIPMENT	3,459,420.00				3,459,420.00
346.10 COMMUNICATION EQUIPMENT - NON-TELEPHONE	6,770,729.39				6,770,729.39
346.19 COMMUNICATION EQUIPMENT - REMOTE CONTROL AND INSTRUMENTATION	2,790,901.75				2,790,901.75
346.20 COMMUNICATION EQUIPMENT - TELEPHONE	188,390.60				188,390.60
347.00 MISCELLANEOUS EQUIPMENT	11,608,430.21		4,085.00		11,604,345.21
348.00 OTHER TANGIBLE EQUIPMENT	793,796.73				793,796.73
TOTAL DEPRECIABLE PLANT	5,774,986,877.26	69,369,012.37	225,763,719.75	1,558,014.00	5,478,296,131.14
TOTAL UTILITY PLANT IN SERVICE	5,801,979,696.00	69,369,012.37	225,979,646.95	1,558,014.00	5,505,073,022.68

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCRUAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
INTANGIBLE PLANT							
301.00 ORGANIZATION	NONDEPR.	766,405.12					
302.00 FRANCHISES AND CONSENTS	NONDEPR.	2,404,599.20					
303.00 MISCELLANEOUS INTANGIBLE PLANT	NONDEPR.	1,453,020.77					
TOTAL INTANGIBLE PLANT		4,624,025.09					
NONDEPRECIABLE PLANT							
303.20 POWER AND PUMPING LAND	NONDEPR.	4,315,318.23					
303.30 PURIFICATION LAND	NONDEPR.	15,412.25					
303.40 TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	NONDEPR.	3,508,143.01					
303.50 DISTRIBUTION RESERVOIRS AND STANDPIPES LAND	NONDEPR.	2,001,789.51					
303.51 TRANSMISSION AND DISTRIBUTION - LAND	NONDEPR.	1,762,423.06					
303.52 TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	NONDEPR.	5,288,947.81					
303.61 OFFICE LAND	NONDEPR.	5,260,832.58					
TOTAL NONDEPRECIABLE PLANT		22,152,866.45					
DEPRECIABLE PLANT							
303.14 WATER RIGHTS - HIBERNIA	25-SQ	1,942,822.51	1,942,823	0	0	-	-
303.35 WASTE HANDLING AND TREATMENT LAND	100-R2	155,025.17	150,407	4,618	4,618	2.98	1.0
303.99 COMPREHENSIVE PLANNING STUDIES	5-SQ	9,710,061.35	7,494,569	2,215,492	751,049	7.73	2.9
304.15 OTHER WATER SOURCE STRUCTURES	60-R1.5	44,248,707.65	8,283,077	35,965,631	970,351	2.19	37.1
304.20 POWER AND PUMPING STRUCTURES	70-R2.5	69,567,251.92	9,280,689	60,286,563	1,787,063	2.57	33.7
LARGE STRUCTURES	55-R3	50,920,110.78	9,270,044	41,650,067	1,298,796	2.55	32.1
OTHER STRUCTURES							
TOTAL ACCOUNT 304.2		120,487,362.70	18,550,733	101,936,630	3,085,859	2.56	33.0
304.30 PURIFICATION BUILDINGS	60-R2.5	248,267,049.87	78,898,085	169,368,965	5,619,625	2.26	30.1
LARGE STRUCTURES	60-R3	41,316,811.61	12,978,751	28,338,061	730,378	1.77	38.8
OTHER STRUCTURES							
TOTAL ACCOUNT 304.3		289,583,861.48	91,876,836	197,707,026	6,350,003	2.19	31.1
304.36 WASTE HANDLING AND TREATMENT STRUCTURES	60-S2.5	11,668,886.83	6,315,009	5,353,878	309,282	2.65	17.3
304.38 WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	10-SQ	65,958.42	57,775	8,183	2,336	3.54	3.5
304.39 PURIFICATION BUILDINGS - TANK PAINTING	10-SQ	119,362.95	107,705	11,658	3,331	2.79	3.5
304.61 OFFICE BUILDINGS	50-R1.5	31,024,747.89	5,523,525	25,501,224	970,539	3.13	26.3
LARGE STRUCTURES	50-R3	12,907,724.55	3,482,369	9,425,356	295,081	2.29	31.9
OTHER STRUCTURES							
TOTAL ACCOUNT 304.61		43,932,472.44	9,005,894	34,926,580	1,265,620	2.88	27.6

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCURAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
304.62	55-S0.5 45-R3	48,973,108.70 6,138,205.16	11,428,586 3,952,462	37,544,523 2,185,743	1,323,667 82,351	2.70 1.34	28.4 26.5
		55,111,313.86	15,381,048	39,730,266	1,406,018	2.55	28.3
304.63	35-S0.5	4,132,815.74	2,198,599	1,934,217	86,804	2.10	22.3
		569,350,742.07	151,776,676	417,574,069	13,479,606	2.37	31.0
305.00	125-R2 75-R3	128,044,777.60 7,624,311.12	18,481,585 2,729,327	109,563,192 4,894,984	1,809,335 215,147	1.41 2.82	60.6 22.8
		135,669,088.72	21,210,912	114,458,176	2,024,482	1.49	56.5
306.00	55-S1 50-S0.5	14,029,064.70 4,186,722.38	4,448,923 1,524,770	9,580,142 2,661,952	336,818 110,315	2.40 2.63	28.4 24.1
		18,215,787.08	5,973,693	12,242,094	447,133	2.45	27.4
307.00	55-S0 43-S1	10,623,182.73 19,809,562.50	3,343,133 5,157,558	7,280,050 14,652,004	246,499 541,291	2.32 2.73	28.5 27.1
311.20	42-S0	23,758,420.92	4,483,984	19,274,437	769,961	3.24	25.0
311.50	42-S0	2,389,457.83	559,308	1,830,150	74,670	3.12	24.5
311.52	42-S0	14,212,241.21	2,191,102	12,021,139	477,564	3.36	25.2
311.53	42-S0	46,865,937.19	18,885,547	27,980,390	1,331,345	2.84	21.0
311.54	42-S0	6,787,710.63	2,125,816	4,661,895	197,458	2.91	23.6
		94,013,767.78	28,245,757	65,768,011	2,850,998	3.03	23.1
320.10	60-S0.5 55-R3	255,675,564.06 21,689,328.04	73,452,571 3,259,936	182,222,993 18,429,392	7,332,914 451,433	2.87 2.08	24.9 40.8
		277,364,892.10	76,712,507	200,652,385	7,784,347	2.81	25.8
320.18	10-SQ	103,245.73	103,246	0	0	-	-
320.19	10-SQ	3,522,542.77	3,513,661	8,882	2,537	0.07	3.5
320.20	36-R0.5	84,703,323.42	32,767,124	51,936,199	2,724,881	3.22	19.1
320.29	FULLY ACCRUED	8,167.87	8,168	0	0	-	-
320.30	7-L2	8,601,165.21	6,864,049	1,737,116	577,102	6.71	3.0
320.37	30-R3	14,969,798.93	10,336,097	4,633,702	255,895	1.71	18.1
		389,273,136.03	130,304,852	258,968,284	11,344,762	2.91	22.8

PENNSYLVANIA-AMERICAN WATER COMPANY
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TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCURAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
330.00 DISTRIBUTION RESERVOIRS AND STANDPIPES	65-S0.5	114,750,102.23	37,604,850	77,145,252	2,040,752	1.78	37.8
330.10 ELEVATED TANKS AND STANDPIPES	65-S0.5	14,100,477.17	1,396,944	12,703,533	302,304	2.14	42.0
330.20 GROUND LEVEL FACILITIES	65-S0.5	18,929,725.89	1,478,786	17,450,940	411,613	2.17	42.4
330.30 BELOW GRADE FACILITIES	65-S0.5	818,672.56	134,722	683,951	16,514	2.02	41.4
330.40 CLEARWELL	65-S0.5	12,806,094.73	2,241,101	10,564,994	256,016	2.00	41.3
330.58 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	2,211,111.35	2,124,822	86,289	24,654	1.12	3.5
330.59 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	34,570,376.62	22,983,972	11,586,405	2,403,686	6.95	4.8
TOTAL ACCOUNT 330		198,186,560.55	67,965,197	130,221,364	5,455,539	2.75	23.9
331.00 MAINS AND ACCESSORIES	110-R2	2,799,921,328.82	327,632,397	2,472,288,932	33,559,667	1.20	73.7
333.00 SERVICES	70-R2.5	631,916,771.52	153,302,150	478,614,622	10,466,170	1.66	45.7
334.00 METERS AND METER INSTALLATIONS	21-L1	206,255,053.90	85,792,067	120,462,987	10,770,670	5.22	11.2
335.00 FIRE HYDRANTS	75-R2.5	122,785,610.66	21,454,868	101,330,743	1,959,904	1.60	51.7
340.00 OFFICE FURNITURE AND EQUIPMENT							
FURNITURE	20-SQ	7,475,864.68	1,347,541	6,128,324	386,093	5.16	15.9
COMPUTERS AND PERIPHERAL EQUIPMENT	5-SQ	24,511,435.46	5,940,437	18,570,998	5,214,238	21.27	3.6
COMPUTER SOFTWARE	5-SQ	45,994,769.94	21,924,860	24,069,910	8,444,686	18.36	2.9
COMPUTER SOFTWARE - BUSINESS TRANSFORMATION	10-SQ	62,990,459.09	52,072,253	10,918,206	8,099,503	12.86	1.3
OTHER OFFICE EQUIPMENT	10-SQ	7,290.67	1,744	5,547	740	10.15	7.5
TOTAL ACCOUNT 340		140,979,819.84	81,286,835	59,692,985	22,145,260	15.71	2.7
341.00 TRANSPORTATION EQUIPMENT							
NOT CLASSIFIED	7-L3	349.00	349	0	0	-	-
LIGHT DUTY TRUCKS	7-L3	28,802,310.96	17,540,380	11,261,931	2,978,791	10.34	3.8
EQUIPMENT	7-L3	23,205,811.64	13,407,514	9,798,298	2,686,946	11.58	3.6
AUTOS	7-L3	3,874,730.49	2,379,267	1,495,463	347,892	8.98	4.3
OTHER	7-L3	10,459,225.68	5,565,457	4,873,769	1,261,319	12.08	3.9
TOTAL ACCOUNT 341		66,322,427.77	38,892,967	27,429,461	7,274,948	10.97	3.8
342.00 STORES EQUIPMENT	20-SQ	448,033.65	97,064	350,970	26,762	5.97	13.1
343.00 TOOLS AND WORK EQUIPMENT	20-SQ	32,097,137.82	7,101,221	24,995,917	1,893,452	5.90	13.2
344.00 LABORATORY EQUIPMENT	20-L0.5	2,606,821.35	1,152,886	1,453,935	152,376	5.85	9.5
345.00 POWER OPERATED EQUIPMENT	19-S0.5	2,405,805.64	1,655,168	750,638	98,401	4.09	7.6
346.00 COMMUNICATION EQUIPMENT							
EQUIPMENT	15-SQ	3,459,420.00	476,123	2,983,297	226,521	6.55	13.2
NON-TELEPHONE	15-SQ	6,770,729.39	1,148,483	5,622,246	452,423	6.68	12.4
REMOTE CONTROL AND INSTRUMENTATION	10-SQ	2,790,901.75	1,618,957	1,171,945	256,489	9.19	4.6
TELEPHONE	10-SQ	188,390.60	121,502	66,889	17,853	9.48	3.7
TOTAL ACCOUNT 346		13,209,441.74	3,365,065	9,844,377	953,286	7.22	10.3

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TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2021

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2021 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCRUAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
347.00 MISCELLANEOUS EQUIPMENT	25-SQ	11,604,345.21	2,121,851	9,482,494	803,731	6.93	11.8
348.00 OTHER TANGIBLE EQUIPMENT	25-SQ	793,796.73	433,683	360,114	31,961	4.03	11.3
TOTAL DEPRECIABLE PLANT		5,478,296,131.14	1,147,853,799	4,330,442,337	127,282,565	2.32	
AMORTIZATION OF NET SALVAGE					18,150,547		
TOTAL UTILITY PLANT IN SERVICE		5,505,073,022.68	1,147,853,799	4,330,442,337	145,433,112		

* Life Span Procedure was used. Curve shown is Interim Survivor Curve.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

Account (1)	BOOK RESERVE BALANCE AS OF 12/31/2020 (2)		+	PROJECTED DEPRECIATION ACCRUALS (3)		-	PROJECTED RETIREMENTS (4)		-	PROJECTED COST OF REMOVAL (5)		+	PROJECTED SALVAGE (6)		+	ACQUISITIONS (7)		=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (8)	
303.14	1,942,823			0															1,942,823	
303.35	141,137			9,270															150,407	
303.99	6,351,030			1,204,524			60,985				285,226			11,722				7,494,569		
304.15	7,899,182			1,048,120			390,721				121,321			20,220				8,283,077		
304.20	16,349,816			2,976,022			674,004				315,258			24,251				18,550,733		
304.30	88,458,520			6,134,387			2,425,064											91,876,836		
304.36	5,992,818			322,191														6,315,009		
304.38	55,437			2,338														57,775		
304.39	104,374			3,331														107,705		
304.61	7,849,697			1,216,908			55,698				5,013			5,453				9,005,894		
304.62	13,999,901			1,402,722			23,709				3,319			853				15,381,048		
304.63	2,130,689			84,121			14,220				2,844							2,198,599		
305.00	18,943,519			2,267,393														21,210,912		
306.00	5,508,799			464,894			4,840											5,973,693		
307.00	3,088,287			259,686			179,265				46,609							3,343,133		
310.00	4,866,142			517,290			264,319				44,934							5,157,558		
311.20	3,771,805			1,021,432														4,483,984		
311.50	481,982			77,326														559,308		
311.52	1,945,471			445,658			170,963				29,064							2,191,102		
311.53	18,177,110			1,212,264			430,621				73,206							18,885,547		
311.54	1,921,773			204,043														2,125,816		
320.10	76,059,881			6,303,140			5,000,455				650,059							76,712,507		
320.18	103,246			0														103,246		
320.19	3,511,123			2,538														3,513,661		
320.20	30,554,763			2,678,001			412,071				53,569							32,767,124		
320.29	8,168			0														8,168		
320.30	5,943,551			920,498														6,864,049		
320.37	10,000,742			335,355														10,336,097		
330.00	35,124,500			3,507,933			642,239				385,344							37,604,850		
330.10	1,540,919			243,438			242,133				145,280							1,396,944		
330.20	1,787,324			345,686			408,890				245,334							1,478,786		
330.30	117,944			16,778														134,722		

PENNSYLVANIA-AMERICAN WATER COMPANY
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TABLE 3. BRINGFORWARD TO DECEMBER 31, 2021, OF BOOK RESERVE AS OF DECEMBER 31, 2020

Account	BOOK RESERVE BALANCE AS OF 12/31/2020 (2)	+	PROJECTED DEPRECIATION ACCUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (8)
330.40	1,980,284		260,817										2,241,101
330.58	2,100,168		24,654										2,124,822
330.59	20,863,908		2,449,147		329,083		9,924,329						22,983,972
331.00	302,790,062		45,553,978		10,787,314		744,450						327,632,397
333.00	144,244,631		11,456,303		1,654,334		86,202		6,631				153,302,150
334.00	74,409,987		12,124,741		663,090		223,557						85,792,067
335.00	20,020,642		2,278,774		620,991								21,454,868
340.10	971,125		376,416										1,347,541
340.20	7,343,075		4,532,973		5,935,611								5,940,437
340.30	17,701,446		10,353,824		6,130,410								21,924,860
340.31	41,731,922		10,340,331										52,072,253
340.40	1,004		740										1,744
341.00	349		0										349
341.10	14,623,372		3,145,900		238,429		4,769		14,306				17,540,380
341.20	11,191,984		2,532,823		330,514		6,610		19,831				13,407,514
341.30	2,126,610		307,184		56,799		1,136		3,408				2,379,267
341.40	4,729,807		1,013,708		185,477		3,710		11,129				5,565,457
342.00	68,032		29,032										97,064
343.00	5,263,107		1,838,114										7,101,221
344.00	978,341		174,545										1,152,886
345.00	1,541,860		113,308		143,869								1,655,168
346.00	407,979		212,013										476,123
346.10	797,215		351,268										1,148,483
346.19	1,556,269		283,385		220,697								1,618,957
346.20	608,614		39,337		526,449								121,502
347.00	1,328,449		848,537		55,135								2,121,851
348.00	401,551		32,132										433,683
TOTAL	1,054,514,266		145,901,271		39,278,399		13,401,143		117,804		0		1,147,853,799

PENNSYLVANIA-AMERICAN WATER COMPANY
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TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2020 (2)	NET ORIGINAL COST AS OF 12/31/2021 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
303.14	1,942,822.51	1,942,822.51	0.00	(487)	487	0
303.35	155,025.17	155,025.17	5.98	9,270	9,270	9,270
303.99	8,413,546.31	9,710,061.35	13.83	1,203,911	613	1,204,524
304.15	40,603,116.18	44,248,707.65	2.14	906,382	141,738	1,048,120
304.20	110,059,548.11	120,487,362.70	2.56	2,930,331	45,691	2,976,022
304.30	266,957,000.42	289,583,861.48	2.15	5,850,996	283,391	6,134,387
304.36	11,668,886.83	11,668,886.83	2.69	313,454	8,737	322,191
304.38	65,958.42	65,958.42	3.54	2,338	2,338	2,338
304.39	119,362.95	119,362.95	2.79	3,331	3,331	3,331
304.61	43,412,787.39	43,932,472.44	2.97	1,298,373	(81,465)	1,216,908
304.62	54,890,101.85	55,111,313.86	2.58	1,418,230	(15,508)	1,402,722
304.63	4,000,139.23	4,132,815.74	2.06	83,448	673	84,121
305.00	135,669,088.72	135,669,088.72	1.47	1,996,136	271,257	2,267,393
306.00	18,215,787.08	18,215,787.08	2.51	456,818	8,076	464,894
307.00	9,898,022.81	10,623,182.73	2.34	235,405	24,281	259,686
310.00	18,136,948.65	19,809,562.50	2.71	495,783	21,507	517,290
311.20	21,292,217.56	23,758,420.92	3.28	725,917	295,515	1,021,432
311.50	2,389,457.83	2,389,457.83	3.24	77,326	77,326	77,326
311.52	12,617,080.84	14,212,241.21	3.35	445,658	445,658	445,658
311.53	42,848,060.38	46,865,937.19	2.80	1,212,264	1,212,264	1,212,264
311.54	6,787,710.63	6,787,710.63	3.01	204,043	204,043	204,043
320.10	225,716,944.63	277,364,892.10	2.44	5,905,753	397,387	6,303,140
320.18	103,245.73	103,245.73	0.00	0	0	0
320.19	3,522,542.77	3,522,542.77	0.07	2,538	2,538	2,538
320.20	80,858,527.99	84,703,323.42	3.26	2,678,001	2,678,001	2,678,001
320.29	8,167.87	8,167.87	0.00	0	0	0
320.30	8,601,165.21	8,601,165.21	9.68	832,282	88,216	920,498
320.37	14,969,798.93	14,969,798.93	1.81	271,256	64,099	335,355
330.00	106,929,232.38	114,750,102.23	1.80	1,970,376	1,537,557	3,507,933
330.10	10,930,110.10	14,100,477.17	2.06	243,438	243,438	243,438
330.20	15,192,040.47	18,929,725.89	2.09	345,686	345,686	345,686
330.30	818,672.56	818,672.56	2.05	16,778	16,778	16,778

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2021

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2020 (2)	NET ORIGINAL COST AS OF 12/31/2021 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
330.40	12,806,094.73	12,806,094.73	2.04	260,817		260,817
330.58	2,211,111.35	2,211,111.35	1.12	24,654		24,654
330.59	29,919,635.20	34,570,376.62	7.86	2,449,147		2,449,147
331.00	2,675,857,649.51	2,799,921,328.82	1.21	32,758,152	12,795,826	45,553,978
333.00	604,695,086.73	631,916,771.52	1.66	10,245,705	1,210,598	11,456,303
334.00	196,137,446.01	206,255,053.90	5.51	11,091,554	1,033,187	12,124,741
335.00	115,429,813.60	122,785,610.66	1.60	1,894,800	383,974	2,278,774
340.10	5,339,828.99	7,475,864.68	5.31	340,079	36,337	376,416
340.20	19,364,761.45	24,511,435.46	21.66	4,532,973		4,532,973
340.30	42,907,597.73	45,994,769.94	21.25	10,353,824		10,353,824
340.31	62,990,459.09	62,990,459.09	16.42	10,340,331		10,340,331
340.50	7,290.67	7,290.67	10.15	740		740
341.00	349.00	349.00	0.00	0		0
341.10	26,577,670.21	28,802,310.96	11.00	3,063,529	82,371	3,145,900
341.20	20,121,976.99	23,205,811.64	11.93	2,532,823		2,532,823
341.30	3,344,774.93	3,874,730.49	8.40	307,184		307,184
341.40	8,708,645.51	10,439,225.68	11.54	1,013,708		1,013,708
342.00	448,033.65	448,033.65	6.04	27,046	1,986	29,032
343.00	29,078,050.31	32,097,137.82	5.99	1,829,220	8,894	1,838,114
344.00	2,606,821.35	2,606,821.35	6.50	169,353	5,192	174,545
345.00	2,405,805.64	2,405,805.64	4.67	112,304	1,004	113,308
346.00	2,539,854.88	3,459,420.00	6.19	188,316	23,697	212,013
346.10	4,581,387.28	6,770,729.39	6.62	351,268		351,268
346.19	3,011,599.18	2,790,901.75	9.44	283,385		283,385
346.20	714,839.66	188,390.60	5.68	39,337		39,337
347.00	11,260,526.60	11,604,345.21	7.24	827,967	20,570	848,537
348.00	793,796.73	793,796.73	4.03	31,976	156	32,132
TOTAL	5,161,654,025.49	5,478,296,131.14		127,205,227	18,696,044	145,901,271

* Annual Accrual developed based on monthly averages.

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2017			2018			2019			PROJECTED 2020			PROJECTED 2021			NET SALVAGE SALVAGE (12)*	SALVAGE ACCURAL (13)=(12)/5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	+ (4)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	+ (6)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	+ (8)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	+ (10)	GROSS SALVAGE (10)	COST OF REMOVAL (11)	= (12)*		
303.14		2,459.00		2,459.00											(2,459.00)	(492)	
303.20			2,459.00		(2,459.00)										0.00	0	
303.99															(3,062.78)	(613)	
304.15		69,090.61		1,582.30	180,812.86		27,560.73	387,837.75	1,329.00	32,333.00		11,722.00	285,226.00		(912,106.19)	(182,421)	
304.20		38,831.70		13,853.00	39,684.28		31,830.10	147,277.43	4,421.00	26,528.00		20,220.00	121,321.00		(303,318.31)	(60,664)	
304.30		36,848.82		14,493.83	1,091,908.37		66,260.61	148,391.82	2,461.00	31,989.00		24,251.00	315,258.00		(1,516,929.57)	(303,386)	
304.36					43,138.55			546.00							(43,684.55)	(8,737)	
304.61		71,906.49		729.22	6,567.28		1,864,549.94	1,304,656.48	9,550.00	9,724.00		5,013.00	473,249.97		94,650		
304.62		10,015.90			3,068.49		192,159.79	54,481.40	1,607.00	5,813.00		5,453.00	127,695.43		25,539		
304.63		2,051.43					25,209.50	8,030.27		5,357.00		853.00	2,844.00		1,264		
305.00		5,620.91						1,266,548.34							(1,272,169.25)	(254,434)	
306.00		16,836.83						17,003.99							(33,840.82)	(6,768)	
307.00		307.00			1,391.04			118,341.25							(120,350.71)	(24,070)	
310.00		2,903.30			11,634.03			42,462.99		4,760.00			48,609.00		(108,369.32)	(21,674)	
311.00	880.05	72,179.55			191,399.40		13,739.63	1,092,490.18		33,004.00			147,204.00		(1,521,657.45)	(304,331)	
320.00	3.44	115,579.33		512.50	619,426.48		229.83	924,729.91		225,992.00			703,628.00		(2,588,609.95)	(517,722)	
320.30		1,622.00						423,003.27							(424,625.27)	(84,925)	
320.37		7,150.00			29,963.00			90,807.00							(127,897.00)	(25,579)	
330.00		645,827.57		162.78	2,820,506.21		23.00	2,686,207.69		165,227.00			775,958.00		(7,093,563.69)	(1,418,713)	
331.00	107,310.05	7,290,999.85		25,598.82	11,746,655.36		13,124.96	21,381,790.52		12,141,393.00			9,924,329.00		(62,339,133.90)	(12,467,827)	
333.00	2,339.38	1,164,164.90		(214.01)	1,300,493.65		9,792.38	1,897,743.49		714,893.00			744,450.00		(5,809,827.29)	(1,161,965)	
334.00	98,185.09	960,401.22		115,629.32	913,142.15		93,029.52	2,727,391.38		110,240.00		6,631.00	86,202.00		(4,475,421.82)	(895,084)	
335.00	248.83	227,143.79		2,311.49	309,652.61		4,063.03	908,970.88		204,109.00			223,557.00		(1,866,809.93)	(373,362)	
340.00		6,364.74		8,779.58	30,861.14		10,745.87	122,477.36							(140,177.79)	(28,036)	
341.00		1,430.78		205,163.90	148,702.02		261,902.01	761,298.60		16,835.00		48,674.00	16,225.00		(378,248.49)	(75,650)	
342.00		8,345.37			245.80			9,682.12							(9,927.92)	(1,986)	
343.00		1,202.11			7,924.48		48,579.17	57,836.24							(25,526.92)	(5,105)	
344.00		98.42			4,823.99		14,919.23	14,919.23							(20,945.33)	(4,189)	
345.00		646.24		132.58	860.13		12,288.18	15,876.66							(4,547.03)	(909)	
347.00		12,915.37			30,002.27		8,306.50	87,193.50							(117,709.43)	(23,542)	
348.00					20,027.66			73,665.55							(98,302.08)	(19,660)	
					(29.21)			808.08							(778.87)	(156)	
TOTAL	208,966.84	10,772,254.65		388,735.31	19,552,862.04		2,683,394.75	36,775,532.16		78,351.00		13,728,197.00	13,401,143.00		(90,752,736.95)	(18,150,547)	

Continuation of Columns (2) through (11).

Appendix A-5.1 (WAD)

Exhibit No. 11-L
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

MECHANICSBURG, PENNSYLVANIA

WASTEWATER SSS OPERATIONS EXCLUDING
SADSBURY AND EXETER

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2022

Prepared by:



*Excellence Delivered **As Promised***

Appendix A-5.1 (WAD)

Exhibit No. 11-L
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY
Mechanicsburg, Pennsylvania

WASTEWATER SSS OPERATIONS EXCLUDING SADBURY AND EXETER

2022 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2022

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
Camp Hill, Pennsylvania



*Excellence Delivered **As Promised***

April 22, 2020

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

Attention Ashley E. Everette
Director, Rates & Regulatory

Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2022. The results of our study at December 31, 2020 are presented in our report titled "2020 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2020". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink that reads "John J. Spanos".

JOHN J. SPANOS
President

JJS:mle

066548.100

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY WASTEWATER SSS OPERATIONS EXCLUDING SADBURY AND EXETER

DEPRECIATION STUDY PART I. RESULTS OF STUDY

SUMMARY OF RESULTS

Tables 1 through 5 presented on pages I-3 through I-7 summarize the results of the depreciation study as of December 31, 2022. Table 1 sets forth the development of the net original cost by account as of December 31, 2022. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2022, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2022. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2022. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2018 through 2022.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-7. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2018 through 2022, beginning on pages III-2 through III-4.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADBURY AND EXETER

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2022

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2022 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2022 (6)
DEPRECIABLE PLANT					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	1,372,711.27				1,372,711.27
354.30 STRUCTURES AND IMPROVEMENTS - SPP	17,988,212.97		2,734,528.70		15,253,684.27
354.40 STRUCTURES AND IMPROVEMENTS - TDP	55,042,602.26		1,853,012.73		53,189,589.53
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	3,153,826.87				3,153,826.87
355.00 POWER GENERATION EQUIPMENT	4,180,589.06		144,517.16		4,036,071.90
360.10 COLLECTION SEWERS - FORCE MAINS	50,575,251.29	157,753.14	11,251,126.61		39,166,371.54
361.10 COLLECTION SEWERS - GRAVITY MAINS	120,095,333.20	133,423.53	13,295,536.11		106,666,373.56
361.20 MANHOLES	17,657,269.96		4,387,312.76		13,269,957.20
363.00 SERVICES	24,656,795.81	70,197.45	3,753,803.46		20,832,794.90
364.00 FLOW MEASURING DEVICES	371,151.65		14,726.81		356,424.84
365.00 FLOW MEASURING INSTALLATIONS	14,938.00				14,938.00
370.00 RECEIVING WELLS	143,419.77				143,419.77
371.00 PUMPING EQUIPMENT	13,374,027.20		66,626.22		13,307,400.98
380.00 TREATMENT EQUIPMENT	67,907,787.21		2,200,080.47		65,707,706.74
381.00 PLANT SEWERS	6,212,540.44		30,192.33		6,182,348.11
382.00 OUTFALL SEWER LINES	604,388.91				604,388.91
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	582,205.16				582,205.16
389.60 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	1,707,500.00				1,707,500.00
390.00 OFFICE FURNITURE AND EQUIPMENT	188,706.08				188,706.08
391.00 TRANSPORTATION EQUIPMENT	3,034,840.81				3,034,840.81
392.00 STORES EQUIPMENT	107,351.44				107,351.44
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	1,505,097.79				1,505,097.79
394.00 LABORATORY EQUIPMENT	729,305.71				729,305.71
395.00 POWER OPERATED EQUIPMENT	917,645.43		10,000.00		907,645.43
396.00 COMMUNICATION EQUIPMENT	1,744,213.66				1,744,213.66
397.00 MISCELLANEOUS EQUIPMENT	661,593.59		29,000.00		632,593.59
398.00 OTHER TANGIBLE PLANT	14,231.50				14,231.50
TOTAL DEPRECIABLE PLANT	394,523,537.04	361,374.12	39,770,463.36	0.00	354,391,699.56
NONDEPRECIABLE PLANT					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,717,020.09		125,000.00		1,592,020.09
TOTAL NONDEPRECIABLE PLANT	3,117,203.14	0.00	125,000.00	0.00	2,992,203.14
TOTAL UTILITY PLANT	397,640,740.18	361,374.12	39,895,463.36	0.00	357,383,902.70

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBUURY AND EXETER

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2022

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2022 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	1,372,711.27	97,323	1,275,388	36,320	2.79	33.3
354.30 STRUCTURES AND IMPROVEMENTS - SPP	55-S0	15,253,684.27	5,449,788	9,803,896	300,957	1.97	32.6
354.40 STRUCTURES AND IMPROVEMENTS - TDP	55-S0	53,189,589.53	13,447,768	39,741,821	1,254,377	2.36	31.7
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	3,153,826.87	1,687,584	1,466,242	63,310	2.01	23.2
355.00 POWER GENERATION EQUIPMENT	35-S0.5	4,036,071.90	2,807,978	1,228,094	63,471	1.57	19.3
360.10 COLLECTION SEWERS - FORCE MAINS	75-R3	39,166,371.54	3,526,886	35,639,485	678,631	1.73	52.5
361.10 COLLECTION SEWERS - GRAVITY MAINS	80-R2.5	106,666,373.56	13,972,547	92,693,827	1,691,826	1.59	54.8
361.20 MANHOLES	50-S2.5	13,269,957.20	2,036,681	11,233,276	348,535	2.63	32.2
363.00 SERVICES	47-R3	20,832,794.90	4,780,861	16,051,934	531,451	2.55	30.2
364.00 FLOW MEASURING DEVICES	15-L2.5	386,424.84	170,648	185,777	36,426	10.22	5.1
365.00 FLOW MEASURING INSTALLATIONS	25-S2	14,938.00	2,513	12,425	1,154	7.73	10.8
370.00 RECEIVING WELLS	50-R3	143,419.77	34,923	108,497	3,219	2.24	33.7
371.00 PUMPING EQUIPMENT	30-S0.5	13,307,400.98	2,331,656	10,975,745	602,548	4.53	18.2
380.00 TREATMENT EQUIPMENT	35-S1.5	65,707,706.74	18,480,154	47,227,552	2,355,132	3.58	20.1
381.00 PLANT SEWERS	50-R3	6,182,348.11	1,591,522	4,590,827	140,418	2.27	32.7
382.00 OUTFALL SEWER LINES	50-R3	604,388.91	244,690	359,698	12,727	2.11	28.3
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - INTANGIBLES	20-S2.5	582,205.16	231,563	350,642	31,102	5.34	11.3
389.60 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - CPS	5-SQ	1,707,500.00	457,989	1,249,511	357,607	20.94	3.5
390.00 OFFICE FURNITURE AND EQUIPMENT	20-SQ	168,706.08	37,591	131,115	13,043	7.73	10.1
391.00 TRANSPORTATION EQUIPMENT	14-L4	3,034,840.81	718,213	2,316,627	235,403	7.76	9.8
392.00 STORES EQUIPMENT	25-SQ	107,351.44	33,748	73,604	4,273	3.98	17.2
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	1,505,097.79	299,112	1,205,986	78,428	5.21	15.4
394.00 LABORATORY EQUIPMENT	15-SQ	729,305.71	275,058	454,248	43,556	5.97	10.4
395.00 POWER OPERATED EQUIPMENT	22-R2	907,645.43	389,500	518,146	39,364	4.34	13.2
396.00 COMMUNICATION EQUIPMENT	15-SQ	1,744,213.66	998,400	745,814	107,630	6.18	6.9
397.00 MISCELLANEOUS EQUIPMENT	15-SQ	632,593.59	205,091	427,503	33,372	5.28	12.8
398.00 OTHER TANGIBLE PLANT	25-SQ	14,231.50	2,461	11,771	547	3.84	21.5
TOTAL DEPRECIABLE PLANT		354,391,699.56	74,312,248	280,079,451	9,067,027	2.56	30.9
NONDEPRECIABLE PLANT							
352.10 FRANCHISES		221,139.78			897,190		
353.20 LAND AND LAND RIGHTS - COLLECTION		1,093,483.20			9,964,217		
353.30 LAND AND LAND RIGHTS - SPP		85,560.07					
353.40 LAND AND LAND RIGHTS - TDP		1,592,020.09					
TOTAL NONDEPRECIABLE PLANT		2,992,203.14					
AMORTIZATION OF NET SALVAGE							
TOTAL UTILITY PLANT		357,383,902.70	74,312,248	280,079,451			

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBUURY AND EXETER

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2022, OF BOOK RESERVE AS OF DECEMBER 31, 2021

ACCOUNT (1)	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021 (2)	PROJECTED DEPRECIATION ACCURUALS (3)	PROJECTED RETIREMENTS (4)	PROJECTED COST OF REMOVAL (5)	PROJECTED SALVAGE (6)	+	ACQUISITIONS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2022 (8)
354.20	49,219	63,092	1,401	13,587					97,323
354.30	5,144,884	325,647	18,356	2,386					5,449,788
354.40	12,232,042	1,272,456	56,167	562					13,447,768
354.70	1,613,097	88,037	3,218	10,331					1,687,584
355.00	2,739,150	68,828							2,807,978
360.10	2,894,314	759,287	62,421	64,294					3,526,886
361.10	12,678,919	1,999,555	480,223	225,705					13,972,547
361.20	1,778,786	417,490	22,832	137,220	457				2,036,681
363.00	4,422,337	604,967	122,608	123,835					4,780,861
364.00	127,900	42,748							170,648
365.00	1,315	1,198							2,513
370.00	31,682	3,241							34,923
371.00	1,690,669	652,922	9,472	2,463					2,331,656
380.00	16,084,154	2,433,983	33,913	4,070					18,480,154
381.00	1,449,946	141,576							1,591,522
382.00	231,500	13,190							244,690
389.10	199,257	32,306							231,563
389.60	106,944	351,045							457,989
390.00	24,328	13,263							37,591
391.00	533,900	218,897	29,813	4,770					718,213
392.00	29,475	4,273							33,748
393.00	227,278	71,834							299,112
394.00	233,029	42,973	859	86					275,058
395.00	361,954	35,148	7,453	149					389,500
396.00	887,391	113,680	2,450	221					988,400
397.00	176,585	28,506							205,090
398.00	1,652	809							2,461
TOTAL	65,951,706	9,800,949	851,187	589,676	457	+	0	=	74,312,248

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBUARY AND EXETER

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2021 (2)	NET ORIGINAL COST AS OF 12/31/2022 (3)	ACCRUAL RATE (4)	DEPRECIATION ACCRUALS (5)*	AMORTIZATION OF NET SALVAGE (6)	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
354.20	1,350,155.77	1,372,711.27	2.84	38,574	24,518	63,092
354.30	14,958,113.65	15,253,684.27	2.01	302,788	22,859	325,647
354.40	52,285,165.25	53,189,589.53	2.41	1,267,886	4,570	1,272,456
354.70	3,102,005.24	3,153,826.87	2.01	62,724	25,313	88,037
355.00	4,036,071.90	4,036,071.90	1.63	65,788	3,040	68,828
360.10	38,161,242.14	39,166,371.54	1.75	673,706	85,581	759,287
361.10	99,296,640.99	106,666,373.56	1.60	1,633,382	366,173	1,999,555
361.20	12,812,001.40	13,269,957.20	2.63	342,146	75,344	417,490
363.00	18,663,546.11	20,832,794.90	2.55	500,757	104,210	604,967
364.00	356,424.84	356,424.84	11.98	42,700	48	42,748
365.00	14,938.00	14,938.00	8.02	1,198		1,198
370.00	143,419.77	143,419.77	2.26	3,241		3,241
371.00	13,154,873.34	13,307,400.98	4.71	619,894	33,028	652,922
380.00	64,581,620.12	65,707,706.74	3.67	2,371,867	62,116	2,433,983
381.00	6,182,348.11	6,182,348.11	2.29	141,576		141,576
382.00	604,388.91	604,388.91	2.13	12,873	317	13,190
389.10	582,205.16	582,205.16	5.48	31,905	401	32,306
389.60	1,655,000.00	1,707,500.00	20.97	351,045		351,045
390.00	168,706.08	168,706.08	7.76	13,092	171	13,263
391.00	2,554,774.18	3,034,840.81	7.83	213,813	5,084	218,897
392.00	107,351.44	107,351.44	3.98	4,273		4,273
393.00	1,199,614.28	1,505,097.79	5.29	71,382	452	71,834
394.00	628,336.51	729,305.71	6.14	41,616	1,357	42,973
395.00	787,628.77	907,645.43	4.17	34,678	470	35,148
396.00	1,669,700.06	1,744,213.66	6.33	107,931	5,749	113,680
397.00	496,492.71	632,593.59	4.84	26,200	2,306	28,506
398.00	14,231.50	14,231.50	3.93	559	250	809
TOTAL	339,566,996.23	354,391,699.56		8,977,592	823,357	9,800,949

* Total accruals shown are based on average monthly balances.

PENNSYLVANIA-AMERICAN WATER COMPANY
 WASTEWATER SSS OPERATIONS EXCLUDING SADSBUURY AND EXETER
 TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT (1)	2018		2019		PROJECTED 2020		PROJECTED 2021		PROJECTED 2022		NET SALVAGE (12)*	SALVAGE ACCRUAL (13)=(12)5
	GROSS SALVAGE (2)	COST OF REMOVAL (3)	GROSS SALVAGE (4)	COST OF REMOVAL (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	GROSS SALVAGE (8)	COST OF REMOVAL (9)	GROSS SALVAGE (10)	COST OF REMOVAL (11)		
354.20		2,367		27,531		29,175		63,211		13,587	(135,871)	(27,174)
354.30		87		61,135		5,124		11,101		2,366	(79,833)	(15,967)
354.40		(18,539)		1,986		1,206		2,613		562	12,172	2,434
354.70		36,100		18,075		22,182		48,060		10,331	(134,747)	(26,949)
355.00		4,539		9,730		9,730		41,420		64,294	(14,269)	(2,854)
360.10		85,350		245,202		170,104		222,272		225,705	(490,390)	(96,078)
361.10		345,943		1,038,559		132,346		135,702	457	137,220	(2,002,583)	(400,517)
361.20				109,567		130,023		122,465		123,835	(513,465)	(102,697)
363.00		48,455		150,830		440					(675,608)	(115,122)
364.00				240							(240)	(48)
371.00		(18,885)		141,438		37,534		65,469		2,463	(162,550)	(32,510)
380.00		12,304		214,843		11,073				4,070	(307,759)	(61,552)
382.00		961									(961)	(196)
388.10		(3,678)		5,682							(2,003)	(401)
390.00		94									(94)	(19)
391.00		9,708								4,770	(30,189)	(6,038)
393.00				6,029		5,013		4,669			(1,931)	(386)
394.00		118		5,593		1,012		146		86	(6,809)	(1,362)
395.00				2,048		157		293		149	(2,500)	(500)
396.00				1,898		21,079				221	(23,491)	(4,698)
397.00		6,019		5,513							(11,532)	(2,306)
398.00				1,251							(1,251)	(250)
TOTAL	0	510,964	0	2,049,082	440	607,449	452	730,122	457	589,676	(4,485,944)	(897,190)

* Column (12) equals the summation of Columns (2) through (11).

Appendix A-5.1 (WAD)

Pennsylvania American Water Company
Valley Township, Chester County, Pennsylvania

Water System
Appraisal Work Papers
As of December 17, 2019

PAWC General Rate Cases Depreciation Studies
Water and Wastewater 2017

AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net

PENNSYLVANIA-AMERICAN WATER COMPANY

2017 GENERAL BASE RATE CASE

R-2017-2595853

EXHIBIT NO. 11-C - DEPRECIATION STUDY

WATER OPERATIONS AS OF

DECEMBER 31, 2018

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY
HERSHEY, PENNSYLVANIA

2018 DEPRECIATION STUDY
CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2018

Prepared by:



Gannett Fleming

Excellence Delivered As Promised

Appendix A-5.1 (WAD)

Exhibit No. 11-C
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Hershey, Pennsylvania

2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WATER PLANT
AS OF DECEMBER 31, 2018

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



Excellence Delivered As Promised

April 21, 2017

Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033

Attention: Mr. John R. Cox
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to water plant as of December 31, 2018. The results of our study at December 31, 2013 are presented in our report titled "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Water Plant as of December 31, 2017". The same methods, procedures and estimates are used in both studies.

Summaries of the original cost, annual accruals, book depreciation reserve and amortization of net salvage are presented in Tables 1 through 5, beginning on page I-3 of the attached report.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink that reads 'John J. Spanos'.

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

Gannett Fleming Valuation and Rate Consultants, LLC

P.O. Box 67100 • Harrisburg, PA 17106-7100 | 207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

DEPRECIATION STUDY

RESULTS OF STUDY

DESCRIPTION OF SUMMARY TABULATIONS

Tables 1 through 5 presented on pages 3 through 10 summarize the results of the depreciation study as of December 31, 2018. Table 1 sets forth the development of the net original cost by account as of December 31, 2018. Table 2 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of December 31, 2018, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 3 presents the bringforward of the book reserve to December 31, 2018. Table 4 sets forth the calculation of the depreciation accruals for the twelve months ended December 31, 2018. Table 5 presents the annual amortization of experienced and estimated net salvage based on the period 2014 through 2018.

DESCRIPTION OF DETAILED TABULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage and cost of removal are set forth by account for the years 2014 through 2018, beginning on pages III-2 through III-5.

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2018 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2018 (6)
INTANGIBLE PLANT					
301.00 ORGANIZATION	774,398.06				774,398.06
302.00 FRANCHISES AND CONSENTS	2,404,599.20				2,404,599.20
303.00 MISCELLANEOUS INTANGIBLE PLANT	15,569.16				15,569.16
TOTAL INTANGIBLE PLANT	3,194,566.42	0.00	0.00	0.00	3,194,566.42
NONDEPRECIABLE PLANT					
303.20 POWER AND PUMPING LAND	3,576,428.03				3,576,428.03
303.30 PURIFICATION LAND	15,412.25				15,412.25
303.40 TRANS. AND DISTR. LAND AND RIGHTS OF WAY	4,578,480.03		215,927.20		4,362,552.83
303.50 DISTRIBUTION RESERVOIRS AND STANDPIPE LAND	2,389,882.77				2,389,882.77
303.51 TRANSMISSION AND DISTRIBUTION - LAND	1,762,423.06				1,762,423.06
303.52 TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	5,288,947.81				5,288,947.81
303.61 OFFICE LAND	3,918,022.99				3,918,022.99
TOTAL NONDEPRECIABLE PLANT	21,529,596.94	0.00	215,927.20	0.00	21,313,669.74
DEPRECIABLE PLANT					
303.14 WATER RIGHTS - HIBERNIA	1,942,822.51				1,942,822.51
303.35 WASTE HANDLING AND TREATMENT LAND	155,025.17				155,025.17
303.99 COMPREHENSIVE PLANNING STUDIES	9,920,726.11				9,920,726.11
304.15 OTHER WATER SOURCE STRUCTURES	34,442,969.90				34,442,969.90
304.20 POWER AND PUMPING STRUCTURES	107,320,207.30		1,289,607.60	41,310.00	105,989,289.70
304.30 PURIFICATION BUILDINGS	274,724,337.33		169,605.01	230,375.00	274,324,367.32
304.36 WASTE HANDLING AND TREATMENT STRUCTURE	11,733,221.74				11,733,221.74
304.38 WASTE HANDLING & TREATMENT STRUCTURE PAINTING	65,958.42				65,958.42
304.39 PURIFICATION BUILDINGS - TANK PAINTING	134,806.79				134,806.79
304.61 OFFICE BUILDINGS	40,019,986.62		60,000.00	12,834.00	39,947,152.62
304.62 STORES, SHOP AND GARAGE BUILDINGS	55,222,287.14		576.00		55,221,711.14
304.63 MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	4,933,374.39				4,933,374.39
305.00 COLLECTING AND IMPOUNDING RESERVOIRS	134,357,766.90		3,575.00		134,354,191.90
306.00 LAKE, RIVER AND OTHER INTAKES	20,005,870.35		41,551.00		19,964,319.35
307.00 WELLS AND SPRINGS	11,241,893.43		71,610.27		11,170,283.16
310.00 OTHER POWER PRODUCTION EQUIPMENT	18,152,052.81		118,273.00	26,561.00	18,007,218.81
311.20 ELECTRIC PUMPING EQUIPMENT	21,282,287.19		1,954,569.05	116,716.00	19,211,002.14
311.50 OTHER	1,634,152.00				1,634,152.00
311.52 SOURCE OF SUPPLY	8,509,617.14				8,509,617.14
311.53 WATER TREATMENT	47,732,222.90				47,732,222.90
311.54 TRANSMISSION AND DISTRIBUTION	8,693,988.14				8,693,988.14

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2018 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2018 (6)
320.10 PURIFICATION SYSTEM - LARGE STRUCTURES	203,017,958.78		27,162.27	627,852.00	202,362,944.51
320.18 PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	103,245.73				103,245.73
320.19 PURIFICATION SYSTEM - LARGE STRUCTURES PAINT	3,770,702.48				3,770,702.48
320.20 PURIFICATION SYSTEM - CHEMICAL TREATMENT	83,453,443.30		42,367.00		83,411,076.30
320.29 PURIFICATION SYSTEM - CHEM. TREATMENT PAINT	8,167.87				8,167.87
320.30 GRANULAR ACTIVATED CARBON	8,693,834.87				8,693,834.87
320.37 WASTE HANDLING & TREATMENT - EQUIPMENT	16,075,077.23				16,075,077.23
330.00 DISTRIBUTION RESERVOIRS AND STANDPIPES	101,037,841.09		2,905,114.51		98,132,726.58
330.10 ELEVATED TANKS AND STANDPIPES	17,636,401.77				17,636,401.77
330.20 GROUND LEVEL FACILITIES	22,144,158.48				22,144,158.48
330.30 BELOW GRADE FACILITIES	818,744.06				818,744.06
330.40 CLEARWELL	14,179,641.14				14,179,641.14
330.58 DISTR. RESERVOIRS AND STANDPIPES - PAINTING	2,375,281.44				2,375,281.44
330.59 DISTR. RESERVOIRS AND STANDPIPES - PAINTING	36,418,707.41				36,418,707.41
331.00 MAINS AND ACCESSORIES	2,676,234,771.44	81,810,993.14	178,351,203.78	502,366.00	2,415,570,208.52
333.00 SERVICES	578,601,077.41	1,753,981.88	9,002,408.46		567,844,687.07
334.00 METERS	203,441,435.13	305,369.35	1,653,080.42		201,482,985.36
335.00 FIRE HYDRANTS	107,503,420.52		4,275,268.25		103,228,152.27
340.10 OFFICE FURNITURE	19,179,166.67				19,179,166.67
340.20 COMPUTERS AND PERIPHERAL EQUIPMENT	18,458,835.00		354.00		18,458,481.00
340.30 COMPUTER SOFTWARE - 5 YEAR	36,694,738.71				36,694,738.71
340.31 COMPUTER SOFTWARE - 10 YEAR	62,548,894.51				62,548,894.51
341.00 NOT CLASSIFIED	16,002.14				16,002.14
341.10 LIGHT DUTY TRUCKS	18,911,227.50				18,911,227.50
341.20 EQUIPMENT	14,430,392.96				14,430,392.96
341.30 AUTOS	4,883,332.68				4,883,332.68
341.40 OTHER	5,895,986.16				5,895,986.16
342.00 STORES EQUIPMENT	400,072.70				400,072.70
343.00 TOOLS AND WORK EQUIPMENT	26,095,362.58				26,095,362.58
344.00 LABORATORY EQUIPMENT	3,323,028.15				3,323,028.15
345.00 POWER OPERATED EQUIPMENT	2,571,357.61				2,571,357.61
346.00 EQUIPMENT	2,585,584.40				2,585,584.40
346.10 NON-TELEPHONE	918,926.11				918,926.11
346.19 REMOTE CONTROL AND INSTRUMENTATION	6,460,864.86				6,460,864.86
346.20 TELEPHONE	831,870.50				831,870.50
347.00 MISCELLANEOUS EQUIPMENT	17,035,118.69				17,035,118.69
348.00 OTHER TANGIBLE EQUIPMENT	735,410.29		4,085.00		735,410.29
TOTAL DEPRECIABLE PLANT	5,129,715,656.65	83,870,344.37	199,970,471.62	1,558,014.00	4,844,316,826.66
TOTAL WATER PLANT IN SERVICE	5,154,439,820.01	83,870,344.37	200,186,398.82	1,558,014.00	4,868,825,062.82

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2018 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCRUAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
INTANGIBLE PLANT							
301.00 ORGANIZATION	NONDEPR.	774,398.06					
302.00 FRANCHISES AND CONSENTS	NONDEPR.	2,404,599.20					
303.00 MISCELLANEOUS INTANGIBLE PLANT	NONDEPR.	15,569.16					
TOTAL INTANGIBLE PLANT		3,194,566.42					
NONDEPRECIABLE PLANT							
303.20 POWER AND PUMPING LAND	NONDEPR.	3,576,428.03					
303.30 PURIFICATION LAND	NONDEPR.	15,412.25					
303.40 TRANSMISSION AND DISTRIBUTION LAND AND RIGHTS OF WAY	NONDEPR.	4,362,552.83					
303.50 DISTRIBUTION RESERVOIRS AND STANDPIPES LAND	NONDEPR.	2,389,882.77					
303.51 TRANSMISSION AND DISTRIBUTION - LAND	NONDEPR.	1,782,423.06					
303.52 TRANSMISSION AND DISTRIBUTION - RIGHTS OF WAY	NONDEPR.	5,288,947.81					
303.61 OFFICE LAND	NONDEPR.	3,918,022.99					
TOTAL NONDEPRECIABLE PLANT		21,313,669.74					
DEPRECIABLE PLANT							
303.14 WATER RIGHTS - HIBERNIA	25-SQ	1,942,822.51	1,763,172	179,651	119,767	6.16	1.5
303.35 WASTE HANDLING AND TREATMENT LAND	100-R2	155,025.17	155,025	0	0	-	-
303.99 COMPREHENSIVE PLANNING STUDIES	5-SQ	9,920,726.11	6,716,899	3,203,827	1,251,002	12.61	2.6
304.15 OTHER WATER SOURCE STRUCTURES	60-R3	34,442,969.90	7,573,274	26,869,696	624,862	1.81	43.0
304.20 POWER AND PUMPING STRUCTURES	70-R2.5	64,671,856.38	7,894,471	56,777,385	1,515,893	2.34	37.5
LARGE STRUCTURES	55-R3	41,317,433.32	9,408,085	31,909,348	1,013,195	2.45	31.5
OTHER STRUCTURES							
TOTAL ACCOUNT 304.2		105,989,289.70	17,302,556	88,686,733	2,529,088	2.39	35.1
304.30 PURIFICATION BUILDINGS	60-R2.5	221,661,139.93	71,976,298	149,684,840	4,739,588	2.14	31.6
LARGE STRUCTURES	55-R3	52,663,217.39	17,798,107	34,865,110	965,350	1.83	36.1
OTHER STRUCTURES							
TOTAL ACCOUNT 304.3		274,324,357.32	89,774,405	184,549,950	5,704,938	2.08	32.3
304.36 WASTE HANDLING AND TREATMENT STRUCTURES	60-R2.5	11,733,221.74	5,437,209	6,296,013	317,692	2.71	19.8
304.38 WASTE HANDLING AND TREATMENT STRUCTURES PAINTING	10-SQ	65,958.42	53,322	12,636	1,944	2.95	6.5
304.39 PURIFICATION BUILDINGS - TANK PAINTING	10-SQ	134,806.79	118,388	16,419	2,526	1.87	6.5
304.61 OFFICE BUILDINGS	50-R1.5	33,043,308.29	2,227,308	30,816,000	1,588,814	4.81	19.4
LARGE STRUCTURES	45-R3	6,903,844.33	1,750,585	5,143,259	252,918	3.66	20.3
OTHER OTHER STRUCTURES							
TOTAL ACCOUNT 304.61		39,947,152.62	3,987,893	35,959,259	1,841,732	4.61	19.5
304.62 STORES, SHOP AND GARAGE BUILDINGS	75-R2	46,534,320.53	5,760,761	40,773,559	1,216,856	2.61	33.5
LARGE STRUCTURES	45-R3	8,687,390.61	2,972,865	5,714,526	197,657	2.28	28.9
OTHER OTHER STRUCTURES							
TOTAL ACCOUNT 304.62		55,221,711.14	8,733,626	46,488,085	1,414,513	2.56	32.9

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET ORIGINAL COST AS OF DECEMBER 31, 2018 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	ANNUAL ACCRUAL AMOUNT (6)	ANNUAL ACCRUAL RATE, PERCENT (7)	COMPOSITE REMAINING LIFE (8)
304.63 MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	50-R2.5	4,933,374.39	698,106	4,245,268	119,687	2.41	35.7
TOTAL ACCOUNT 304		526,792,842.02	133,668,779	393,124,059	12,556,182	2.38	31.3
305.00 COLLECTING AND IMPOUNDING RESERVOIRS	125-R2.5	127,785,628.42	12,895,938	114,899,691	1,855,378	1.45	61.9
LARGE RESERVOIRS	75-R3	6,558,563.48	1,994,257	4,564,306	211,899	3.23	21.5
OTHER RESERVOIRS							
TOTAL ACCOUNT 305		134,354,191.90	14,890,195	119,463,997	2,067,277	1.54	57.8
306.00 LAKE, RIVER AND OTHER INTAKES	65-S1.5	14,550,654.76	4,232,561	10,318,093	281,627	1.94	36.6
LARGE RESERVOIRS	60-S1	5,413,664.59	1,518,542	3,895,123	114,947	2.12	33.9
OTHER RESERVOIRS							
TOTAL ACCOUNT 306		19,964,319.35	5,751,103	14,213,216	396,574	1.99	35.8
307.00 WELLS AND SPRINGS	55-R2	11,170,283.16	4,335,267	6,835,016	214,258	1.92	31.9
310.00 POWER GENERATION EQUIPMENT	40-R2.5	18,007,218.81	4,138,472	13,868,747	507,133	2.82	27.3
PUMPING EQUIPMENT	50-R1	19,211,002.14	2,866,110	16,344,892	607,142	3.16	26.9
ELECTRIC PUMPING EQUIPMENT	50-R1	1,634,152.00	442,578	1,191,574	38,677	2.38	30.6
OTHER	50-R1	8,509,617.14	1,490,308	7,019,309	230,180	2.70	30.5
SOURCE OF SUPPLY	50-R1	47,732,222.90	24,443,262	23,288,961	844,364	1.77	27.6
WATER TREATMENT	50-R1	8,693,988.14	2,116,640	6,577,348	228,997	2.63	28.7
TRANSMISSION AND DISTRIBUTION	50-R1						
TOTAL ACCOUNT 311		85,780,982.32	31,358,898	54,422,084	1,949,560	2.27	27.9
PURIFICATION SYSTEM	70-R2	184,705,299.72	68,522,614	116,182,684	3,855,315	2.09	30.1
PURIFICATION STRUCTURES	55-R3	17,657,644.79	6,484,933	11,162,712	326,633	1.85	34.2
OTHER OTHER STRUCTURES							
TOTAL ACCOUNT 320.1		202,362,944.51	75,017,547	127,345,396	4,181,948	2.07	30.5
320.18 LARGE STRUCTURES PAINT	10-SQ	103,245.73	103,246	0	0	-	-
320.19 LARGE STRUCTURES PAINT	10-SQ	3,770,702.48	3,730,550	40,152	6,177	0.16	65
320.20 CHEMICAL TREATMENT	32-R1	83,411,076.30	32,322,374	51,088,702	3,007,085	3.61	17.0
320.29 CHEMICAL TREATMENT PAINT	FULLY ACCRUED	8,167.87	8,168	0	0	-	-
TOTAL PURIFICATION SYSTEM		289,656,136.89	111,181,885	178,474,250	7,195,210	2.48	24.8
320.30 GRANULAR ACTIVATED CARBON	6-L2.5	8,663,834.87	7,889,111	804,724	352,710	4.06	2.3
320.37 WASTE HANDLING AND TREATMENT - EQUIPMENT	25-R3	16,075,077.23	10,177,065	5,898,012	454,920	2.83	13.0
TOTAL ACCOUNT 320		314,425,048.99	129,248,061	185,176,986	8,002,840	2.55	23.1
330.00 DISTRIBUTION RESERVOIRS AND STANDPIPES	66-R2	98,132,726.58	33,734,636	64,398,091	1,654,187	1.69	38.9
330.10 ELEVATED TANKS AND STANDPIPES	65-R2	17,696,401.77	1,965,151	15,641,251	351,909	2.00	41.4
330.20 GROUND LEVEL FACILITIES	66-R2	22,144,158.48	1,625,703	20,518,455	461,150	2.08	44.5
330.30 BELOW GRADE FACILITIES	65-R2	818,744.06	94,397	724,347	15,960	1.95	45.3
330.40 CLEARWELL	65-R2	14,179,641.14	1,641,824	12,537,817	277,639	1.96	45.2
330.58 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	2,375,281.44	2,271,962	103,319	15,895	0.67	65
330.59 DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	36,418,707.41	23,152,151	13,266,556	1,947,155	5.35	6.8
TOTAL ACCOUNT 330		191,705,660.88	64,515,824	127,189,836	4,723,916	2.46	26.9

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2018

	(1) DEPRECIABLE GROUP	(2) SURVIVOR CURVE	(3) NET ORIGINAL COST AS OF DECEMBER 31, 2018	(4) BOOK RESERVE	(5) FUTURE ACCRUALS	(6) ANNUAL ACCRUAL AMOUNT	(7) ANNUAL ACCRUAL RATE, PERCENT	(8) COMPOSITE REMAINING LIFE
331.00	MAINS AND ACCESSORIES	110-R2	2,415,570,208.52	334,433,465	2,081,136,744	28,333,986	1.17	73.5
333.00	SERVICES	70-R2	567,844,687.07	136,762,554	429,082,133	9,665,934	1.70	44.4
334.00	METERS AND METER INSTALLATIONS	19-L1.5	201,482,985.36	86,722,828	114,760,157	11,361,534	5.64	10.1
335.00	FIRE HYDRANTS	72-R2	103,228,132.27	21,864,870	81,363,262	1,738,263	1.68	46.8
340.00	OFFICE FURNITURE AND EQUIPMENT							
	FURNITURE	20-SQ	19,179,166.67	10,246,557	8,932,610	1,167,381	6.09	7.7
	COMPUTERS AND PERIPHERAL EQUIPMENT	5-SQ	18,458,481.00	10,236,065	8,222,416	4,056,320	21.98	2.0
	COMPUTER SOFTWARE - 5 YEAR	5-SQ	36,694,738.71	11,923,801	24,770,938	7,550,771	20.58	3.3
	COMPUTER SOFTWARE - 10 YEAR	10-SQ	62,548,894.51	33,663,138	28,885,757	7,051,654	11.27	4.1
	TOTAL ACCOUNT 340		136,881,280.89	66,069,561	70,811,721	19,825,926	14.48	3.6
341.00	TRANSPORTATION EQUIPMENT							
	NOT CLASSIFIED	6-L3	16,002.14	16,002	0	0	-	-
	LIGHT DUTY TRUCKS	6-L3	18,911,227.50	11,779,314	7,131,914	2,386,794	12.62	3.0
	EQUIPMENT	6-L3	14,430,392.96	8,523,832	5,906,561	1,912,723	13.25	3.1
	AUTOS	6-L3	4,883,332.68	3,523,988	1,359,336	437,513	8.96	3.1
	OTHER	6-L3	5,895,966.16	3,635,257	2,260,729	740,427	12.56	3.1
	TOTAL ACCOUNT 341		44,136,941.44	27,478,403	16,658,539	5,477,457	12.41	3.0
342.00	STORES EQUIPMENT	20-SQ	400,072.70	175,368	224,705	25,608	6.45	8.7
343.00	TOOLS AND WORK EQUIPMENT	20-SQ	26,085,301.58	6,924,992	19,170,310	1,386,538	5.31	13.8
344.00	LABORATORY EQUIPMENT	20-R0.5	3,323,028.15	1,953,912	1,369,116	149,806	4.51	9.1
345.00	POWER OPERATED EQUIPMENT	10-S2	2,571,357.61	2,356,661	214,697	54,819	2.12	3.9
346.00	COMMUNICATION EQUIPMENT							
	EQUIPMENT	15-SQ	2,585,584.40	1,596,948	988,636	191,330	7.40	5.2
	NON-TELEPHONE	15-SQ	918,926.11	337,227	581,699	62,431	6.79	9.3
	REMOTE CONTROL AND INSTRUMENTATION	10-SQ	6,460,864.86	2,304,114	4,156,751	639,314	9.90	6.5
	TELEPHONE	10-SQ	831,870.50	576,271	255,600	90,692	10.90	2.8
	TOTAL ACCOUNT 346		10,797,245.87	4,814,560	5,982,686	983,767	9.11	6.1
347.00	MISCELLANEOUS EQUIPMENT	25-SQ	17,031,033.69	7,190,728	9,840,306	740,716	4.35	13.3
348.00	OTHER TANGIBLE EQUIPMENT	25-SQ	735,410.29	336,044	399,366	29,846	4.06	13.4
	TOTAL DEPRECIABLE PLANT		4,844,316,826.66	1,095,625,641	3,748,691,181	111,562,709	2.30	
	AMORTIZATION OF NET SALVAGE					10,118,367		
	TOTAL WATER PLANT IN SERVICE		4,868,826,062.82	1,095,625,641	3,748,691,181	121,681,076		

* Life Span Procedure was used. Curve shown is Interim Survivor Curve.

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2018, OF BOOK RESERVE AS OF DECEMBER 31, 2017

Account (1)	BOOK RESERVE BALANCE AS OF 12/31/2017 (2)	+	PROJECTED DEPRECIATION ACCUALS (3)	-	PROJECTED RETIREMENTS (4)	-	PROJECTED COST OF REMOVAL (5)	+	PROJECTED SALVAGE (6)	+	ACQUISITIONS AND ADJUSTMENTS (7)	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2018 (8)
303.14	1,643,499		119,673										1,763,172
303.35	155,025		1								(1)		155,025
303.99	5,352,539		1,364,360										6,716,899
304.15	6,909,235		664,039										7,573,274
304.20	15,033,851		2,322,205		50,000		3,500						17,302,556
304.30	85,330,298		5,335,142		625,500		125,100		31,275				89,946,115
304.36	5,115,719		321,490										5,437,209
304.61	8,272,646		492,346		4,118,189		658,910						3,987,893
304.62	8,353,831		863,511		420,623		63,093						8,733,626
304.63	587,392		100,714										688,106
305.00	13,760,888		1,974,307		676,000		169,000						14,890,195
306.00	5,387,209		363,894										5,751,103
307.00	4,108,224		227,043										4,335,267
310.00	3,660,377		478,095										4,138,472
311.00	29,682,739		1,686,559		10,000		400						31,358,898
320.00	105,563,784		6,709,898		983,601		108,196						111,181,885
320.30	7,281,524		618,087		10,000		500						7,889,111
320.37	9,643,694		533,371										10,177,065
330.00	59,927,838		5,281,086		415,030		278,070						64,515,824
331.00	307,251,055		33,308,236		2,001,904		4,143,941		20,019				334,433,465
333.00	130,484,389		10,279,715		758,163		1,288,877		45,490				138,762,554
334.00	82,002,013		12,137,416		5,794,220		1,796,208		173,827				86,722,828
335.00	20,413,015		1,835,503		132,750		253,553		2,655				21,864,870
340.00	54,302,838		19,960,056		8,193,333								66,069,561
341.00	23,491,852		5,385,886		1,385,480		13,855						27,478,403
342.00	148,957		26,411										175,368
343.00	5,794,792		1,403,657		273,457								6,924,992
344.00	1,785,651		168,261										1,953,912
345.00	2,212,806		143,855										2,356,661
346.00	4,832,669		939,756		957,865								4,814,560
347.00	7,210,908		780,531		800,711								7,190,728
348.00	306,186		29,858										336,044
TOTAL	1,016,007,443		115,854,962		27,606,826		8,903,203		273,266		(1)		1,095,625,641

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2018

ACCOUNT (1)	NET ORIGINAL COST AS OF 12/31/2017 (2)	NET ORIGINAL COST AS OF 12/31/2018 (3)	ACCRUAL RATE (4)	AVERAGE ACCRUALS (5) **	AMORTIZATION OF NET SALVAGE (6) **	PROJECTED DEPRECIATION ACCRUALS (7)=(5)+(6)
303.14	1,942,822.51	1,942,822.51	6.16	119,678	(5)	119,673
303.35	155,025.17	155,025.17	0.00	0	1	1
303.99	9,576,726.11	9,920,726.11	13.49	1,364,360	0	1,364,360
304.15	34,442,969.90	34,442,969.90	1.83	630,306	33,733	664,039
304.20	93,905,163.70	105,989,289.70	2.43	2,294,131	28,074	2,322,205
304.30	243,136,140.53	274,525,122.53	2.04	5,060,596	274,546	5,335,142
304.36	11,733,221.74	11,733,221.74	2.74	321,490	0	321,490
304.61	17,094,819.62	39,947,152.62	2.57	463,808	28,538	492,346
304.62	32,773,506.14	55,221,711.14	2.43	827,212	36,299	863,511
304.63	3,533,821.39	4,933,374.39	2.36	84,774	15,940	100,714
305.00	104,994,473.90	134,354,191.90	1.59	1,841,311	132,996	1,974,307
306.00	17,500,498.35	19,964,319.35	2.01	362,121	1,773	363,894
307.00	11,170,283.16	11,170,283.16	1.96	218,938	8,105	227,043
310.00	16,166,661.81	18,007,218.81	2.80	459,831	18,264	478,095
311.00	75,163,955.32	85,780,982.32	2.09	1,580,172	106,387	1,686,559
320.00	249,747,732.89	289,656,136.89	2.42	6,175,354	534,544	6,709,898
320.30	8,392,061.87	8,693,834.87	6.87	577,398	40,689	618,087
320.37	16,075,077.23	16,075,077.23	3.07	493,505	39,866	533,371
330.00	175,036,176.88	191,705,660.88	2.38	4,247,686	1,033,400	5,281,086
331.00	2,266,777,896.52	2,415,570,208.52	1.71	27,309,171	5,999,065	33,308,236
333.00	544,561,188.07	567,844,687.07	1.71	9,499,159	780,556	10,279,715
334.00	190,951,156.36	201,482,985.36	5.65	11,052,527	1,084,889	12,137,416
335.00	97,220,732.27	103,228,152.27	1.69	1,691,756	143,747	1,835,503
340.00	128,187,365.27	136,881,280.89	14.81	19,947,271	12,785	19,960,056
341.00	38,595,020.44	44,136,941.44	13.47	5,380,407	5,479	5,385,886
342.00	400,072.70	400,072.70	6.57	26,285	126	26,411
343.00	24,418,459.37	26,095,301.58	5.47	1,390,131	13,526	1,403,657
344.00	3,323,028.15	3,323,028.15	4.99	165,819	2,442	168,261
345.00	2,571,357.61	2,571,357.61	5.56	142,967	888	143,855
346.00	9,582,111.31	10,797,245.87	9.36	935,813	3,943	939,756
347.00	16,642,716.36	17,031,033.69	4.55	773,172	7,359	780,531
348.00	735,410.29	735,410.29	4.06	29,858	0	29,858
TOTAL	4,446,507,652.94	4,844,316,826.66		105,467,007	10,387,955	115,854,962

** developed in monthly bringforward schedule

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

Account (1)	EXPERIENCED AND ESTIMATED NET SALVAGE					5 - YEAR AMORT. (7)
	2014 (2)	2015 (3)	2016 (4)	2017 (5)	2018 (5)	
303.35	0	0	26	0	0	(5)
304.15	(4)	0	0	0	0	1
304.20	(46,636)	(46,243)	(70,089)	0	0	32,594
304.30	(53,488)	(56,757)	(26,237)	0	(3,500)	27,996
304.61	319,920	(476,945)	(191,035)	(19,080)	(93,825)	92,193
304.62	(65,824)	0	(70,936)	0	(658,910)	159,134
304.63	(80,107)	(3,615)	(48,019)	(14,400)	(63,093)	41,847
305.00	0	(59,776)	(11,676)	(8,250)	0	15,940
306.00	(317,805)	(46,348)	(84,116)	(59,314)	(169,000)	135,316
307.00	(2,002)	(324)	(6,542)	0	0	1,773
310.00	(13,938)	(16,118)	(1,054)	0	0	6,222
311.00	0	(8,915)	(45,776)	0	0	10,938
320.00	(162,341)	(159,509)	(103,119)	0	(400)	85,074
320.30	(93,583)	(182,337)	(101,953)	(91,944)	(108,196)	115,603
320.37	(27,730)	(78,144)	(16,457)	0	(500)	24,566
330.00	(6,734)	0	(192,597)	0	0	39,866
331.00	(631,746)	(1,024,942)	(1,370,181)	(475,306)	(278,070)	756,049
333.00	(3,496,437)	(7,578,550)	(11,564,326)	(4,703,868)	(4,123,922)	6,293,421
334.00	(446,624)	(606,667)	(987,614)	(1,239,963)	(1,243,387)	904,851
335.00	(764,036)	(1,258,131)	(770,084)	(1,414,519)	(1,622,381)	1,165,830
340.00	(146,091)	81,394	(276,615)	(244,260)	(250,898)	167,294
341.00	1,941	(20,871)	(41,508)	0	0	12,088
342.00	(1,555)	(13,623)	(1,158)	(11,060)	(13,855)	8,250
343.00	0	(630)	0	0	0	126
344.00	(9,640)	(19,321)	(18,941)	0	0	9,580
345.00	(983)	(3,939)	(5,015)	0	0	1,987
346.00	(201)	(3,680)	(472)	0	0	871
347.00	(1,029)	(7,472)	(777)	0	0	1,856
	(9,534)	(21,448)	(4,547)	0	0	7,106
TOTAL	(6,056,209)	(11,612,910)	(16,010,818)	(8,281,964)	(8,629,937)	10,118,367

PART II. DETAILED DEPRECIATION CALCULATIONS

PENNSYLVANIA-AMERICAN WATER COMPANY

2017 GENERAL BASE RATE CASE

R-2017-2595853

EXHIBITS NO. 11-D, 11-E, 11-F

DEPRECIATION STUDY

WASTEWATER OPERATIONS

(EXCLUDING SCRANTON WASTEWATER)

AS OF DECEMBER 31, 2016, 2017, 2018

PENNSYLVANIA-AMERICAN WATER COMPANY
HERSHEY, PENNSYLVANIA

WASTEWATER OPERATIONS
(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2016

Prepared by:



Excellence Delivered As Promised

Appendix A-5.1 (WAD)

Exhibit No. 11-D
Witness: J. J. Spanos

PENNSYLVANIA-AMERICAN WATER COMPANY

Hershey, Pennsylvania

WASTEWATER OPERATIONS

(Excluding Scranton Wastewater)

2016 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2016

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



Excellence Delivered As Promised

April 21, 2017

Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033

Attention Mr. John R. Cox
Manager of Rates and Regulations

Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to wastewater plant as of December 31, 2016. Summaries of the original cost, annual accruals and the book depreciation reserve are presented in Tables 1 through 3, beginning on page I-3 of the attached report.

A description of the methods and procedures upon which the study was based, as well as support for the service life estimates, is set forth in a companion report "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Wastewater Plant as of December 31, 2017".

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink that reads 'John J. Spanos'.

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

Gannett Fleming Valuation and Rate Consultants, LLC

P.O. Box 67100 • Harrisburg, PA 17106-7100 | 207 Senate Avenue • Camp Hill, PA 17011-2316

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER OPERATIONS (Excluding Scranton Wastewater)

DEPRECIATION STUDY

PART I. RESULTS OF STUDY

SUMMARY OF RESULTS

Table 1 presents the development of net original cost used in the study. The net original cost is the original cost of wastewater plant less advances and contributions. The results of the depreciation study are summarized in Table 2, which sets forth the book reserve and the calculated annual depreciation related to net original cost as of December 31, 2016, and the annual amortization of net negative salvage. Table 3 presents the calculation of the amortization of experienced net salvage, by account, based on the five-year period, 2012-2016.

DETAILED TABULATIONS OF DEPRECIATION CALCULATIONS

The supporting data for the depreciation calculations are presented in account sequence in the section beginning on page II-2. The original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual are shown for each vintage of each account or subaccount. The amounts of regular retirements, gross salvage, and cost of removal are set forth by account for the years 2012 through 2016, on pages III-2 through III-6.

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2016

DEPRECIABLE GROUP (1)	ORIGINAL COST AS OF DECEMBER 31, 2016 (2)	CUSTOMER ADVANCES (3)	CONTRIBUTIONS IN AID OF CONSTRUCTION (4)	EXCLUDED PROPERTY (5)	NET ORIGINAL COST AS OF DECEMBER 31, 2016 (6)
DEPRECIABLE PLANT					
354.20 STRUCTURES AND IMPROVEMENTS - COLLECTION	479,296.86				479,296.86
354.30 STRUCTURES AND IMPROVEMENTS - SPP	18,169,291.90		2,734,528.70		15,434,763.20
354.40 STRUCTURES AND IMPROVEMENTS - TDP	50,958,423.67		1,853,012.73		49,105,410.94
354.70 STRUCTURES AND IMPROVEMENTS - GENERAL	2,130,769.53				2,130,769.53
355.00 POWER GENERATING EQUIPMENT	4,881,040.73		144,517.16		4,736,523.57
360.10 COLLECTION SEWERS - FORCE MAINS	30,666,434.21	157,753.14	11,251,126.61		19,257,554.46
361.20 MANHOLES	73,305,655.63	143,423.53	9,166,636.12		63,995,595.98
363.00 SERVICES	13,045,669.35		4,387,312.76		8,658,356.59
364.00 FLOW MEASURING DEVICES	15,575,965.95	70,197.45	3,737,893.58		11,767,874.92
370.00 RECEIVING WELLS	533,521.59		14,726.81		518,794.78
371.00 PUMPING EQUIPMENT	20,918.30				20,918.30
380.00 TREATMENT EQUIPMENT	103,531.95		66,626.22		103,531.95
381.00 PLANT SEWERS	7,114,659.39		2,200,080.47		7,048,033.17
382.00 OUTFALL SEWER LINES	52,675,840.17		30,192.33		50,475,759.70
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	6,450,916.81				6,420,724.48
390.00 OFFICE FURNITURE AND EQUIPMENT	674,274.67				674,274.67
391.00 TRANSPORTATION EQUIPMENT	273,149.74				273,149.74
392.00 STORES EQUIPMENT	199,675.37				199,675.37
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	440,469.70				440,469.70
394.00 LABORATORY EQUIPMENT	64,249.97				64,249.97
395.00 POWER OPERATED EQUIPMENT	536,841.71				536,841.71
396.00 COMMUNICATION EQUIPMENT	342,757.97		10,000.00		342,757.97
397.00 MISCELLANEOUS EQUIPMENT	532,736.59				522,736.59
	1,522,349.38				1,522,349.38
	3,256,051.56		29,000.00		3,227,051.56
TOTAL DEPRECIABLE PLANT	283,954,492.70	371,374.12	35,625,653.49	0.00	247,957,465.09
NONDEPRECIABLE PLANT					
352.10 FRANCHISES	221,139.78				221,139.78
353.20 LAND AND LAND RIGHTS - COLLECTION	1,093,483.20				1,093,483.20
353.30 LAND AND LAND RIGHTS - SPP	85,560.07				85,560.07
353.40 LAND AND LAND RIGHTS - TDP	1,677,525.60		125,000.00		1,552,525.60
TOTAL NONDEPRECIABLE PLANT	3,077,708.65	0.00	125,000.00	0.00	2,952,708.65
TOTAL WASTEWATER PLANT IN SERVICE	287,032,201.35	371,374.12	35,750,653.49	0.00	250,910,173.74

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK RESERVE, AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2016

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	ORIGINAL COST AS OF DECEMBER 31, 2016 (3)	BOOK RESERVE (4)	FUTURE ACCRUALS (5)	CALCULATED ANNUAL ACCRUAL AMOUNT (6)	CALCULATED ANNUAL ACCRUAL RATE (7)=(6)/(3)	COMPOSITE REMAINING LIFE (8)
DEPRECIABLE PLANT							
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	479,296.86	49,350	429,947	11,001	2.30	39.1
354.30	STRUCTURES AND IMPROVEMENTS - SPP	15,434,763.20	4,146,488	11,288,276	249,925	1.62	45.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	49,105,410.94	9,948,199	39,157,212	691,430	1.41	56.6
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	2,130,769.53	1,306,466	824,304	24,748	1.16	33.3
355.00	POWER GENERATING EQUIPMENT	4,736,523.57	2,652,039	2,084,484	70,197	1.48	29.7
360.10	COLLECTION SEWERS - FORCE MAINS	19,257,554.46	1,759,918	19,081,636	359,040	1.86	53.1
361.10	COLLECTION SEWERS - GRAVITY MAINS	63,985,595.98	11,371,594	52,624,002	925,253	1.45	56.9
361.20	MANHOLES	8,658,356.59	1,103,203	7,555,154	183,051	2.11	41.3
363.00	SERVICES	11,767,874.92	3,048,755	8,719,120	380,797	3.24	22.9
364.00	FLOW MEASURING DEVICES	518,794.78	(3,852)	522,647	39,167	7.55	13.3
365.00	FLOW MEASURING INSTALLATIONS	20,918.30	4,022	16,896	733	3.50	23.1
370.00	RECEIVING WELLS	103,531.95	16,346	87,186	2,042	1.97	42.7
371.00	PUMPING EQUIPMENT	7,048,033.17	1,267,841	5,780,192	162,743	2.31	35.5
380.00	TREATMENT EQUIPMENT	50,475,759.70	10,681,481	39,794,279	1,072,308	2.12	37.1
381.00	PLANT SEWERS	6,420,724.48	831,789	5,588,936	129,614	2.02	43.1
382.00	OUTFALL SEWER LINES	674,274.67	157,760	516,515	13,676	2.03	37.8
388.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	273,149.74	72,881	200,268	14,747	5.40	13.6
390.00	OFFICE FURNITURE AND EQUIPMENT	199,675.37	53,384	146,291	11,861	5.94	12.3
391.00	TRANSPORTATION EQUIPMENT	440,469.70	245,469	195,000	20,435	4.64	9.5
392.00	STORES EQUIPMENT	64,249.97	18,187	46,063	2,310	3.60	19.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	536,841.71	241,652	295,190	18,017	3.36	16.4
394.00	LABORATORY EQUIPMENT	342,757.97	193,677	149,081	13,157	3.84	11.3
395.00	POWER OPERATED EQUIPMENT	522,736.59	242,424	280,312	32,263	6.17	8.7
396.00	COMMUNICATION EQUIPMENT	1,522,349.38	854,060	668,289	65,055	4.27	10.3
397.00	MISCELLANEOUS EQUIPMENT	3,227,051.56	467,686	2,759,366	288,902	8.95	9.6
	TOTAL DEPRECIABLE PLANT	247,957,485.09	49,146,818	198,810,646	4,782,472	1.93	
	AMORTIZATION OF NET SALVAGE				65,222		
NONDEPRECIABLE PLANT							
352.10	FRANCHISES	221,139.78					
353.20	LAND AND LAND RIGHTS - COLLECTION	1,093,483.20					
353.30	LAND AND LAND RIGHTS - SPP	85,560.07					
353.40	LAND AND LAND RIGHTS - TDP	1,552,525.60					
	TOTAL NONDEPRECIABLE PLANT	2,952,708.65					
	TOTAL WASTEWATER PLANT IN SERVICE	250,910,173.74	49,146,818	198,810,646	4,847,694		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER OPERATIONS (EXCLUDING SCRANTON WASTEWATER)

TABLE 3. AMORTIZATION OF EXPERIENCED NET SALVAGE

Account (1)	EXPERIENCED NET SALVAGE					5 - YEAR AMORT. (7)
	2012 (2)	2013 (3)	2014 (4)	2015 (5)	2016 (5)	
354.20	0	0	(17,282)	(1,398)	(42)	3,744
354.30	(3,707)	(1,424)	(0)	(4,141)	0	1,854
354.40	(159,227)	(27,581)	(10,305)	(1,027)	(4,581)	40,544
354.70	0	0	0	(480)	0	96
355.00	(3,170)	(963)	(510)	(1,666)	(4,934)	2,248
360.10	(461)	(8,182)	(1,577)	(3,256)	(12,703)	5,236
361.10	(14,158)	(34,624)	(16,027)	(65,334)	(6,970)	27,423
361.20	0	0	0	(7,497)	(53,000)	12,099
363.00	(2,580)	(15,735)	(26,515)	(27,377)	(11,694)	16,780
364.00	0	0	(816)	0	0	163
371.00	(2,645)	(2,291)	(4,325)	(4,902)	(11,515)	5,136
380.00	(120,523)	(6,028)	(21,655)	(1,623)	(23,917)	34,749
381.00	0	0	0	0	(2,110)	422
382.00	(1)	0	0	0	0	0
390.00	0	0	0	0	(276)	55
393.00	0	(240)	(240)	0	171,552	(34,214)
394.00	0	(6)	0	0	(566)	115
395.00	0	0	0	0	44,960	(8,992)
396.00	(1,192)	(2,027)	0	(4,190)	131,476	(24,813)
397.00	0	0	0	0	87,116	(17,423)
TOTAL	(307,663)	(99,101)	(99,252)	(122,889)	302,795	65,222

PART II. DETAILED DEPRECIATION CALCULATIONS

Appendix A-5.1 (WAD)

S:\water industry\Lower Makefield Township Sewer Authority\Lower Makefield Report & Testimony\Lower Makefield Wastewater Collection System Valuation as of 6-30-2020 - Created 3-11-2021

AQUA PENNSYLVANIA, INC.
WASTEWATER ASSETS

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF MARCH 31, 2019

DEPRECIABLE GROUP	SURVIVOR CURVE	ORIGINAL COST AS OF MARCH 31, 2019	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	COMPOSITE REMAINING LIFE	ANNUAL ACCRUAL RATE, PERCENT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CONTRIBUTIONS IN AID OF CONSTRUCTION							
DEPRECIABLE PLANT							
354.00 STRUCTURES AND IMPROVEMENTS							
COLLECTION	55-S0.5	1,277,000.00	434,189	842,811	24,094	35.0	1.89
PUMPING	60-S1	1,084,876.22	143,926	940,950	21,563	43.6	1.99
TREATMENT AND DISPOSAL	50-R2	6,537,155.71	1,999,766	4,537,390	159,938	28.4	2.45
GENERAL	50-R3	14,636.81	8,877	5,760	343	16.8	2.34
TOTAL ACCOUNT 354		8,913,668.74	2,586,758	6,326,911	205,938		
360.00 COLLECTION MAINS-FORCE							
361.00 COLLECTION MAINS - GRAVITY	75-R2.5	4,083,815.05	835,606	3,248,209	64,804	50.1	1.59
363.00 SERVICES	70-R4	1,488,413.86	535,477	952,937	17,902	53.2	1.20
371.30 PUMPING EQUIPMENT - PUMPING	25-L0.5	464,547.60	67,831	396,717	29,081	13.6	6.26
380.00 TREATMENT AND DISPOSAL EQUIPMENT	40-S0	1,553,793.25	799,221	754,572	35,520	21.2	2.29
381.40 PLANT SEWERS - TREATMENT AND DISPOSAL	40-R1.5	1,536.55	1,252	285	30	9.5	1.95
382.00 OUTFALL LINES	40-R2.5	1,536.55	1,265	272	41	6.6	2.67
389.20 OTHER PLANT AND MISCELLANEOUS EQUIPMENT - COLLECTION	20-L3	13,030.75	5,603	7,428	707	10.5	5.43
390.10 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	20-SQ	274.98	260	15	0	-	-
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	4,449.14	4,504	(55)	0		
394.00 LABORATORY EQUIPMENT	25-SQ	1,362.82	1,383	(20)	0		
TOTAL DEPRECIABLE PLANT		26,398,889.01	6,290,278	20,108,613	514,614		
TOTAL CONTRIBUTIONS IN AID OF CONSTRUCTION		26,398,889.01	6,290,278	20,108,613	514,614		
AMORTIZATION OF NET SALVAGE					43,079		
TOTAL WASTEWATER PLANT		156,015,551.44	34,942,942	118,205,423	4,422,241		

Water and Wastewater Industry

**Cost of Capital / Required Return
Water and Wastewater Industry
As of January 1, 2023**

**AUS Consultants
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8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
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Appendix A-5.1 (WAD)

Cost of Capital / Required Return

The net cashflows described in the income approach section of this report were discounted to present value using a cost of capital reflective of the investor-owned water industry with particular emphasis on investor-owned water and wastewater in the Commonwealth of Pennsylvania capital costs for both debt and equity summarized as follows:

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)	(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
		Portion of Capital	Type of Data	Capital Cost	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost
		<small>AUS Input</small>		<small>AUS Input</small>				<small>(2)*(3)*(4a)</small>
Debt		30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity		70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r		100.0%						7.97%
Growth (g)								2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$								4.88%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Capitlization Rate)	(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
		Portion of Capital	Type of Data	Capital Cost	Type of Data	Tax Rate	Tax affect on cost of capital	Market Capital Cost
		<small>AUS Input</small>		<small>AUS Input</small>				<small>(2)*(3)</small>
Debt		30%	Market	5.34%	Market	Not Applicable	Not Applicable	1.60%
Equity		70%	Market	9.75%	Market	Not Applicable	Not Applicable	6.83%
Total Capital r		100.0%						8.43%
Growth (g)								2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$								5.33%

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)	(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
		Portion of Capital	Type of Data	Capital Cost	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base
		<small>AUS Input</small>		<small>AUS Input</small>				<small>(2)*(3)</small>
Debt		50%	Embedded	3.76%	Embedded	Not Applicable	Not Applicable	1.88%
Equity		50%	Embedded	9.75%	Market	Not Applicable	Not Applicable	4.88%
Total Capital r		100.0%						6.76%
Growth (g)							Not Applicable	0.00%
Rate without Growth: $[(1+r)/(1+g)]-1$								6.76%

The cost of capital and required return was based on the weighted cost of capital (WACC) method; wherein the market capital cost of debt and equity at the third quarter (January 6, 2023) closest to

Appendix A-5.1 (WAD)

the appraisal date are weighted based on the market capital structure typical of the industry. The inputs to the WACC required return determination are described summarized below.

Debt Cost – The market cost of debt at the study data was determined based on review of financial information published by Value Line Investment Surveys in their Selected Yield weekly publication. These sources were helpful in determining the typical debt rating for investments in water industry to be A Standard and Poor’s corporate debt rating. The above sources were also useful in determining that the market cost of debt at A rating to be 5.29% on January 6, 2023. Issuance cost of 0.90% was determined based on analysis annual Public Utility Financing Tracker reports over the period 2008 through 2019 published by PUFT, Inc. The final market cost of debt of 5.34% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

Appendix A-5.1 (WAD)

$$K_d = 5.29\% / (100\% - 0.90\%)$$

$$K_d = 5.34\%$$

Equity Cost – The cost of equity was evaluated using the Capital Asset Pricing Model (CAPM) and the dividend growth model (DGM) which looks to market returns to quantify the cost equity capital.

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Company	Exchange	Ticker	ValueLine No.	ValueLine Issue	Beta	Dividend		Revenue		Cash Flows		Earnings		Dividends		Book Value					
						Past 10 yrs	Past 5 yrs	Past 10 yrs	Past 5 yrs	Past 10 yrs	Past 5 yrs	Past 10 yrs	Past 5 yrs	Past 10 yrs	Past 5 yrs						
American States Water	NYSE	AWR	1779	1/06/2023	0.66	1.8%	2.5%	1.5%	5.5%	5.5%	4.5%	5.5%	9.0%	8.5%	5.5%	9.5%	8.0%	9.0%	5.5%	8.0%	5.5%
American Water	NYSE	AWK	1780	1/06/2023	0.9	1.8%	3.5%	3.5%	4.5%	9.0%	10.0%	3.5%	12.0%	13.5%	1.0%	9.5%	10.0%	8.5%	4.5%	5.0%	8.0%
California Water	NYSE	CWT	1781	1/06/2023	0.7	1.6%	1.0%	4.0%	3.5%	6.5%	9.0%	2.0%	6.5%	11.0%	6.5%	3.5%	5.0%	6.5%	8.0%	7.0%	6.5%
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023	0.95	2.5%	1.5%	5.0%	7.5%	5.0%	3.0%	10.0%	6.0%	1.0%	10.0%	7.5%	7.0%	8.0%	11.0%	14.0%	8.0%
Middlesex Water	NOQ	MSEX	1783	1/06/2023	0.7	1.5%	2.0%	0.5%	5.0%	8.0%	9.5%	4.5%	9.5%	11.0%	6.0%	3.5%	6.0%	6.0%	6.0%	9.0%	2.5%
SIW Corporation	NYSE	SIW	1784	1/06/2023	0.8	1.8%	4.0%	2.5%	3.5%	6.0%	0.5%	1.5%	6.0%	12.0%	6.5%	10.5%	5.5%	9.0%	11.5%	4.0%	
Minimum					0.65	1.50%	2.00%	0.50%	3.50%	5.00%	0.50%	1.50%	6.00%	-6.50%	3.00%	3.50%	5.00%	5.50%	4.50%	5.00%	2.50%
Mean					0.78	1.83%	3.08%	2.83%	4.92%	6.67%	6.08%	4.50%	8.17%	6.42%	7.17%	6.67%	7.75%	7.25%	7.00%	8.75%	5.42%
Median					0.75	1.80%	3.25%	3.00%	4.75%	6.25%	6.75%	4.00%	7.75%	9.75%	6.25%	7.00%	7.50%	7.25%	6.00%	8.00%	5.75%
Maximum					0.95	2.50%	4.00%	5.00%	7.50%	9.00%	10.00%	10.00%	12.00%	13.50%	12.00%	9.50%	10.50%	9.00%	11.00%	14.00%	8.00%

Value Line Investment Surveys

Capital Assets Pricing Model (CAPM) - The CAPM method estimates the cost of equity capital by quantifying the premium, or additional return required to entice investors to purchase equities, over an investment in which the investors would receive riskless return like that from a long-term U.S. government security.

The mathematical form of this model is:

Capital Asset Pricing Model:

$$r_e = r_f + B_c(r_p) + r_s + r_i$$

where:

B_c is an estimation of the subject Company's risk premium relative to the risk premium of the entire market. In these equity cost estimating methods the risk premium of the entire market is defined as unity or $B_m = 1.0$.

Appendix A-5.1 (WAD)

The inputs to this model are developed from an analysis of the financial markets. The risk-free government securities rate (r_f) is readily available from financial sources; we have used the risk-free rate at the study date of 5.11% as determined from the average long-term income returns of government bonds over the period 1926 through 2021 as detailed on table A-7 in Ibbotson Associates' 2022 Yearbooks of Stocks, Bonds, Bills, and Inflation (SBBI).

The risk premiums (r_p) and size premiums (r_s) were established based on analysis of the data presented by Ibbotson Associates and published in Ibbotson Associates' 2010 through 2021 Yearbooks of Stocks, Bonds, Bills, and Inflation (SBBI), detailing the financial market returns of stocks, bonds, U.S. Treasury Bills, and Inflation for the period 1926 through 2021.

The total market risk premium (r_p) required to entice an investor to invest in equity securities over risk-free government securities was established at 6.87% based on the Ibbotson Associates research, while the size premiums (r_s) were established at:

1.82% for mid-capitalization companies with market equity capitalization between \$3,276.6 and \$16,738.4 million.

3.28% for low-capitalization companies with market equity capitalization between \$627.8 and \$3,276.6 million.

5.57% for micro-capitalization companies with market equity capitalization under \$627.8 million.

There is no size premium (0.0%) for companies with market equity capitalization above \$16,738.4 million.

Dividend Yield and Growth Model (DGM)

The dividend yield and growth model was also review in estimating the cost of equity. Two models were considered, those of:

$$r_e = \text{Dividend Yield} + \text{Dividend Growth}$$

Appendix A-5.1 (WAD)

$r_e = \text{Dividend Yield} + \text{Earnings Growth}$

Cost of Equity Conclusion - Based on these procedures the cost of equity using previous described cost of equity estimating techniques the cost of equity was determined as follows:

As of First Quarter 2021 (1-1-2021)

Cost of Equity Dividend Growth Model

Cost of Equity Capital Asset Pricing Model (CAPM)

Dividend 1.83% mean Col 7

Growth	Past 10	Est'd 16-	
	yrs	Past 5 yrs	18 to 22- 24 Beta
Revenues	3.08%	2.83%	4.92%
Cash Flow	6.25%	6.08%	4.50%
Earnings	8.17%	6.42%	7.17%
Dividends	7.00%	7.75%	7.25%
Book Value	6.00%	8.75%	5.42%
Mean	6.10%	6.37%	5.85%

Input Min-Max
0.78 0.65-0.95

Growth 5.85% AUS Input

Cost of Equity Dividend Growth Model

Cost of Equity Capital Asset Pricing Model (CAPM)

Dividend 1.83%
Growth 5.85%
Cost of Equity 7.68%

Risk Free Rate 5.11% Input
Risk Premium
Beta 0.78

Long term
Government Bonds
Income Return SBB
(Mean)

Risk Premia	6.87%	Input SBB	6.87%	Input	$r_e = r_f + \beta(r_m - r_f)$ per PA PUC
Size Premia			\$ Millions		\$ Millions
Micro	5.57%	Input SBB	-		627.8
Small	3.28%	Input SBB	627.8		3,276.6
Mid	1.82%	Input SBB	3,276.6		16,738.4
Large	0.00%	Input SBB	16,738.4		
Size Premia				0.00% Input	
Cost of Equity				10.49%	

Cost of Equity
Dividend Growth Model 7.68%
Capital Asset Pricing Model (CAPM) 10.49%
Mean 9.09%
Issuance Cost PUFT 2008-2019 3.60%
Final Cost of Equity 9.43%

Pennsylvania PUC 9.75%
Bureau of Technical Utility Services
Report on the Quarterly Earnings
of Jurisdictional Utilities
30-Oct-22

Cost of Equity 9.75% AUS Input Jurisdictional Exception
Growth 5.85% Input from Growth Above
Inflation 2.94% SBB Last 5-years

Equity issuance cost (f) of 3.60% was determined based on analysis annual Public Utility Financing Tracker reports over the period 2008 through 2019 published by PUFT, Inc. The final market cost of equity of 9.43% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

Appendix A-5.1 (WAD)

$$K_e = K_e' / (100\% - f)$$

where:

K_e = Cost of equity recognizing issuance costs

K_e' is the market cost of equity without consideration of issuance costs (9.85%)

f is the cost of issuance as a percentage of the equity par value (3.60%)

$$K_e = 9.09\% / (100\% - 3.60\%)$$

$$K_e = 9.43\%$$

An equity cost of 9.75% was used in the determination of the cost of capital based on the determination of Pennsylvania PUC's Bureau of Technical Utility Services (TUS) Report on Quarterly Earnings of Jurisdictional Utilities for year-ending September 30, 2022.

Tax Rate

The tax rate was determined at 28.89% (State and Federal) based on the Value Line Investment Survey as follows:

Appendix A-5.1 (WAD)

1	2	3	4	5				
Value Line Investment Surveys Water Industry As of First Quarter 2021 (1-1-2021)								
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Tax Rate			
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	2019 Input Value Line	2020 Input Value Line	2021 Input Value Line	Future 3 Years Input Value Line
American States Water	NYSE	AWR	1779	1/06/2023	24.4%	24.0%	24.0%	24.0%
American Water	NYSE	AWK	1780	1/06/2023	23.0%	20.0%	22.0%	24.0%
California Water	NYSE	CWT	1781	1/06/2023	20.1%	21.0%	21.0%	21.0%
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023	0.0%	1.0%	8.0%	15.0%
Middlesex Water	NDQ	MSEX	1783	1/06/2023	2.8%	21.0%	21.0%	21.0%
SJW Corporation	NYSE	SJW	1784	1/06/2023	12.2%	21.5%	21.0%	21.0%
Minimum					0.00%	1.00%	8.00%	15.00%
wtd Mean								
Mean					13.75%	18.08%	19.50%	21.00%
Median					16.15%	21.00%	21.00%	21.00%
Maximum					24.40%	24.00%	24.00%	24.00%
Embedded Tax Rate	Historical		Current					
	13.75% Mean 2019		18.08% Mean 2020					
Federal Tax Rate (Marginal)	35.00% AUS Input		21.00% AUS Input					
US 50-state average	4.91% AUS Input		4.91% AUS Input					
Pennsylvania	9.99% AUS Input		9.99% AUS Input					
Composite Federal and State Tax Rate	41.49% Calculated =Federal Tax * (1- State Tax)+State Tax		28.89% Calculated =Federal Tax * (1- State Tax)+State Tax					

Capital Structure

Appendix A-5.1 (WAD)

The capital structure was determined based on the water industry market indicators published by Value Line Investment Survey published January 6, 2023, as detailed as follows:

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Company	Exchange	Ticker	Valuation No.	Valuation Issue	Total Debt	Market Debt	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)	Proportion of Debt	Book Debt	Book Equity	Preferred Stock	% Preferred	Shares Outstanding	Price per Share	Market Equity	Market Capitalization	Total Market Capital	
(\$Million)	(\$Million)	(\$Million)	(\$Million)	(\$Million)	(\$Million)	(\$Million)	(\$Million)	(%)	(%)	(%)	(\$Million)	(\$Million)	(\$Million)	(%)	(Million)	(\$/Share)	(\$Million)	(\$Million)	(\$Million)	
American States Water	NVSE	AWR	1779	1/06/2023	685.7	16,74%	446.8	24.0	5.37%	40.0%	40.0%	60.0%	0	0.00%	36,390,970	93.7	3,410.6	83.26%	Mid Cap	4,096.3
American Water	NVSE	AWK	1780	1/06/2023	11,839.0	29.85%	10,940.0	414.0	3.78%	58.0%	59.0%	41.0%	2	0.01%	181,827,8240	153.0	27,823.3	70.15%	Large Cap	39,665.3
California Water	NVSE	CWT	1781	1/06/2023	1,129.7	25.01%	1,051.9	40.0	3.80%	47.0%	42.5%	57.5%	0	0.00%	54,824,0000	61.8	3,387.0	74.99%	Mid Cap	4,516.7
Essential Utilities, Inc.	NVSE	WTRQ	1782	1/06/2023	6,536.8	34.38%	6,173.8	230.0	3.73%	54.0%	53.5%	46.5%	0	0.00%	282,908,570	47.6	12,877.2	65.82%	Large Cap	19,014.0
Middlesex Water	NDQ	MSEX	1783	1/06/2023	308.8	16.88%	301.2	7.5	2.49%	45.0%	43.0%	57.0%	2.4	0.13%	17,630,0000	86.1	1,517.8	82.99%	Small Cap	1,829.0
SiW Corporation	NVSE	SW	1784	1/06/2023	1,458.0	37.25%	1,453.7	50.0	3.44%	59.0%	59.1%	40.9%	0	0.00%	30,315,0000	81.0	2,456.1	62.75%	Mid Cap	3,914.1
Total					21,958.0	30.06%	20,369.4	765.5	3.76%				5.4	0.01%			51,072.0		69.93%	73,035.4
Minimum						16.74%			2.49%	40.00%	40.00%	40.00%		0.00%					62.75%	
Mid Mean						30.06%			3.76%					0.01%					69.93%	
Mean						26.69%			3.77%	50.50%	49.52%	50.48%		0.02%					73.29%	
Median						27.43%			3.76%	50.50%	48.25%	51.75%		0.00%					72.57%	
Maximum						37.25%			5.37%	59.00%	59.10%	60.00%		0.13%					83.26%	

Water Industry Capital Structure Market Embedded

In arriving at the capital structure, the market capital structure was used in developing the market cost of capital while an embedded capital structure was used in developing the required return on rate base as follows:

Appendix A-5.1 (WAD)

Capital Structure	Proportion	Reference	Proportion	Reference
Debt	30.06%	wtd mean col 7	50.50%	mean col 11
Preferred	0.01%	wtd mean col 15	0.02%	mean col 15
Equity	69.93%	wtd mean col 19	50.48%	mean col 13
Total	100.00%		101.01%	
Use				
Debt	30%	AUS Input	50%	AUS Input Jurisdictional Execution
Equity	70%	AUS Input	50%	AUS Input Jurisdictional Execution
Total	100%		100%	

Market Cost of Capital and Required Return on Rate Base

Using the above-described cost of debt and equity, the rate of returned required for an investment in property similar to the Company's was determined to be 7.97% as follows:

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Discount Rate)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
Weighted Cost of Capital (Discount Rate)	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	After-tax Market Capital Cost (2)*(3)*(4a)
Debt	30%	Market	5.34%	Market	28.89%	71.11%	1.14%
Equity	70%	Market	9.75%	Market	0.0%	100.0%	6.83%
Total Capital r	100.0%						7.97%
Growth (g)							2.94%
Rate without Growth: $[(1+r)/(1+g)]-1$							4.88%

While the require return on rate base was determined to be 6.76% follows:

Appendix A-5.1 (WAD)

Water and Wastewater Cost of Capital First Quarter 2023 (01-01-2023)

As an Investor-Owned Utility

Weighted Cost of Capital (Rate of Return on Rate Base)

(1)	(2)	(2a)	(3)	(3a)	(4)	(4a)	(5)
	Portion of Capital AUS Input	Type of Data	Capital Cost AUS Input	Type of Data	Tax Rate	Tax affect on cost of capital	Required Return on Rate Base (2)*(3)
Debt	50%	Embedded	3.76%	Embedded	Not Applicable	Not Applicable	1.88%
Equity	50%	Embedded	9.75%	Market	Not Applicable	Not Applicable	4.88%
Total Capital r	100.0%						6.76%
Growth (g)						Not Applicable	0.00%
Rate without Growth: $[(1+r)/(1+g)]-1$							6.76%

The statistics supporting these findings can be found in the Cost of Capital section of this report.

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
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Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Company	Exchange	Ticker	Valueline No.	Valueline Issue	Market Debt			Long Term Debt			Long Term Interest			Proportion of Debt			Book Equity	Preferred Stock	% Preferred	Shares Outstanding	Price per Share	Market Equity	Portion Market Equity	Capitalization	Total Market Capital
					Total Debt	Debt	%	Long Term Debt	Debt	%	Long Term Interest	Interest Rate (embedded)	%	Book Debt	Debt	%									
American States Water	NYSE	AWR	1779	1/06/2023	685.7	16.74%	5.37%	446.8	24.0	40.0%	40.0%	60.0%	0	0.00%	36.3908970	93.7	3,410.6	83.26%	Mid Cap	4,096.3					
American Water	NYSE	AWK	1780	1/06/2023	11,839.0	29.85%	3.78%	10,940.0	414.0	58.0%	59.0%	41.0%	3	0.01%	181.8278240	153.0	27,823.3	70.15%	Large Cap	39,665.3					
California Water	NYSE	CWT	1781	1/06/2023	1,129.7	25.01%	3.80%	1,053.9	40.0	47.0%	42.5%	57.5%	0	0.00%	54.8240000	61.8	3,387.0	74.99%	Mid Cap	4,516.7					
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023	6,536.8	34.38%	3.73%	6,173.8	230.0	54.0%	53.5%	46.5%	0	0.00%	262.2908570	47.6	12,477.2	65.62%	Large Cap	19,014.0					
Middlesex Water	NDQ	MSEX	1783	1/06/2023	308.8	16.88%	2.49%	301.2	7.5	45.0%	43.0%	57.0%	2.4	0.13%	17.6390000	86.1	1,517.8	82.99%	Small Cap	1,829.0					
SIW Corporation	NYSE	SIW	1784	1/06/2023	1,458.0	37.25%	3.44%	1,453.7	50.0	59.0%	59.1%	40.9%	0	0.00%	30.3150000	81.0	2,456.1	62.75%	Mid Cap	3,914.1					
Total					21,958.0	30.06%	3.76%	20,369.4	765.5	40.00%	40.00%	40.90%	5.4	0.01%	51,072.0		51,072.0	69.93%		73,035.4					
Minimum					16.74%		2.49%			40.00%	40.00%	40.90%		0.00%				62.75%							
wtd Mean					30.06%		3.76%			50.50%	49.52%	50.48%		0.01%				69.93%							
Mean					27.43%		3.77%			50.50%	48.25%	51.75%		0.02%				73.29%							
Median					37.25%		5.37%			59.00%	59.10%	60.00%		0.00%				72.57%							
Maximum														0.13%				83.26%							

Capital Structure	Water Industry Capital Structure		Market Reference		Embedded Reference	
	Proportion	Structure	Proportion	Reference	Proportion	Reference
Debt	30.06%	wtd mean col 7	50.50%	mean col 11		
Preferred	0.01%	wtd mean col 15	0.02%	mean col 15		
Equity	69.93%	wtd mean col 19	50.48%	mean col 13		
Total	100.00%		101.01%			
Use Debt Equity Total	30% AUS Input 100%		50% AUS Input 100%			
	70% AUS Input		50% AUS Input			
			Jurisdictional Exception			

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

1
Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Company	Exchange	Ticker	Valueline No.	Valueline Issue	Beta	Revenues			Cash Flows			Earnings			Dividends			Book Value		
						Past 10 Yrs	Past 5 Yrs	Input Value	Past 10 Yrs	Past 5 Yrs	Input Value	Past 10 Yrs	Past 5 Yrs	Input Value	Past 10 Yrs	Past 5 Yrs	Input Value	Past 10 Yrs	Past 5 Yrs	Input Value
American States Water	NYSE	AWR	1779	1/06/2023	0.65	1.8%	2.5%	1.5%	5.5%	4.5%	9.0%	8.5%	5.5%	9.5%	8.0%	9.0%	5.5%	6.0%	5.5%	
American Water	NYSE	AWK	1780	1/06/2023	0.9	1.8%	3.5%	3.5%	4.5%	10.0%	12.0%	13.5%	3.0%	9.5%	10.0%	8.5%	4.5%	5.0%	8.0%	
California Water	NYSE	CWT	1781	1/06/2023	0.7	1.6%	3.0%	4.0%	3.5%	9.0%	6.5%	11.0%	6.5%	3.5%	5.0%	6.5%	7.0%	6.0%	6.5%	
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023	0.95	2.5%	3.5%	5.0%	7.5%	3.0%	6.0%	1.0%	10.0%	7.5%	7.0%	8.0%	11.0%	14.0%	6.0%	
Middlesex Water	NDQ	MSEX	1783	1/06/2023	0.7	1.5%	2.0%	0.5%	5.0%	9.5%	9.5%	11.0%	6.0%	3.5%	6.0%	6.0%	6.0%	9.0%	2.5%	
SIW Corporation	NYSE	SIW	1784	1/06/2023	0.8	1.8%	4.0%	2.5%	3.5%	0.5%	6.0%	-6.5%	12.0%	6.5%	10.5%	5.5%	9.0%	11.5%	4.0%	
Minimum					0.65	1.50%	2.00%	0.50%	3.50%	5.00%	6.00%	-6.50%	3.00%	3.50%	5.00%	5.50%	4.50%	5.00%	2.50%	
wtd Mean					0.78	1.83%	3.08%	2.83%	4.92%	6.08%	8.17%	6.42%	7.17%	6.67%	7.75%	7.25%	7.00%	8.75%	5.42%	
Mean					0.75	1.80%	3.25%	3.00%	4.75%	6.25%	7.75%	9.75%	6.25%	7.00%	7.50%	7.25%	6.00%	8.00%	5.75%	
Median					0.95	2.50%	4.00%	5.00%	7.50%	9.00%	12.00%	13.50%	12.00%	9.50%	10.50%	9.00%	11.00%	14.00%	8.00%	
Maximum																				

Value Line Analysis

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**Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)**

Cost of Equity Dividend Growth Model

Dividend **1.83%** mean Col 7

	Past 10 Yrs	Past 5 yrs	24	Beta
Growth			Est'd 16-18 to 22-	

Revenues	3.08%	2.83%	4.92%
Cash Flow	6.25%	6.08%	4.50%
Earnings	8.17%	6.42%	7.17%
Dividends	7.00%	7.75%	7.25%
Book Value	6.00%	8.75%	5.42%
Mean	6.10%	6.37%	5.85%
Growth	5.85% AUS Input		

Cost of Equity Capital Asset Pricing Model (CAPM)

Cost of Equity Dividend Growth Model

Dividend Growth	1.83%
Risk Premium	5.85%
Cost of Equity	7.68%

Cost of Equity Capital Asset Pricing Model (CAPM)

Risk Free Rate	Risk Premium	Beta	Risk Premia	Size Premia	Micro	Small	Mid	Large	Size Premia	Cost of Equity
5.11%	0.78	0.78	6.87%	5.57%	3.28%	1.82%	0.00%	0.00%	0.00%	10.49%
Input	Input	Input	Input SBB	Input SBB	Input SBB	Input SBB	Input SBB	Input SBB	Input	Input
				\$ Millions	\$ Millions	\$ Millions	\$ Millions	\$ Millions		
				627.8	627.8	3,276.6	3,276.6	16,738.4	16,738.4	

Cost of Equity
Dividend Growth Model
Capital Asset Pricing Model (CAPM)
Mean
Issuance Cost PUFT 2008-2019
Final Cost of Equity

7.68%
10.49%
9.09%
3.60%
9.43%

Cost of Equity
Growth
Inflation

9.75% AUS Input Jurisdictional Exception
5.85% Input from Growth Above
2.94% SBB Last 5-years

Value Line Analysis

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

**Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)**

Company	Exchange	Ticker	Valueline No.	Valueline Issue	Tax Rate	2019			2020			Future 3 Years		
						Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line
American States Water	NYSE	AWR	1779	1/06/2023		24.4%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%
American Water	NYSE	AWK	1780	1/06/2023		23.0%	20.0%	20.0%	22.0%	22.0%	24.0%	24.0%	24.0%	24.0%
California Water	NYSE	CWT	1781	1/06/2023		20.1%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023		0.0%	1.0%	1.0%	8.0%	8.0%	15.0%	15.0%	15.0%	15.0%
Middlesex Water	NDQ	MSEX	1783	1/06/2023		2.8%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%
SIW Corporation	NYSE	SIW	1784	1/06/2023		12.2%	21.5%	21.5%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%
Minimum						0.00%	1.00%	1.00%	8.00%	8.00%	15.00%	15.00%	15.00%	15.00%
wtd Mean						13.75%	18.08%	18.08%	19.50%	19.50%	21.00%	21.00%	21.00%	21.00%
Mean						16.15%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
Median						24.40%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%	24.00%
Maximum														
Embedded Tax Rate						Historical	13.75%	Mean 2019	18.08%	Mean 2020				
Federal Tax Rate (Marginal)							35.00%	AUS Input	21.00%	AUS Input				
US 50-state average							4.91%	AUS Input	4.91%	AUS Input				
Pennsylvania							9.99%	AUS Input	9.99%	AUS Input				
Composite Federal and State Tax Rate							41.49%	Calculated =Federal Tax * (1- State Tax)+State Tax	28.89%	Calculated =Federal Tax * (1- State Tax)+State Tax				

Value Line Analysis

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

1 2 3 4 5

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

S&P Debt Rating Long Term Debt Interest Long Term Interest Rate (embedded)

Input Value Line Input Value Line (4) / (3)

American States Water		446.8	24.0	5.37%
American Water	Baa1	10,940.0	414.0	3.78%
California Water		1,053.9	40.0	3.80%
Essential Utilities, Inc.	Baa2	6,173.8	230.0	3.73%
Middlesex Water		301.2	7.5	2.49%
SIW Corporation		1,453.7	50.0	3.44%
		20,369.4	765.5	3.76%
Minimum				2.49%
wtd Mean				3.76%
Mean				3.77%
Median				3.76%
Maximum				5.37%

Debt Rating and Cost of Debt

Embedded 3.76% wtd mean col 5

Rating (S&P) A Input

Market Cost of Debt @Bond Rating Value Line Selected Yields 5.29% Input

Use 5.29% AUS Input

Issuance Cost PUFT Data 2018-2019 Final Cost of Debt 0.90% Input 5.34%

Value Line Analysis

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

1 2 3 4 5 6 7 8 9 10

Value Line Investment Surveys
Water Industry
As of First Quarter 2021 (1-1-2021)

Company	Exchange	Ticker	Valueline No.	Valueline Issue	1 year Input Value Line	3 Years Input Value Line	3 years annualized Calculation	5 Years Input Value Line	5 years annualized Calculation
	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	$=((1+3 \text{ year Total Return})^{(1/3)})-1$	Input Value Line	$=((1+5 \text{ year Total Return})^{(1/5)})-1$
American States Water	NYSE	AWR	1779	1/06/2023	5.9%	20.4%	6.4%	84.0%	13.0%
American Water	NYSE	AWK	1780	1/06/2023	-8.4%	30.9%	9.4%	79.9%	12.5%
California Water	NYSE	CWT	1781	1/06/2023	4.9%	32.3%	9.8%	54.2%	9.0%
Essential Utilities, Inc.	NYSE	WTRG	1782	1/06/2023	4.5%	16.1%	5.1%	41.7%	7.2%
Middlesex Water	NDQ	MSEX	1783	1/06/2023	-8.1%	54.4%	15.6%	118.3%	16.9%
SJW Corporation	NYSE	SJW	1784	1/06/2023	13.4%	11.7%	3.8%	20.5%	3.8%
Total					2.0%		8.3%		10.4%
Minimum					-8.40%		3.76%		3.80%
wtd Mean					2.03%		8.33%		10.40%
Mean					4.70%		7.89%		10.75%
Median					13.40%		15.58%		16.90%
Maximum									

Value Line Analysis

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Dates of Information			U.S. Treasury Securities				Corporate Bonds and Preferred Stock						Municipal Bonds			Revenue Bonds (Revs) (15 years)		
Cost of Capital Date	Value Line Selected Yield Date	Repercent Data	3-Month	1-year	10-year	30-year	Financial (10-year) A	Industrial (25/30 year) A	Utility (25/30 year) A	Utility (25/30 year) Baa/BBB	S & P 500 High Yield Corp. Bond Index	Preferred Stock Utility A	Preferred Stock Financial BBB	General Obligation Bonds (G)			25/30-year A	Water / Sewer
01/01/2020	01/03/2020	12/24/2019	1.57%	1.52%	1.90%	2.33%	2.71%	3.35%	3.43%	3.80%	3.95%	5.99%	5.99%	1.14%	1.29%	1.81%	2.48%	1.93%
04/01/2020	04/03/2020	03/23/2020	0.02%	0.17%	0.76%	1.33%	3.69%	4.24%	4.12%	4.72%	8.50%	6.88%	6.37%	2.90%	2.97%	3.15%	3.64%	3.31%
07/01/2020	07/03/2020	06/22/2020	0.16%	0.17%	0.71%	1.45%	1.99%	2.82%	2.99%	3.32%	4.64%	6.15%	5.48%	0.75%	1.04%	1.45%	2.25%	1.43%
10/01/2020	10/02/2020	09/21/2020	0.10%	0.12%	0.68%	1.43%	1.76%	2.67%	2.79%	3.06%	4.24%	6.23%	5.46%	0.44%	0.69%	1.27%	2.02%	1.34%
01/01/2021	01/01/2021	12/21/2020	0.09%	0.09%	0.95%	1.68%	1.75%	2.60%	2.76%	3.08%	3.60%	6.09%	5.26%	0.49%	0.60%	1.10%	1.90%	1.06%
04/01/2021	01/01/2021	12/21/2020	0.09%	0.09%	0.95%	1.68%	1.75%	2.60%	2.76%	3.08%	3.60%	6.09%	5.26%	0.49%	0.60%	1.10%	1.90%	1.06%
07/01/2022	07/01/2022	6/17/2022	1.20%	2.92%	3.31%	3.39%	4.75%	4.67%	4.83%	5.23%	6.94%	5.79%	6.03%	2.11%	2.84%	3.35%	3.77%	3.51%
10/01/2022	10/07/2022	8/26/2022	3.39%	4.17%	3.88%	3.72%	5.46%	5.13%	5.27%	5.81%	7.61%	6.03%	6.09%	3.34%	3.51%	3.66%	4.28%	3.97%
01/01/2023	01/06/2023	12/27/2022	4.45%	4.75%	3.84%	3.95%	5.15%	5.07%	5.29%	5.54%	6.99%	5.68%	6.31%	3.29%	2.93%	3.11%	4.13%	3.21%
End of Range																		

Named Range: ValueLineDebt

Value Line selected Yields

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Brentwood...rewater System Valuation as of 6-30-2020 - Created 10-8-2020

Source: Ibbotson S&P 1926 Stock, Bonds, Bills, and Inflation Yearbook

Year	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14	A-15	A-16
	Large Company Stocks	Large Company Stocks	Large Company Stocks	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Long-Term Government Bonds	Long-Term Government Bonds	Long-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds	U.S. Treasury Bills	Inflation	Risk Premia
	Total Returns	Income Returns	Appreciation Returns	Total Returns	Total Returns	Total Returns	Income Returns	Appreciation Returns	Yields	Total Returns	Income Returns	Appreciation Returns	Yields	Total Returns	Inflation	Risk Premia
	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	(A-1)-(A-7)
1969	-0.0850	0.0304	-0.1142	-0.2505	-0.0809	-0.0507	0.0595	-0.1083	0.0687	-0.0074	0.0665	-0.0727	0.0829	0.0658	0.0611	-0.1445
1970	0.0401	0.0341	0.0016	-0.1743	0.1837	0.1211	0.0674	0.0484	0.0648	0.1686	0.0749	0.0871	0.0590	0.0652	0.0549	-0.0273
1971	0.1431	0.0333	0.1079	0.1650	0.1101	0.1323	0.0632	0.0661	0.0597	0.0872	0.0575	0.0272	0.0525	0.0439	0.0386	0.0799
1972	0.1898	0.0309	0.1563	0.0443	0.0726	0.0569	0.0587	-0.0035	0.0599	0.0516	0.0575	-0.0075	0.0585	0.0384	0.0341	0.1311
1973	-0.1466	0.0286	-0.1737	-0.3090	0.0114	-0.0111	0.0651	-0.0726	0.0726	0.0461	0.0658	-0.0219	0.0679	0.0693	0.0880	-0.2117
1974	-0.2647	0.0369	-0.2972	-0.1995	-0.0306	0.0435	0.0727	-0.0345	0.0760	0.0569	0.0724	-0.0199	0.0712	0.0800	0.1220	-0.3374
1975	0.3720	0.0537	0.3155	0.5282	0.1464	0.0920	0.0799	0.0073	0.0805	0.0783	0.0805	0.0012	0.0719	0.0580	0.0701	0.2921
1976	0.2384	0.0438	0.1915	0.2738	0.1865	0.1675	0.0789	0.0807	0.0721	0.1287	0.0710	0.0525	0.0600	0.0508	0.0481	0.1595
1977	-0.0718	0.0431	-0.1150	0.2338	0.0171	-0.0069	0.0714	-0.0786	0.0803	0.0141	0.0649	-0.0515	0.0751	0.0512	0.0677	-0.1432
1978	0.0656	0.0533	0.0106	0.2346	-0.0007	-0.0118	0.0790	-0.0905	0.0898	0.0409	0.0783	-0.0449	0.0883	0.0718	0.0903	-0.0134
1979	0.1844	0.0571	0.1231	0.4346	-0.0418	-0.0123	0.0886	-0.0984	0.1012	0.0409	0.0904	-0.0507	0.1033	0.1038	0.1331	0.0958
1980	0.3242	0.0573	0.2577	0.3988	-0.0276	-0.0395	0.0997	-0.1400	0.1199	0.0391	0.1055	-0.0681	0.1396	0.1245	0.1240	0.0685
1981	-0.0491	0.0489	-0.0972	0.4134	-0.0124	0.0186	0.1155	-0.1033	0.1334	0.0945	0.1297	-0.0455	0.1396	0.1471	0.0894	-0.1646
1982	0.2141	0.0550	0.1476	0.2801	0.4256	0.4036	0.1350	0.2395	0.1095	0.2910	0.1281	0.1423	0.0990	0.1054	0.0387	0.0791
1983	0.0965	0.0500	0.1727	0.3967	0.0626	0.0065	0.1038	-0.0982	0.1197	0.0741	0.1035	-0.0330	0.1141	0.0880	0.0380	0.1213
1984	0.0627	0.0456	0.0139	-0.0667	0.1686	0.1548	0.1174	0.0232	0.1170	0.1402	0.1168	0.0122	0.1104	0.0985	0.0395	-0.0547
1985	0.3216	0.0510	0.2634	0.2466	0.3009	0.3097	0.1125	0.1784	0.0956	0.2033	0.1029	0.0901	0.0855	0.0772	0.0377	0.2091
1986	0.1847	0.0374	0.1463	0.0685	0.1985	0.2453	0.0898	0.1499	0.0789	0.1514	0.0772	0.0699	0.0685	0.0616	0.0113	0.0949
1987	0.0523	0.0364	0.0203	-0.0930	-0.0027	-0.0271	0.0792	-0.1069	0.0920	0.0290	0.0747	-0.0475	0.0832	0.0547	0.0441	-0.0269
1988	0.1681	0.0417	0.1241	0.2287	0.1070	0.0967	0.0897	0.0036	0.0918	0.0610	0.0824	-0.0226	0.0917	0.0635	0.0442	0.0784
1989	0.3149	0.0385	0.2726	0.1018	0.1623	0.1811	0.0881	0.0862	0.0816	0.1329	0.0846	0.0434	0.0794	0.0837	0.0465	0.2268
1990	-0.0317	0.0336	-0.0656	-0.2156	0.0678	0.0618	0.0819	-0.0261	0.0844	0.0973	0.0815	0.0102	0.0770	0.0781	0.0611	-0.1136
1991	0.3055	0.0382	0.2631	0.4463	0.1989	0.1930	0.0822	0.1010	0.0730	0.1546	0.0743	0.0736	0.0597	0.0560	0.0306	0.2233
1992	0.0767	0.0303	0.0446	0.2335	0.0939	0.0805	0.0726	0.0034	0.0726	0.0719	0.0627	0.0064	0.0610	0.0351	0.0290	0.0041
1993	0.0999	0.0283	0.0706	0.2098	0.1319	0.1824	0.0717	0.1071	0.0654	0.1124	0.0553	0.0607	0.0522	0.0290	0.0275	0.0282
1994	0.0131	0.0282	-0.0154	0.0311	-0.0576	0.0777	0.0659	-0.1429	0.0799	-0.0514	0.0607	-0.1114	0.0780	0.0390	0.0267	-0.0528
1995	0.3743	0.0291	0.3411	0.3446	0.2720	0.3167	0.0760	0.2304	0.0603	0.1680	0.0669	0.0966	0.0538	0.0560	0.0254	0.2983
1996	0.2307	0.0254	0.2026	0.1762	0.0140	-0.0093	0.0618	-0.0737	0.0673	0.0210	0.0582	-0.0390	0.0616	0.0521	0.0332	0.1689
1997	0.3336	0.0211	0.3101	0.2278	0.1295	0.1585	0.0664	0.0851	0.0602	0.0838	0.0614	0.0195	0.0573	0.0526	0.0170	0.2672
1998	0.2858	0.0168	0.2667	-0.0731	0.1076	0.1306	0.0583	0.0689	0.0542	0.0583	0.0529	0.0466	0.0468	0.0486	0.0161	0.2275
1999	0.2104	0.0136	0.1953	0.2979	-0.0745	-0.0896	0.0557	-0.1435	0.0682	-0.0177	0.0530	-0.0706	0.0645	0.0468	0.0268	0.1547
2000	-0.0911	0.0110	-0.1014	-0.0359	0.1287	0.2148	0.0650	0.1436	0.0558	0.1259	0.0619	0.0594	0.0507	0.0589	0.0339	-0.1561
2001	-0.1188	0.0118	-0.1304	0.2277	0.1065	0.0770	0.0553	-0.0189	0.0575	0.0762	0.0473	0.0323	0.0442	0.0383	0.0155	-0.1741
2002	-0.2210	0.0139	-0.2337	-0.1328	0.1633	0.1784	0.0559	0.1169	0.0484	0.1293	0.0398	0.0865	0.0261	0.0165	0.0238	-0.2769
2003	0.2870	0.0200	0.2638	0.6070	0.0527	0.0145	0.0480	-0.0336	0.0511	0.0480	0.0328	-0.0048	0.0297	0.0188	0.0230	0.0585
2004	0.1087	0.0175	0.0899	0.1839	0.0872	0.0851	0.0502	0.0326	0.0484	0.0225	0.0328	-0.0107	0.0347	0.0120	0.0326	0.0585
2005	0.0491	0.0184	0.0300	0.0569	0.0587	0.0781	0.0469	0.0302	0.0461	0.0136	0.0392	-0.0258	0.0434	0.0298	0.0342	0.0022
2006	0.0549	0.0196	0.0353	-0.0522	0.0260	0.0988	0.0486	-0.0364	0.0491	0.0151	0.0454	-0.0151	0.0465	0.0480	0.0254	0.1112
2007	0.0549	0.0196	0.0353	-0.0522	0.0260	0.0988	0.0486	-0.0364	0.0491	0.0151	0.0454	-0.0151	0.0465	0.0480	0.0254	0.1112
2008	-0.3700	0.0192	-0.3849	-0.3672	0.0878	0.2587	0.0445	0.2050	0.3003	0.1311	0.0296	0.0992	0.0126	0.0160	0.0009	0.0063
2009	0.2646	0.0248	0.2345	0.2809	0.0302	-0.1490	0.0458	-0.1825	0.0458	-0.0240	0.0201	-0.0442	0.0242	0.0010	0.0272	0.2299
2010	0.1506	0.0202	0.1278	0.3126	0.1244	0.1014	0.0425	0.0589	0.0414	0.0712	0.0192	0.0516	0.0170	0.0012	0.0150	0.1081
2011	0.0211	0.0213	0.0000	-0.0326	0.1795	0.2823	0.0381	0.2374	0.0248	0.0946	0.0158	0.0779	0.0059	0.0004	0.0296	-0.0170

S:\water industry\PA American - Brentwood\Brentwood...stewater System Valuation as of 6-30-2020 - Created 10-8-2020

Source: Ibbotson S&P 500 Stock, Bonds, Bills, and Inflation Yearbook

Year	A-1 Large Company Stocks		A-2 Large Company Stocks		A-3 Large Company Stocks		A-4 Small Company Stocks		A-5 Long-Term Corporate Bonds		A-6 Long-Term Government Bonds		A-7 Long-Term Government Bonds		A-8 Long-Term Government Bonds		A-9 Long-Term Government Bonds		A-10 Intermediate-Term Government Bonds		A-11 Intermediate-Term Government Bonds		A-12 Intermediate-Term Government Bonds		A-13 Intermediate-Term Government Bonds		A-14 U.S. Treasury Bills		A-15 Inflation		A-16 Risk Premia							
	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *	Jan-Dec *						
2012	0.1600	0.0250	0.1341	0.1824	0.1068	0.0331	0.0240	0.0088	0.0241	0.0207	0.0058	0.0148	0.0046	0.0006	0.0174	0.1360																						
2013	0.3239	0.0248	0.2960	0.4507	-0.0707	-0.1278	0.0288	-0.1570	0.0378	-0.0368	0.0102	-0.0468	0.0149	0.0002	0.0151	0.2951																						
2014	0.1369	0.0216	0.1139	0.0292	0.1728	0.2471	0.0341	0.2093	0.0246	0.0300	0.0163	0.0135	0.0155	0.0002	0.0076	0.1028																						
2015	0.0138	0.0210	-0.0073	-0.0360	-0.0102	-0.0065	0.0247	-0.0311	0.0268	0.0179	0.0151	0.0029	0.0169	0.0002	0.0073	-0.0109																						
2016	0.1196	0.0226	0.0954	0.2565	0.0670	0.0175	0.0230	-0.0040	0.0272	0.0192	0.0136	0.0058	0.0185	0.0020	0.0207	0.0966																						
2017	0.2183	0.0221	0.1942	0.1119	0.1225	0.0624	0.0267	0.0351	0.0254	0.0164	0.0193	-0.0029	0.0211	0.0080	0.0211	0.1916																						
2018	-0.0438	0.0201	-0.0624	-0.1160	-0.0473	-0.0057	0.0282	-0.0350	0.0284	0.0116	0.0265	-0.0155	0.0250	0.0181	0.0191	-0.0720																						
2019	0.3149	0.0234	0.2888	0.2063	0.1995	0.1216	0.0255	0.0953	0.0225	0.0826	0.0208	0.0454	0.0170	0.0214	0.0229	0.2894																						
2020	0.1840	0.0180	0.1626	0.0659	0.1540	0.1665	0.0153	0.1512	0.0137	0.0725	0.0066	0.0658	0.0044	0.0045	0.0136	0.1687																						
2021	0.2871	0.0161	0.2689	0.3348	-0.0266	-0.0541	0.0173	-0.0717	0.0188	-0.0336	0.0086	-0.0421	0.0135	0.0004	0.0704	0.2698																						
Average	0.1214	0.0389	0.0821	0.1663	0.0640	0.0597	0.0487	0.0088	0.0492	0.0506	0.0429	0.0070	0.0425	0.0330	0.0298	0.0726																						
Median	0.1400	0.0372	0.1109	0.1832	0.0480	0.0388	0.0401	0.0033	0.0415	0.0336	0.0368	0.0032	0.0362	0.0282	0.0268	0.0813																						
High	0.5399	0.0877	0.4659	1.4287	0.4256	0.4036	0.1350	0.2395	0.1334	0.2910	0.1297	0.1423	0.1396	0.1471	0.1816	0.5087																						
Low	-0.4334	0.0110	-0.4707	-0.5801	-0.0809	-0.1490	0.0153	-0.1825	0.0137	-0.0801	0.0058	-0.1114	0.0044	-0.0002	-0.1030	-0.4667																						
Last 5 year (60 months)																																						
Average	0.1921	0.0199	0.1704	0.1206	0.0804	0.0581	0.0226	0.0350	0.0218	0.0299	0.0164	0.0101	0.0162	0.0105	0.0294	0.1695																						
Median	0.2183	0.0201	0.1942	0.1119	0.1225	0.0624	0.0255	0.0351	0.0225	0.0164	0.0193	-0.0029	0.0170	0.0080	0.0211	0.1916																						
High	0.3149	0.0234	0.2888	0.3348	0.1995	0.1665	0.0282	0.1512	0.0284	0.0826	0.0265	0.0658	0.0250	0.0214	0.0704	0.2894																						
Low	-0.0438	0.0161	-0.0624	-0.1160	-0.0473	-0.0541	0.0153	-0.0717	0.0137	-0.0336	0.0066	-0.0421	0.0044	0.0004	0.0136	-0.0720																						

* Compound Annual Return

Appendix A-5.1 (WAD)

Decile	Recent Number of Companies	Min Size \$s	Max Size \$s	Arithmetic Mean (%)	Beta	Size Premium S&P 500	Beta Adjusted	Risk Premium	Size Premium
1	223	36,160,584,000	2,324,390,219,000	11.22%	0.92	-0.76%		6.87%	-0.76%
2	209	16,759,390,000	36,099,221,000	12.93%	1.04	0.95%		6.87%	0.95%
3	221	8,216,356,000	16,738,364,000	13.69%	1.10	1.71%		6.87%	1.71%
4	250	5,019,883,000	8,212,638,000	13.65%	1.13	1.67%		6.87%	1.67%
5	272	3,281,009,000	5,003,747,000	14.48%	1.17	2.50%		6.87%	2.50%
6	288	2,170,315,000	3,276,553,000	14.83%	1.18	2.85%		6.87%	2.85%
7	323	1,306,402,000	2,164,524,000	15.62%	1.25	3.64%		6.87%	3.64%
8	453	629,118,000	1,306,038,000	15.88%	1.31	3.90%		6.87%	3.90%
9	441	290,002,000	627,803,000	16.73%	1.34	4.75%		6.87%	4.75%
10 - Smallest	622	10,588,000	289,007,000	19.67%	1.39	7.68%		6.87%	7.68%
Total	3,302								
Large-Cap 1-2	432	16,759,390,000	2,324,390,219,000	11.48%	0.94	-0.50%		6.87%	-0.75%
Mid-Cap 3-5	743	3,281,009,000	16,738,364,000	13.81%	1.12	1.82%		6.87%	1.82%
Low Cap 6-8	1,064	629,118,000	3,276,553,000	15.26%	1.23	3.28%		6.87%	3.28%
Micro-Cap 9-10	1,063	10,588,000	627,803,000	17.55%	1.35	5.57%		6.87%	5.57%
	3,302		2,345,032,939,000						
1-5	1,175	3,281,009,000	2,324,390,219,000	11.77%	0.96	-0.21%		6.87%	-0.21%
6-10	2,127	10,588,000	3,276,553,000	15.49%	1.24	3.51%		6.87%	3.51%

2021 Business Valuation Resources, LLC

Historical Return 1928-2021	11.98%
10-Year T Bond Average Annual Return	5.11%
Risk Premium	6.87%

Historical Return 1928-2021	11.98%
20-Year T Bond Average Annual Return	5.78%
Risk Premium	6.20%

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held February 9, 2023

Docket Number: M-2022-3037661

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

September 30, 2022

Gladys Brown Dutrieuille, Chairman
Stephen M. DeFrank, Vice Chairman
Ralph V. Yanora
Kathryn L. Zerfuss
John F. Coleman, Jr.

Appendix A-5.1 (WAD)

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Appendix A-5.1 (WAD)

Introduction:

On September 20, 1991, the Commission initiated a rulemaking at L-00910061 pertaining to earnings disclosures by the public utilities subject to its jurisdiction. At that docket, the Commission stated that the submission of accurate, reliable and complete earnings disclosure reports, at regular intervals, is essential to the fulfillment of the broad regulatory oversight responsibilities entrusted to the Commission by the Legislature in the Public Utility Code. The earnings disclosure regulations promulgated by the Commission were adopted October 1, 1992, and published January 23, 1993, at 23 Pa.B. 463. Based upon those regulations, codified at 52 Pa. Code, Chapter 71, a reporting format was developed and distributed to the jurisdictional fixed utilities of Pennsylvania.

All fixed utilities having jurisdictional revenues of \$1,000,000 or more, for a calendar year, are required to file the report by March 31 of each year. Such reports are to be based upon the results of operations for the 12-month period ending December 31 of the prior year. Utilities having more than \$10,000,000 in jurisdictional revenues are also required to file reports for the 12 months ending on March 31, June 30, and September 30 of each year. On November 30, 2004, however, the Pennsylvania General Assembly signed into law Act 183 concerning alternative telecommunications regulation and broadband deployment. As a result of Act 183, the reporting requirements for the PUC jurisdictional telecommunications companies of Pennsylvania have been streamlined at section 3015(e) of the Public Utility Code. A quarterly earnings report is not listed among those reports now required of PUC jurisdictional telecommunications utilities in Pennsylvania and, therefore, this report does not address telephone company earnings.

The reports have been filed for the period ended September 30, 2022.¹ The Finance Staff of the Bureau of Technical Utility Services has reviewed the reports and has prepared this summary report for public release. This report sets forth the achieved return on equity for each company, the last allowed return for that utility, a market return as determined through the analysis of the barometer group data and the most recent returns allowed, per industry, by the Pennsylvania Public Utility Commission and by other regulatory bodies. Where a utility has not filed a report, the reasons for not filing are indicated.

Questions pertaining to the preparation and contents of this Report should be directed to Ms. Erin Laudenslager, Manager - Finance, Bureau of Technical Utility Services, at (717) 705-4364.

¹ UGI Utilities, Inc. – Gas Division, PECO Energy Company - Gas Operations, Columbia Gas of Pennsylvania, Inc., The York Water Company, Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, and National Fuel Gas Distribution Corporation have rate filings at Docket Nos. R-2021-3030218, R-2022-3031113, R-2022-3031211, R-2022-3031340, R-2022-3031672, R-2022-3031673, and R-2022-3035730 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

The equity return summaries that follow in Attachment A are, for each quarter;

ACTUAL

1. Based on actual results of operations

and

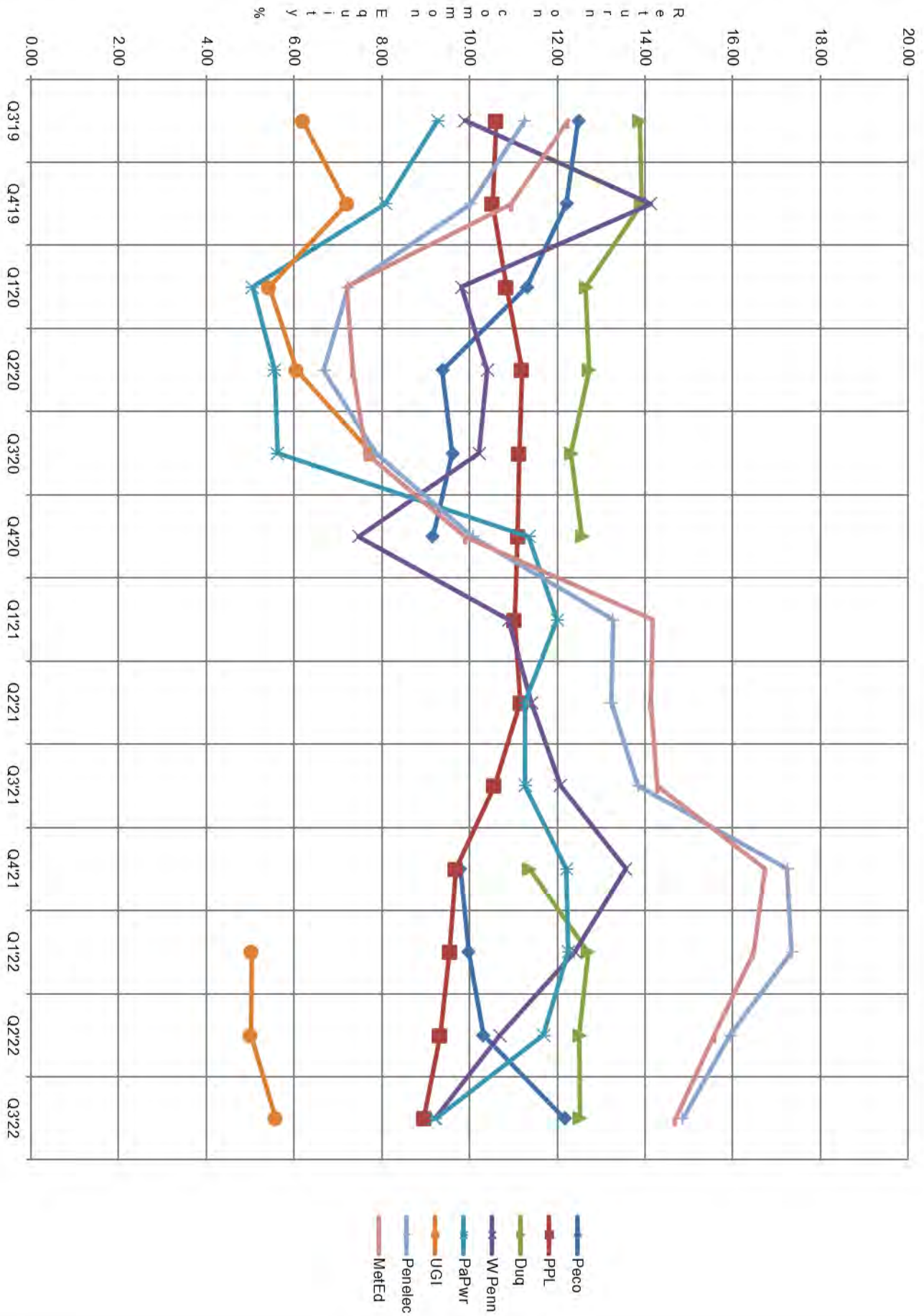
ADJUSTED

2. Based on company proposed pro forma and ratemaking adjustments

**ELECTRIC UTILITIES
EQUITY RETURNS BY QUARTER**

QTR	END	Peco		PPL		Duq		W Penn		PaPwr		UGI		Penelec		MetEd	
		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2016	4	12.52	10.65	10.45	10.29	9.71	9.01					26.07	7.30				
2017	1	13.01	11.40	9.76	8.49	9.53	8.99					22.86	6.81				
	2	12.98	11.40	10.71	9.70	9.86	9.24	8.23	7.38	7.32	7.97	21.96	6.74	9.23	9.20	9.74	9.35
	3	12.84	10.52	10.15	9.30	9.53	9.23	7.63	7.24	8.32	9.08	16.13	5.22	9.61	9.50	11.37	10.97
	4	12.07	9.11	11.07	10.63			9.47	9.12	8.46	8.19			11.70	10.93	12.58	11.67
2018	1			12.53	11.36			10.35	9.08	9.03	8.08			11.84	9.93	12.77	11.38
	2			11.05	9.49			9.92	8.52	8.79	7.57			11.56	9.39	11.90	10.26
	3			11.19	9.83			11.41	6.74	10.30	5.80			13.97	8.44	14.46	9.62
	4	10.88	7.61	11.10	10.15	12.06	9.39	9.92	6.78	10.64	7.43			13.27	9.31	13.05	7.40
2019	1	12.65	7.93	10.10	8.96	12.58	9.73	9.08	6.62	9.14	7.61	7.05	5.22	12.03	8.07	12.54	7.66
	2	12.34	7.94	10.51	8.95	12.38	9.34	8.02	5.99	8.29	7.10	5.77	3.22	11.42	8.16	11.72	7.21
	3	12.49	7.96	10.61	8.99	13.88	9.33	9.90	7.87	9.28	7.76	6.20	2.04	11.26	8.78	12.25	7.77
	4	12.21	8.50	10.53	10.40	13.92	9.08	14.13	7.07	8.08	6.90	7.20	2.38	10.02	8.54	10.96	9.27
2020	1	11.31	8.35	10.84	11.20	12.66	8.31	9.82	5.54	5.06	6.71	5.43	2.26	7.24	8.74	7.20	8.31
	2	9.38	8.17	11.20	10.81	12.73	8.56	10.41	5.53	5.56	6.55	6.06	2.01	6.68	7.94	7.34	8.04
	3	9.62	8.56	11.14	11.20	12.32	8.08	10.22	5.42	5.62	6.74	7.76	0.41	7.87	8.75	7.64	8.37
	4	9.16	7.64	11.10	11.48	12.57	8.15	7.48	5.65	11.36	7.34			10.08	8.62	9.91	8.64
2021	1			11.03	11.76			10.89	6.64	12.01	7.01			13.27	8.96	14.19	9.44
	2			11.17	11.73			11.42	7.07	11.27	5.94			13.23	8.15	14.13	9.06
	3			10.57	10.65			12.08	7.91	11.27	5.91			13.85	8.67	14.29	9.38
	4	9.79	7.59	9.69	10.57	11.37	11.23	13.57	7.85	12.21	5.42			17.25	8.04	16.74	9.40
2022	1	9.98	6.99	9.55	9.49	12.71	10.91	12.40	6.99	12.26	5.30	5.03	4.93	17.35	7.83	16.48	9.40
	2	10.32	7.19	9.33	9.54	12.51	10.22	10.70	5.78	11.69	5.04	5.01	3.89	15.95	6.93	15.59	8.72
	3	12.17	7.42	8.97	9.14	12.52	9.74	9.21	4.43	9.23	4.35	5.58	0.65	14.87	5.88	14.70	7.57

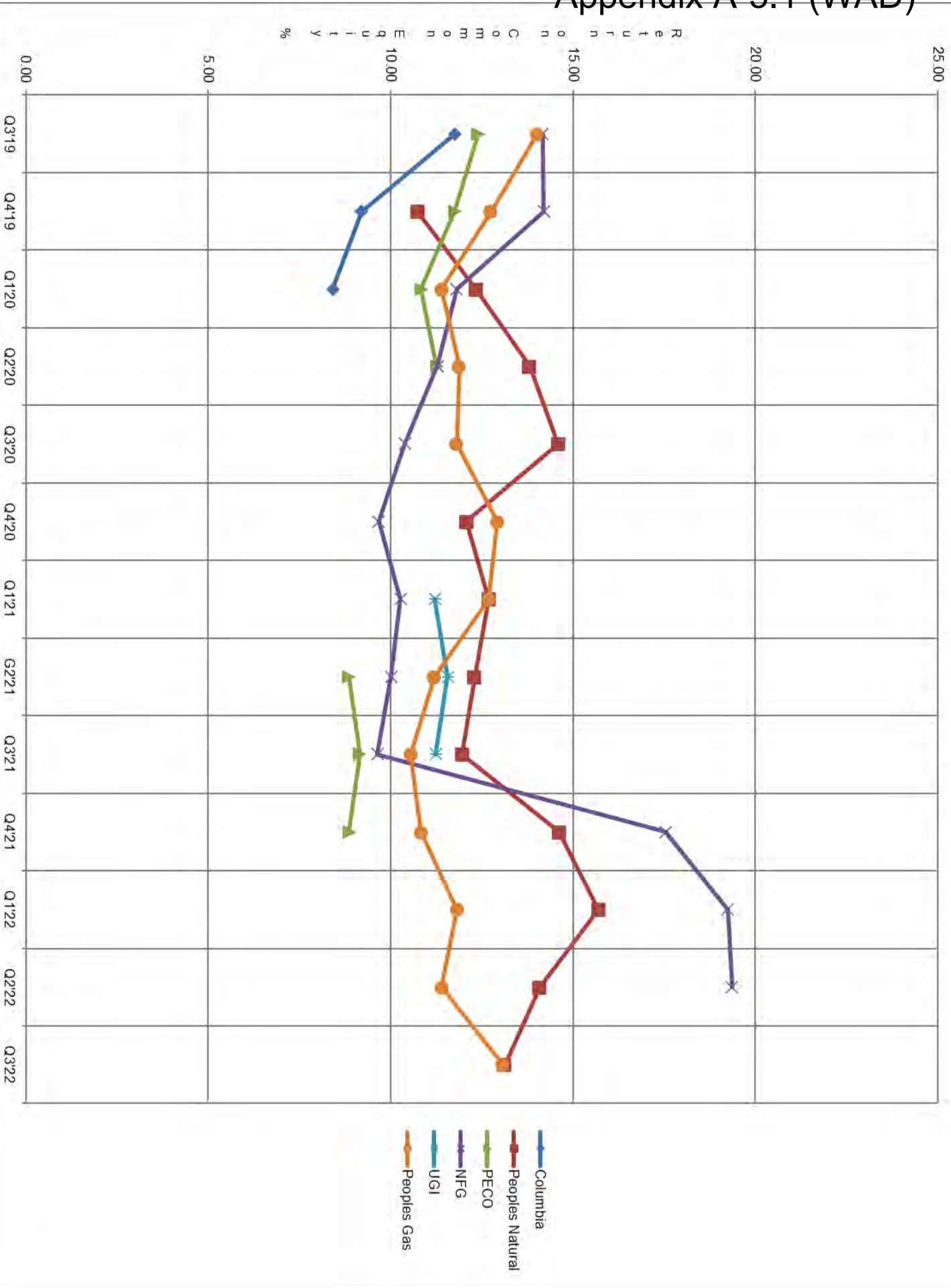
Major Pennsylvania Electric Utilities - Actual Equity Returns by Quarter



**GAS UTILITIES
EQUITY RETURNS BY QUARTER**

QTR	Columbia		Peoples Natural		PECO		NFG		UGI		Peoples Gas		
	<u>END</u>	<u>ACT</u>	<u>ADJ</u>	<u>ACT</u>	<u>ADJ</u>	<u>ACT</u>	<u>ADJ</u>	<u>ACT</u>	<u>ADJ</u>	<u>ACT</u>	<u>ADJ</u>	<u>ACT</u>	<u>ADJ</u>
2016	4	8.90	9.26	10.11	11.03	11.39	12.37	14.18	9.58			12.47	11.87
2017	1	10.52	10.17	9.96	9.27	11.45	12.55	12.84	9.26	21.08	10.09	11.82	12.34
	2	9.15	9.81	9.41	9.71	10.87	12.17	13.33	10.53	19.16	9.44	11.89	13.47
	3	8.15	8.77	6.69	6.40	11.26	10.92	10.92	10.00	13.34	9.03	12.04	13.36
	4	7.76	8.48	9.66	7.27	11.48	9.83	11.58	10.56	11.06	8.62	12.65	11.79
2018	1			11.42	7.00	12.65	9.77	14.40	10.20	12.82	7.90	14.02	10.17
	2			11.03	6.80	12.66	9.05	12.06	9.89	16.75	6.80	12.78	10.15
	3			10.21	7.43	12.54	8.36	12.52	10.12	18.69	8.04	13.03	10.20
	4	11.39	9.81			12.86	8.68	12.24	10.21			13.92	11.13
2019	1	12.76	10.22			13.68	9.06	11.83	10.93			14.10	10.71
	2	12.04	9.92			12.62	8.41	14.56	9.99			13.80	11.66
	3	11.77	9.85			12.40	8.31	14.17	9.75			14.02	11.63
	4	9.21	9.09	10.74	12.26	11.75	6.99	14.20	9.77			12.76	11.20
2020	1	8.42	9.11	12.34	12.34	10.84	7.68	11.82	9.92			11.40	11.07
	2			13.81	12.38	11.26	7.25	11.28	9.05			11.89	11.10
	3			14.60	12.77			10.39	8.25			11.82	11.50
	4			12.09	10.37			9.68	8.12			12.93	12.11
2021	1			12.69	10.43			10.27	8.47	11.22	7.70	12.69	11.76
	2			12.31	10.23	8.85	5.13	10.02	8.47	11.57	8.04	11.20	11.61
	3			11.97	10.27	9.16	5.27	9.64	8.45	11.24	6.97	10.56	11.38
	4			14.62	10.52	8.86	5.79	17.54	8.02			10.84	10.28
2022	1			15.71	10.93			19.24	7.88			11.83	12.09
	2			14.09	11.67			19.36	6.87			11.40	12.19
	3			13.13	10.30							13.08	11.31

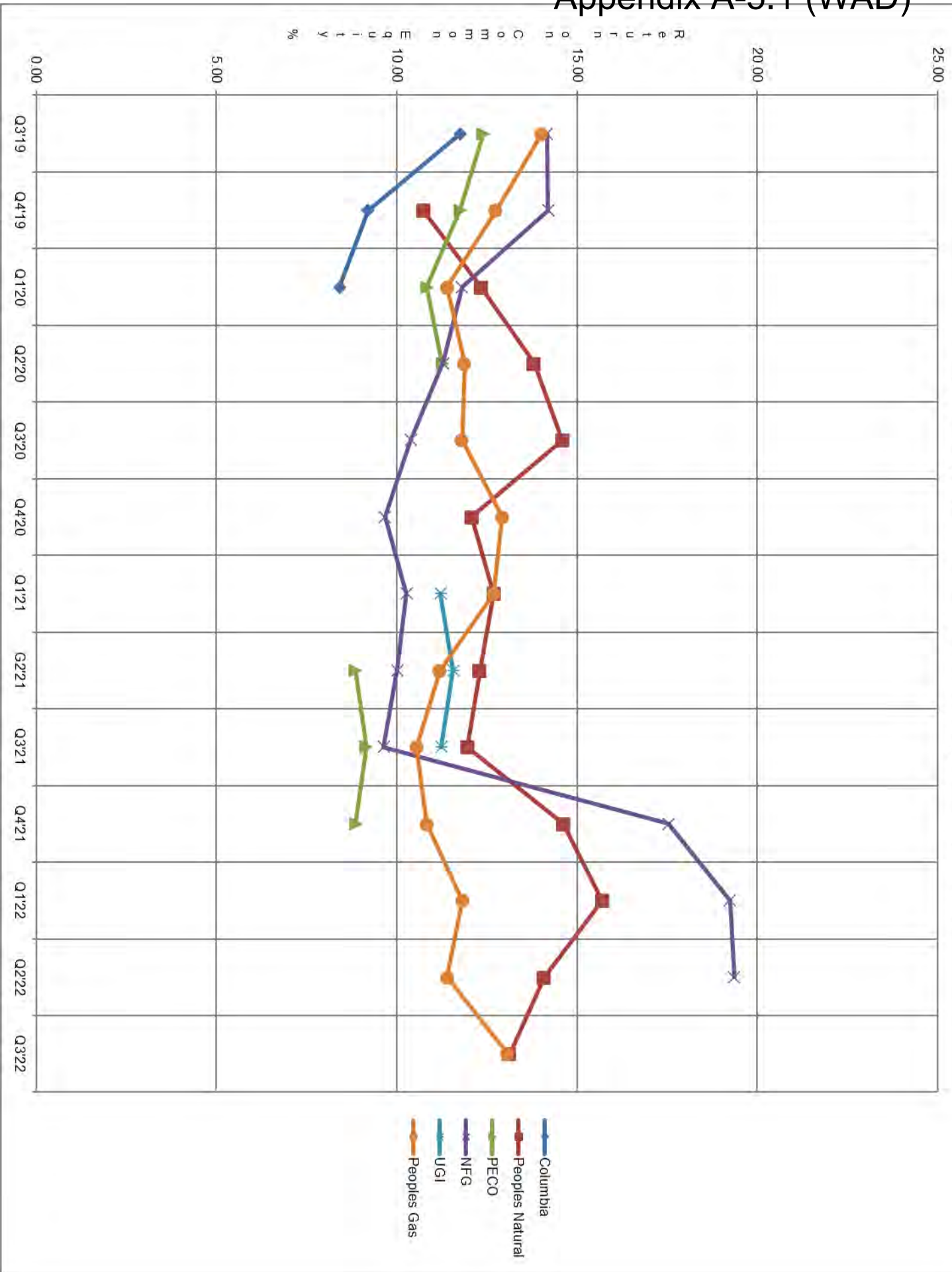
Major Pennsylvania Gas Utilities - Actual Equity Returns by Quarter



**WATER UTILITIES
EQUITY RETURNS BY QUARTER**

QTR	END	PAWC		Aqua		Veolia		York	
		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2016	4	9.37	8.51	11.70	10.57	9.13	9.90	11.50	10.40
2017	1			11.34	10.04	9.22	9.60	11.61	9.50
	2			10.99	9.22	9.03	9.07	11.60	9.10
	3			10.99	9.23	8.57	8.57	11.60	8.70
	4			11.05	8.63	8.75	8.73	11.30	8.40
2018	1	9.55	8.97	10.94	8.41				
	2	10.27	9.65						
	3	11.03	9.48						
	4	10.08	9.03					10.70	10.30
2019	1	9.82	8.87					11.60	11.60
	2	9.72	8.90	9.84	9.04	10.78	10.36	11.80	11.80
	3	9.13	8.41	10.69	8.84	11.55	11.75	12.00	12.00
	4	8.71	8.09	10.33	8.24	11.80	12.15	12.00	9.80
2020	1	8.74	7.56	10.47	8.31	11.30	11.30	12.39	12.39
	2			10.81	8.57	10.72	10.69	12.51	12.51
	3			10.33	8.55	11.13	10.69	13.76	13.76
	4	8.90	8.15	9.89	8.30	13.98	10.17	13.42	9.94
2021	1	9.41	8.90	9.99	8.38	14.34	10.48	12.98	9.74
	2	10.03	9.28			13.43	9.83	12.76	9.66
	3	9.89	8.65			13.58	9.07	12.51	9.32
	4	9.75	8.05			11.08	9.75	12.05	8.86
2022	1	9.73	7.82			12.04	9.68		
	2			8.26	8.91	12.05	9.79		
	3			8.78	8.85	11.14	9.30		

Major Pennsylvania Gas Utilities - Actual Equity Returns by Quarter



Attachment B includes:

A. Overall Returns on rate base

1. Actual
2. Company proposed pro forma and ratemaking adjustments

and

B. Equity Returns

1. Actual
2. Company proposed pro forma and ratemaking adjustments

Summary of Returns
For the Year Ended September 30, 2022

COMPANY NAME	<u>OVERALL RETURN</u>		<u>EQUITY RETURN</u>		ROE	YEAR
	ACTUAL	ADJ	ACTUAL	ADJ	AUTH	AUTH
ELECTRIC						
<u>\$10,000,000 Revenues</u>						
PECO Energy - Electric Operations	8.34	5.71	12.17	7.42	Settled	2021
PPL Electric Utilities Corp.	6.82	6.92	8.97	9.14	Settled	2015
Duquesne Light Company	8.91	7.34	12.52	9.74	Settled	2021
West Penn Power Company	7.10	4.34	9.21	4.43	Settled	2017
Pennsylvania Power Company	7.93	4.36	9.23	4.35	Settled	2017
UGI Utilities, Inc. - Electric Division	4.92	2.33	5.58	0.65	Settled	2021
Pennsylvania Electric Company	9.63	5.05	14.87	5.88	Settled	2017
Metropolitan Edison Company	9.68	5.92	14.70	7.57	Settled	2017
GAS						
<u>\$10,000,000 Revenues</u>						
Columbia Gas of PA, Inc.*					Settled	2022
Peoples Natural Gas Company LLC	8.52	7.19	13.13	10.30	Settled	2019
PECO Energy - Gas Operations*					Settled	2022
National Fuel Gas Distribution Corp.*					Settled	2006
UGI Utilities, Inc. – Gas Division*					Settled	2022
Peoples Gas Company, LLC	8.44	7.63	13.08	11.31	Settled	2013
WATER						
<u>\$10,000,000 Revenues</u>						
PA American Water Company*					Settled	2022
Aqua Pennsylvania ²	6.82	6.82	8.78	8.85	10.00	2022
York Water Company*					Settled	2023
Veolia Water Pennsylvania, Inc.	8.03	6.99	11.14	9.30	Settled	2018
<u>\$1,000,000 to \$10,000,000 Revenues</u>						
Newtown Artesian Water Co.	8.68	5.59	11.74	6.14	Settled	2019
Columbia Water Company	3.98	3.98	4.14	4.14	Settled	2015

* UGI Utilities, Inc. – Gas Division, PECO Energy Company - Gas Operations, Columbia Gas of Pennsylvania, Inc., The York Water Company, Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, and National Fuel Gas Distribution Corporation have rate filings at Docket Nos. R-2021-3030218, R-2022-3031113, R-2022-3031211, R-2022-3031340, R-2022-3031672, R-2022-3031673, and R-2022-3035730 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

² The authorized equity return of Aqua Pennsylvania, Inc. includes an additional adjustment of 0.25% for management effectiveness.

ALLOWED RATES OF RETURN ON COMMON EQUITY

This is a historical chart that shows the most recent rate cases for select companies in electric, gas, and water. A docket number followed by their final return on equity and year is also given.

ELECTRIC

Docket Number **ROE (%)** **Year**

Recent PA PUC Allowed

Duquesne Light Company	R-2021-3024750	Settled	2021
PECO Energy – Electric Operations	R-2021-3024601	Settled	2021
UGI Utilities, Inc. – Electric	R-2021-3023618	Settled	2021
Pennsylvania Electric Company	R-2016-2537352	Settled	2017
Metropolitan Edison Company	R-2016-2537349	Settled	2017
Pennsylvania Power Company	R-2016-2537355	Settled	2017
West Penn Power Company	R-2016-2537359	Settled	2017

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **7.23-10.30**

GAS

Recent PA PUC Allowed

Columbia Gas of Pennsylvania, Inc.	R-2022-3031211	Settled	2022
PECO Energy – Gas Operations	R-2022-3030218	Settled	2022
UGI Utilities, Inc. – Gas Division	R-2021-3030218	Settled	2022
Peoples Natural Gas Company	R-2018-3006818	Settled	2019
Peoples Gas Company	R-2013-2355886	Settled	2013

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **8.34-10.70**

WATER

Recent PA PUC Allowed

PA American Water	R-2022-3031672	Settled	2022
York Water	R-2022-3031340	Settled	2023
Aqua Pennsylvania	R-2021-3027385	10.00	2022
PA American Water	R-2020-3019369	Settled	2021
Veolia Water f/k/a Suez Water	R-2018-3000834	Settled	2018
Columbia Water	R-2017-2598203	Settled	2017

Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services. **6.31-11.20**

Distribution System Improvement Charge (DSIC) Eligible Utilities
Return on Equity (ROE) Summary

	Utility Adjusted ROE ³ (%)	Commission Approved ROE ⁴ (%)
ELECTRIC		
PECO Energy – Electric Operations	7.42	9.45
PPL Electric Utilities Corp.	9.14	9.45
Duquesne Light Company	9.74	9.45
West Penn Power Company	4.43	9.45
Pennsylvania Power Company	4.35	9.45
Pennsylvania Electric Company	5.88	9.45
Metropolitan Edison Company	7.57	9.45
UGI Utilities, Inc.- Electric Division	0.65	9.45
GAS		
Columbia Gas of PA, Inc.*		10.15
Peoples Natural Gas Company LLC	10.30	10.15
PECO Energy – Gas Operations*		10.15
Peoples Gas Company, LLC	11.31	10.15
UGI Utilities, Inc. – Gas Division*		10.15
WATER		
PA American Water Company*		9.75
PA American – Wastewater*		9.75
AQUA Pennsylvania ⁵	8.85	10.00
AQUA Pennsylvania – Wastewater ⁶	8.85	10.00
York Water Company*		9.75
Veolia Water Pennsylvania, Inc.	9.30	9.75
Columbia Water Company	4.14	9.75
Newtown Artesian Water	6.14	9.75

* UGI Utilities, Inc. – Gas Division, PECO Energy Company - Gas Operations, Columbia Gas of Pennsylvania, Inc., The York Water Company, Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, and National Fuel Gas Distribution Corporation have rate filings at Docket Nos. R-2021-3030218, R-2022-3031113, R-2022-3031211, R-2022-3031340, R-2022-3031672, R-2022-3031673, and R-2022-3035730 respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

3 Each utility lists adjustments on Schedule B of their quarterly financial report.

4 The ROE is approved in a utility's most recent fully litigated base rate proceeding for which a final order was entered not more than two years prior to the effective date of the DSIC. If more than two years have elapsed between the entry of a final order and the DSIC effective date, the ROE is from this report. If the base rate proceeding is settled, without a stipulated ROE, the ROE is from this report.

5 The Commission approved ROE of Aqua Pennsylvania, Inc. includes an additional adjustment of 0.25% for management effectiveness.

6 The Commission approved ROE of Aqua Pennsylvania Wastewater, Inc. includes an additional adjustment of 0.25% for management effectiveness.

Explanation of Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM)**Barometer Group Criteria**

The criteria used for determining the industry barometer groups used to calculate ROEs in this report are as follows:

- 50% or more of the company's assets must be related to the jurisdictional utility industry;
- The company's stock must be publicly traded and must have at least three years of earnings history;
- Companies targeted by merger and acquisition (M&A) activity will be excluded; companies involved in M&A activity may be excluded;
- Investment information for the company must be available to the Commission from more than one source;
- The barometer group companies must have an investment grade credit rating (S&P BBB- or better, Moody's Baa3 or better; and
- Geographic Regions:
 - EDCs: *Value Line* Investment Survey's East, Central, and West Group Electric Utility companies;
 - NGDCs: *Value Line* Investment Survey's Natural Gas Utility industry group companies;
 - Water/Wastewater: *Value Line* Investment Survey's Water Utility industry group companies.

The barometer group companies are reviewed by staff on a quarterly basis and make any changes to these companies based upon the criteria above.

ROE Calculations

The Commission consistently uses the DCF model to determine the appropriate cost of equity for utilities. In this report, the DSIC ROE is calculated using two DCF models.

TUS uses the following formula to calculate the current dividend DCF: $K = D_1/P_0 + G$

TUS uses the following formula to calculate the 52-week average dividend DCF: $K = D_0/P_a + G$

Definitions:

K	=	Cost of equity
D ₁	=	Dividend expected during the year
	=	$D_0 + \frac{1}{2}g$
D ₀	=	Latest indicated dividend, obtained from Yahoo! Finance
g	=	Expected 5-year dividend growth rate of barometer group obtained from Value Line Investment Survey.
P ₀	=	Current price of the stock, obtained from Yahoo! Finance
P _a	=	Average of high and low stock price over the latest 52-week period, obtained from Yahoo! Finance
G	=	Average of 5-year expected earnings growth rate forecasts obtained from Value Line, Zacks Investment Survey, and Yahoo! Finance.

The CAPM uses the yield of a risk-free interest-bearing obligation plus a rate of return premium that is proportional to the systematic risk of an investment.

TUS uses the following formula to calculate CAPM: $K = \beta(R_m - R_f)$

Three components are necessary to calculate the CAPM cost of equity:

- β = Beta, a measure of systematic risk for each stock
- R_f = The risk-free rate of return, 10-year U.S. Treasury yields are used for R_f . Yields are taken from the previous two quarters and forecasted next four quarters.
- R_m = Total return of the equity market as determined by the SBBI Yearbook

The Commission determines the ROE used for DSIC purposes based on the range of reasonableness from the DCF barometer group data, CAPM data, recent ROEs adjudicated by the Commission, and informed judgment.

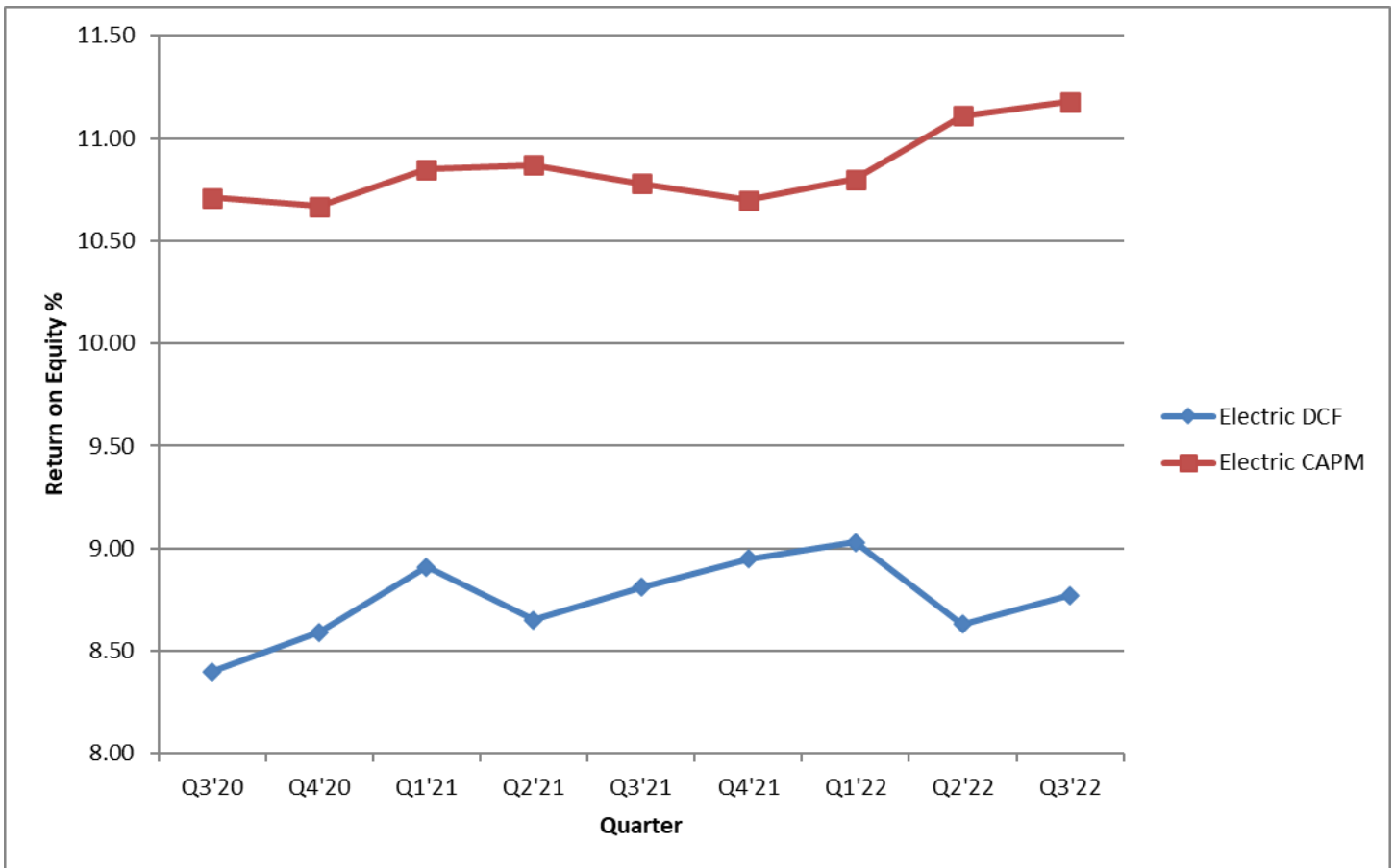
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity¹				
January 13, 2023				
<u>Electric Company Barometer Group</u>				
				Cost Rates
				<u>%</u>
(1)	Current DCF:			8.76
(2)	52-Week Average DCF:			<u>8.77</u>
(3)	Overall DCF ((1) + (2)) / 2 :			<u>8.77</u>
(4)	Market Indicated Common Equity Cost Rate Range: @ 1 standard deviation around the mean. ²			<u>7.23-10.30</u>
(5)	CAPM Check of DCF Reasonableness:			11.18
(6)	Recent Commission Approved ROEs ³ : *None within last two years			*
(7)	Distribution System Improvement Charge (DSIC) Return ⁴ :			<u>9.45%</u>
¹ As calculated by the Bureau of Technical Utility Services				
² Standard Deviation of 60 DCF observations				
³ Base rate case ROEs within last two years, fully litigated or stipulated for DSIC purposes				
⁴ Commission authorized Return on Equity (ROE) for DSIC purposes				
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.				

Historic Electric Industry Barometer Group DCF and CAPM Average ROEs

Electric		
	DCF	CAPM
Q3'20	8.40	10.71
Q4'20	8.59	10.67
Q1'21	8.91	10.85
Q2'21	8.65	10.87
Q3'21	8.81	10.78
Q4'21	8.95	10.70
Q1'22	9.03	10.80
Q2'22	8.63	11.11
Q3'22	8.77	11.18

Chart of Historic Electric Industry DCF and CAPM Average ROEs



Barometer electric companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Electric Company Barometer Group					
Calculation of a Current Dividend Yield					
	Closing	Latest	Ind. Div.		
	Market	Indicated	Plus 1/2	Current	
	Price (Po)	Dividend	Div. Growth	Dividend	
	<u>1/13/2023</u>	<u>(Do)</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(%)	(%)
Allete, Inc.	66.00	2.60	2.65	4.01	12.01
Alliant Energy Corp	55.80	1.71	1.76	3.16	9.02
Ameren Corp	89.75	2.36	2.44	2.72	9.27
American Electric Power	96.41	3.32	3.42	3.55	9.82
AVANGRID, Inc.	44.28	1.76	1.77	4.00	8.18
Avista Corp	42.84	1.76	1.80	4.19	8.72
CMS Energy Corp	64.34	1.84	1.90	2.95	10.77
Consolidated Edison	97.53	3.16	3.20	3.28	6.92
Dominion Energy	62.91	2.67	2.68	4.27	10.17
DTE Energy Company	119.39	3.81	3.87	3.24	8.06
Duke Energy Company	105.08	4.02	4.06	3.86	9.19
Edison International	68.45	2.95	3.02	4.42	7.89
Entergy Corp.	106.84	4.28	4.39	4.11	9.50
Eversource Energy	63.92	2.45	2.54	3.97	9.43
Eversource Energy	85.13	2.55	2.63	3.09	9.34
Exelon Corporation	43.38	1.35	1.35	3.11	9.77
FirstEnergy Corp	43.09	1.56	1.58	3.67	8.37
Fortis Inc.	41.71	1.69	1.74	4.17	8.79
IDACORP, Inc..	108.62	3.16	3.26	3.00	6.37
NextEra Energy, Inc.	85.07	1.70	1.79	2.10	11.95
NorthWestern Corp	59.07	2.52	2.55	4.31	7.54
OGE Energy Corp	40.22	1.66	1.68	4.19	8.66
Otter Tail Corp	63.10	1.65	1.71	2.71	9.46
PPL Corporation	30.72	0.90	0.88	2.85	5.85
Pinnacle West Capital Corp	76.20	3.46	3.49	4.59	4.89
Portland General Electric Co.	49.59	1.81	1.86	3.76	7.66
Public Service Enterprise Group	62.79	2.16	2.22	3.53	7.40
Southern Company	70.34	2.72	2.77	3.93	9.61
WEC Energy Group, Inc.	96.86	3.12	3.23	3.33	9.50
Xcel Energy Inc.	71.95	1.95	2.01	2.80	9.20
Group Average	70.38	2.42	2.47	3.56	8.78
Group Average G				5.20	
DCF				8.76	

Electric Company Barometer Group						
52-week Average Dividend Yield Calculation						
				Latest Indicated	Average Dividend	
	<u>High</u>	<u>Low</u>	<u>Average (Pa)</u>	<u>Dividend (Do)</u>	<u>Yield (Do/Pa)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(\$)	(%)	(%)
Allete, Inc.	68.46	47.77	58.12	2.60	4.47	12.47
Alliant Energy Corp	65.37	47.19	56.28	1.71	3.04	8.91
Ameren Corp	99.20	73.28	86.24	2.36	2.74	9.29
American Electric Power	105.60	80.30	92.95	3.32	3.57	9.85
AVANGRID, Inc.	51.71	37.64	44.68	1.76	3.94	8.11
Avista Corp	46.90	35.72	41.31	1.76	4.26	8.79
CMS Energy Corp	73.76	52.41	63.09	1.84	2.92	10.74
Consolidated Edison	102.21	78.10	90.16	3.16	3.51	7.15
Dominion Energy	88.78	57.18	72.98	2.67	3.66	9.57
DTE Energy Company	140.23	100.64	120.44	3.81	3.16	7.98
Duke Energy Company	116.33	83.76	100.05	4.02	4.02	9.34
Edison International	73.32	54.45	63.89	2.95	4.62	8.09
Entergy Corp.	126.82	94.94	110.88	4.28	3.86	9.26
Evergy Inc	73.13	54.12	63.63	2.45	3.85	9.32
Eversource Energy	94.63	70.54	82.59	2.55	3.09	9.33
Exelon Corporation	50.71	35.19	42.95	1.35	3.14	9.80
FirstEnergy Corp	48.85	35.32	42.09	1.56	3.71	8.41
Fortis Inc.	51.66	34.76	43.21	1.69	3.91	8.52
IDACORP, Inc..	118.92	93.53	106.23	3.16	2.97	6.34
NextEra Energy, Inc.	91.35	67.22	79.29	1.70	2.14	11.99
NorthWestern Corp	63.06	48.68	55.87	2.52	4.51	7.74
OGE Energy Corp	42.91	33.28	38.10	1.66	4.36	8.82
Otter Tail Corp	82.46	52.60	67.53	1.65	2.44	9.19
PPL Corporation	31.74	23.47	27.61	0.90	3.26	6.26
Pinnacle West Capital Corp	80.60	59.03	69.82	3.46	4.96	5.26
Portland General Electric Co.	57.03	41.58	49.31	1.81	3.67	7.57
Public Service Enterprise Group	75.61	52.51	64.06	2.16	3.37	7.24
Southern Company	80.57	60.71	70.64	2.72	3.85	9.53
WEC Energy Group, Inc.	108.39	80.82	94.61	3.12	3.30	9.47
Xcel Energy Inc.	77.66	56.89	67.28	1.95	2.90	9.31
Group Average	79.60	58.12	68.86	2.42	3.57	8.79
Group Average G					5.20	
DCF					8.77	
					8.77	
				Average of Current and 52-Week	8.77	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Electric Companies						
	5 Year Forecast				Average Earnings Growth	Growth Estimate
	Value Line	Value Line	Zack's	Yahoo		
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>		
	(%)	(%)	(%)	(%)		
Allete, Inc.	3.50	6.00	9.30	8.70	8.00	8.00
Alliant Energy Corp	6.00	6.00	5.80	5.80	5.87	5.87
Ameren Corp	7.00	6.50	6.90	6.26	6.55	6.55
American Electric Power	6.00	6.50	6.10	6.23	6.28	6.28
AVANGRID, Inc.	1.50	3.00	5.60	3.92	4.17	4.17
Avista Corp	4.00	3.00	5.20	5.40	4.53	4.53
CMS Energy Corp	6.00	6.50	8.20	8.77	7.82	7.82
Consolidated Edison	2.50	4.00	2.00	4.93	3.64	3.64
Dominion Energy	1.00	5.50	5.80	6.42	5.91	5.91
DTE Energy Company	3.00	4.50	6.00	3.96	4.82	4.82
Duke Energy Company	2.00	5.00	5.50	5.47	5.32	5.32
Edison International	5.00	16.00	2.60	4.35	7.65	3.48
Entergy Corp.	5.00	4.00	6.00	6.19	5.40	5.40
Evergy Inc	7.00	7.50	5.30	3.60	5.47	5.47
Eversource Energy	6.50	6.50	6.50	5.74	6.25	6.25
Exelon Corporation	NA	NA	7.10	6.22	6.66	6.66
FirstEnergy Corp	2.50	3.00	6.40	-2.42	2.33	4.70
Fortis Inc.	6.00	5.00	5.30	3.54	4.61	4.61
IDACORP, Inc..	6.50	4.00	3.40	2.70	3.37	3.37
NextEra Energy, Inc.	10.00	10.50	9.70	9.35	9.85	9.85
NorthWestern Corp	2.00	3.50	1.70	4.50	3.23	3.23
OGE Energy Corp	3.00	6.50	5.00	1.90	4.47	4.47
Otter Tail Corp	7.00	4.50	NA	9.00	6.75	6.75
PPL Corporation	-5.50	3.00	NA	17.47	10.24	3.00
Pinnacle West Capital Corp	2.00	0.50	NA	0.10	0.30	0.30
Portland General Electric Co.	6.00	5.00	5.30	1.39	3.90	3.90
Public Service Enterprise Group	5.50	4.50	3.30	3.80	3.87	3.87
Southern Company	3.50	6.50	4.00	6.53	5.68	5.68
WEC Energy Group, Inc.	7.00	6.00	6.20	6.31	6.17	6.17
Xcel Energy Inc.	6.50	6.00	6.50	6.72	6.41	6.41
Group Average	4.41	5.48	5.58	5.43	5.52	5.22
USE						5.20
Sources:	Value Line Investment Survey January 17, 2023					
	Zacks, January 17, 2023 (www.zacks.com)					
	Yahoo!, January 17, 2023 (http://finance.yahoo.com/)					
	* NA signifies that a forecast was not available					

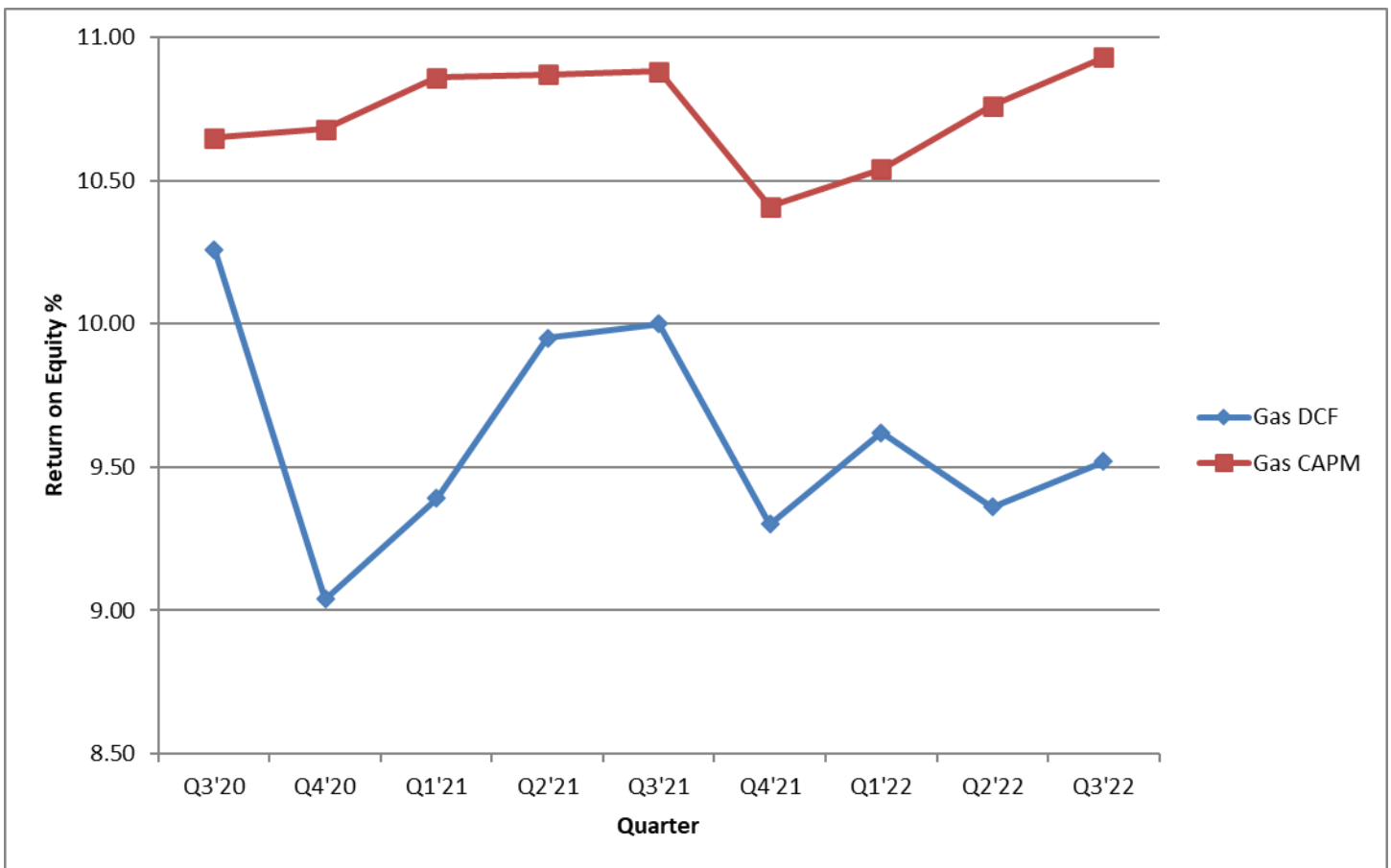
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity¹			
January 13, 2023			
<u>Gas Distribution Company Barometer Group</u>			
			Cost Rates
			<u>%</u>
(1)	Current DCF:		9.55
(2)	52-Week Average DCF:		<u>9.49</u>
(3)	Overall DCF ((1) + (2)) / 2 :		<u>9.52</u>
(4)	Market Indicated Common Equity Cost Rate Range: @ 1 standard deviation around the mean. ²		<u>8.34-10.70</u>
(5)	CAPM Check of DCF Reasonableness:		10.93
(6)	Recent Commission Approved ROEs ³ :		
	Columbia Gas of Pennsylvania, Inc. R-2020-3018835		9.86
	PECO Energy Company R-2020-3018929		10.24
(7)	Distribution System Improvement Charge (DSIC) Return ⁴ :		<u>10.15%</u>
¹ As calculated by the Bureau of Technical Utility Services			
² Standard Deviation of 16 DCF observations			
³ Base rate case ROEs within last two years, fully litigated or stipulated for DSIC			
⁴ Commission authorized Return on Equity (ROE) for DSIC purposes			
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.			

Historic Gas Industry DCF and CAPM Average ROEs

	Gas	
	DCF	CAPM
Q3'20	10.26	10.65
Q4'20	9.04	10.68
Q1'21	9.39	10.86
Q2'21	9.95	10.87
Q3'21	10.00	10.88
Q4'21	9.30	10.41
Q1'22	9.62	10.54
Q2'22	9.36	10.76
Q3'22	9.52	10.93

Graph of Historic Gas Industry DCF and CAPM Average ROEs



Barometer gas companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Gas Company Barometer Group					
Calculation of a Current Dividend Yield					
	Closing	Latest	Ind. Div.		
	Market	Indicated	Plus 1/2	Current	
	Price (Po)	Dividend	Div. Growth	Dividend	
	<u>1/13/2023</u>	<u>(Do)</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(%)	(%)
Atmos Energy	116.38	2.96	3.06	2.63	10.39
Chesapeake Utilities Corporation	122.79	2.14	2.23	1.82	9.07
New Jersey Resources	51.15	1.56	1.60	3.13	8.79
NiSource Inc.	27.90	0.94	0.96	3.44	10.99
Northwest Natural Gas	49.70	1.94	1.94	3.91	8.95
ONE Gas, Inc.	80.09	2.48	2.56	3.20	8.70
Southwest Gas	66.64	2.48	2.55	3.82	8.32
Spire Inc.	72.83	2.88	2.95	4.05	11.39
Group Average	73.44	2.17	2.23	3.25	9.57
Group Average G				6.30	
DCF				9.55	

Gas Company Barometer Group						
52-week Average Dividend Yield Calculation						
				Latest	Average	
				Indicated	Dividend	
	<u>High</u>	<u>Low</u>	<u>Average (Pa)</u>	<u>Dividend (Do)</u>	<u>Yield (Do/Pa)</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(\$)	(%)	(%)
Atmos Energy	122.96	97.71	110.34	2.96	2.68	10.44
Chesapeake Utilities Corporation	142.81	105.79	124.30	2.14	1.72	8.97
New Jersey Resources	51.54	37.79	44.67	1.56	3.49	9.16
NiSource Inc.	32.59	23.78	28.19	0.94	3.34	10.89
Northwest Natural Gas	57.63	42.37	50.00	1.94	3.88	8.91
ONE Gas, Inc.	92.26	68.86	80.56	2.48	3.08	8.58
Southwest Gas	95.62	59.51	77.57	2.48	3.20	7.70
Spire Inc.	79.24	61.52	70.38	2.88	4.09	11.43
Group Average	84.33	62.17	73.25	2.17	3.19	9.51
Group Average G					6.30	
DCF					9.49	
					9.52	

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Gas Companies						
<u>5 Yr Forecast</u>						
	Value Line	Value Line	Zack's	Yahoo	Average Earnings	Growth
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>Growth</u>	<u>Estimate</u>
	(%)	(%)	(%)	(%)	(%)	(%)
Atmos Energy	7.00	7.50	7.50	8.26	7.75	7.75
Chesapeake Utilities Corporation	8.50	7.50	NA	7.00	7.25	7.25
New Jersey Resources	5.00	5.00	6.00	6.00	5.67	5.67
NiSource Inc.	4.50	9.50	6.80	6.35	7.55	7.55
Northwest Natural Gas	0.50	6.50	4.30	4.30	5.03	5.03
ONE Gas, Inc.	6.50	6.50	5.00	5.00	5.50	5.50
Southwest Gas	5.50	10.00	5.00	4.00	6.33	4.50
Spire Inc.	5.00	9.00	5.00	8.00	7.33	7.33
Group Average	5.31	7.69	5.66	6.11	6.55	6.32
USE						6.30
Sources:	Value Line Investment Survey January 17, 2023					
	Zacks, January 17, 2023 (www.zacks.com)					
	Yahoo!, January 17, 2023 (http://finance.yahoo.com/)					
	* NA signifies that a forecast was not available					

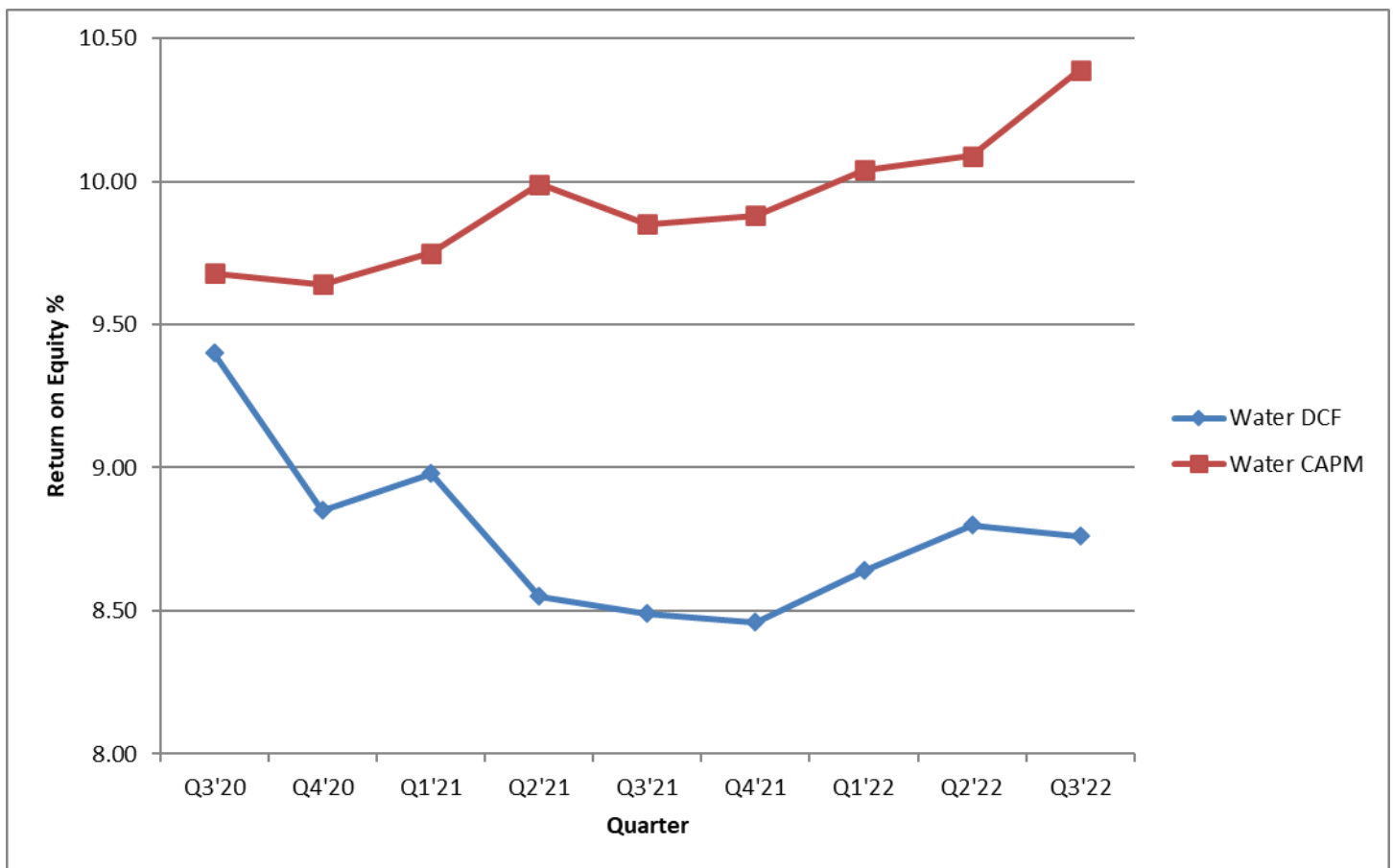
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity ¹			
January 13, 2023			
<u>Water Company Barometer Group</u>			
			Cost Rates
			<u>%</u>
(1)	Current DCF		8.73
(2)	52-Week Average DCF		8.79
(3)	Average DCF		<u>8.76</u>
(4)	Market Indicated Common Equity Cost Rate Range		<u>6.31-11.20</u>
	@ 1 standard deviation around the mean. ²		
(5)	CAPM Check of DCF Reasonableness		10.39
(6)	Recent Commission Approved ROEs ³ :		10.00*
	*Aqua Pennsylvania, Inc., R-2021-3027385, includes a 0.25% management effectiveness adjustment		
(7)	Distribution System Improvement Charge (DSIC) Return ⁴ :		<u>9.75%</u>
¹ As calculated by the Bureau of Technical Utility Services ² Standard Deviation of 12 DCF observations ³ ROEs from base rate cases within last two years, fully litigated or stipulated for DSIC purposes ⁴ Commission authorized Return on Equity (ROE) for DSIC purposes			
Any questions concerning DSIC should be directed to Marc Hoffer of the Bureau of Technical Utility Services at (717) 787-1869.			

Historic Water Industry DCF and CAPM Average ROEs

Water		
	DCF	CAPM
Q3'20	9.40	9.68
Q4'20	8.85	9.64
Q1'21	8.98	9.75
Q2'21	8.55	9.99
Q3'21	8.49	9.85
Q4'21	8.46	9.88
Q1'22	8.64	10.04
Q2'22	8.80	10.09
Q3'22	8.76	10.39

Chart of Historic Water Industry DCF and CAPM Average ROEs



Barometer water companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52-week average DCF. A final average of the two calculations is also shown at the bottom.

Water Company Barometer Group						
Calculation of a Current Dividend Yield						
	Closing Market Price (Po)	Latest Indicated Dividend (Do)	Ind. Div. Plus 1/2 Div. Growth Rate (D1)	Current Dividend Yield(D1/Po)	Growth	DCF
	1/13/2023	(Do)	Rate (D1)	Yield(D1/Po)	Growth	DCF
	(\$)	(\$)	(\$)	(%)	(%)	(%)
American States Water Company	95.26	1.59	1.66	1.74	4.95	6.69
American Water Works Co., Inc.	159.42	2.62	2.73	1.71	6.46	8.17
California Water Service Group	62.28	1.00	1.03	1.66	9.10	10.76
Essential Utilities, Inc.	48.99	1.15	1.20	2.44	7.57	10.01
Middlesex Water Company	81.33	1.25	1.28	1.58	3.60	5.18
SJW Group	80.03	1.44	1.48	1.85	9.80	11.65
Group Average	87.89	1.51	1.56	1.83	6.91	8.74
Group Average G				6.90		
DCF				8.73		

52-week High-Low Dividend Yield Calculation							
	High	Low	Average (Pa)	Latest Indicated Dividend (Do)	Average Dividend Yield (Do/Pa)	Growth	DCF
	(\$)	(\$)	(\$)	(\$)	(%)	(%)	(%)
American States Water Company	100.51	71.22	85.87	1.59	1.85	4.95	6.80
American Water Works Co., Inc.	173.87	122.77	148.32	2.62	1.77	6.46	8.23
California Water Service Group	66.12	48.46	57.29	1.00	1.75	9.10	10.85
Essential Utilities, Inc.	52.62	38.50	45.56	1.15	2.52	7.57	10.09
Middlesex Water Company	109.51	74.20	91.86	1.25	1.36	3.60	4.96
SJW Group	83.88	55.74	69.81	1.44	2.06	9.80	11.86
Group Average	97.75	68.48	83.12	1.51	1.89	6.91	8.80
Group Average G					6.90		
DCF					8.79		
Average of Current and 52-Week					8.76		

Multiple sources of the Barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Water Companies						
	5 Yr Forecast				Average Earnings Growth	Growth Estimate
	Value Line DPS (%)	Value Line EPS (%)	Zacks EPS (%)	Yahoo EPS (%)		
American States Water Company	9.00	5.50	NA	4.40	4.95	4.95
American Water Works Co., Inc.	8.50	3.00	8.10	8.28	6.46	6.46
California Water Service Group	6.50	6.50	NA	11.70	9.10	9.10
Essential Utilities, Inc.	8.00	10.00	6.10	6.60	7.57	7.57
Middlesex Water Company	5.00	4.50	NA	2.70	3.60	3.60
SJW Group	5.50	14.00	NA	9.80	11.90	9.80
Group Average	7.08	7.25	7.10	7.25	7.26	6.91
USE						6.90
Sources:	Value Line Investment Survey January 17, 2023					
	Zacks, January 17, 2023 (www.zacks.com)					
	Yahoo!, January 17, 2023 (http://finance.yahoo.com/)					
	* NA signifies that a forecast was not available					

File in the binder in order of issue number, removing previous issue bearing the same number.



THE VALUE LINE

Investment Survey®

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ESPECIALLY NOTEWORTHY:

Aerojet Rocketdyne recently inked an agreement to be acquired by L3Harris Technologies. This comes on the heels of an earlier offer from Lockheed Martin and an ensuing boardroom battle. Turn to page 1743 to learn more on the current deal.

The acquisition of **Black Knight** by **Intercontinental Exchange** still has a long way to go until it crosses the finish line. More details are available on pages 1804 and 1789.

Rogers Communications is still awaiting approval of its C\$26 billion purchase of Shaw Communications. Canada's antitrust regulators have stated that they are undecided on whether or not to approve the deal and they will not disclose a timetable for their decision. Learn more on page 1768.

The **Goldman Sachs Group** has been struggling amidst a difficult operating environment. Nevertheless, things may start to improve in the current year, and the issue still offers good investment appeal. Read our take on page 1795.

Altra Industrial Motion recently agreed to be acquired by **Regal Rexnord Corp.** The board of directors has approved the deal, which is slated to close in the first half of this year. More on the proposed transaction is available on pages 1705 and 1730.

Coupe Software has agreed to be acquired by private equity firm **Thoma Bravo** in an all-cash transaction. Details on page 1806.

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★★ Rank 1 (Highest) for Timeliness.
★ Rank 2 (Above Average).

In three parts: Part 1 is the Summary & Index. Part 2 is Selection & Opinion. This is Part 3, Ratings & Reports. Volume LXXVIII, No. 22

Published weekly by VALUE LINE PUBLISHING LLC, 551 Fifth Avenue, New York, NY 10176.

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January 6, 2023

WATER UTILITY INDUSTRY

1778

INDUSTRY TIMELINESS: 64 (of 93)

The Water Utility Industry consists of six investor-owned companies that provide water services to residential, commercial, and industrial customers. The group is extremely small because most of the water utilities in the United States are run by states and local municipalities. The fundamentals in this industry do not change quickly. Change comes incrementally here, which can be both good and bad. Almost every water utility in the country is playing catch up. For years, the nation's pipelines and wastewater facilities had been falling into disrepair. Over the past decade, or so, the industry has been investing heavily to replace these older assets.

All utilities are overseen by some state authority that decides on what rates water users will ultimately pay. Fortunately, the relations between the industry and regulators has been very constructive in the recent past. These relationships may be tested in the coming years because of inflation.

Earnings in the Water Industry are well defined. The demand for water is mostly inelastic, except for when rates are raised meaningfully during a drought or water emergency to dampen demand. Almost all of these stocks score well for Price Stability, Price Growth Persistence, and Earnings Predictability.

In the past three months, the equities in this group have outperformed the market averages.

Fundamentals

Members of this group are all in the midst of large ongoing construction programs that ought to take decades to complete. For years, insufficient capital was allocated to upgrading and modernizing the country's water infrastructure. Indeed, the average age of many pipelines is now between 60 and 75 years. As a result, in an era in which water has become scarcer, a large volume of it was leaking and being wasted due to a shoddy transmission system. Both the utilities and regulators are to blame for the predicament because neither party wanted to receive backlash from raising customers' bills to make the required improvements. In any case, the industry has taken steps to correct this situation. Instead of one massive spending program, the outlays will be made gradually.

Mediocre Finances

To fund the building projects, most utilities have to depend, in part, on external financing. Over the past 15 years, we have been in a low interest rate environment and debt was the preferred source of financing. With interest rates for long-maturity corporate bonds spiking higher, there is a chance that this could change. Many water utilities have been reluctant to issue equity in the past. Since the industry's stocks are now trading with historically high P/E ratios (more below), we think now would be a good time to sell shares. For example, eleven years ago, *American Water Works* had 175.66 million shares outstanding. When 2022 ended, we estimated the figure rose to just 182 million, a meager annual growth rate of 0.3%. (The company hasn't had any kind of stock repurchase program.) Over that same time, *American Water's* long-term debt-to total capital ratio has increased. While this is not a weak balance sheet, it can't be classified as strong either. This also applies to most

water utilities.

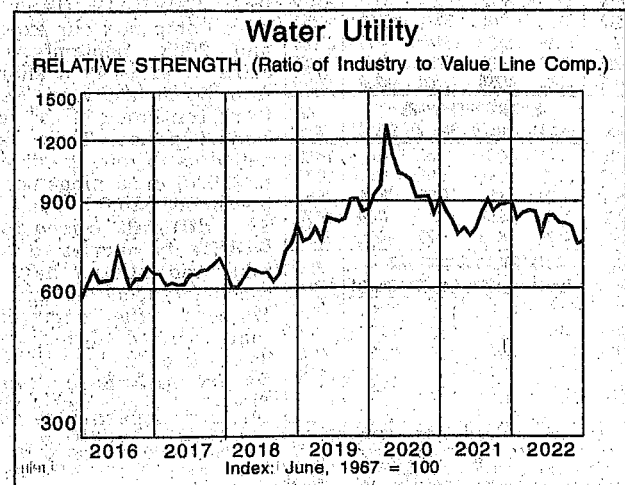
Scarcity Of Stocks

The total market capitalization of the Water Utility Industry is about \$51 billion, or slightly below that of Dominion Energy, the nation's fourth largest electric utility. Moreover *American Water Works* accounts for over 54% of the total. Thus, in the group there are only two large cap stocks. (The other *Essential Utilities*.) That leaves 4 companies that have market caps ranging from \$2.5 billion to \$3.4 billion. The demand to own shares by the large institutional investors clearly outstrips the supply. This is one of the prime reasons for these stocks trading at such seemingly inflated P/E ratios. Of the six water stocks covered by *Value Line*, the P/E's range from a low of 24.8, to a high of 38.8, with the average being 32.4. *Essential Utilities* is the only equity with a P/E below 30, mostly because of its gas utility operations.

Conclusion

Should investors want to become involved in this sector, they must be willing to pay a huge premium. While this sector has several positive attributes, it also has a severe limitations. For one, the returns on equity are determined by an outside entity. Thus, there is a ceiling to each company's profit potential. Furthermore, regulators can be fickle. The water industry has enjoyed positive relations with regulators over the past decade or so, but that was during a time of very low inflation. Passing along the rate hikes needed to finance the replacement of old pipes will likely remain above the level of inflation, which is currently over 6%. State regulatory commissions are under political pressure to keep ratepayers' bills low. So, even though a utility may have spent funds prudently, that does not necessarily mean that regulators will allow a fair return to be made on the investment. In the electric utility sector this has happened frequently, mainly due to a backlash from the public. Regulators are appointed by politicians. Elected officials do not gain popular support (i.e. votes) by raising utility bills. In our opinion, Wall Street has not taken this into account, as it certainly is not reflected in the price of the stocks. As always, we urge investors to read each individual report before investing.

James A. Flood



Appendix A-5.1 (WAD)

AMER. STATES WATER			NYSE-AWR	RECENT PRICE	P/E RATIO	TRAILING (33.3)	MEDIAN (27.0)	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE	1779										
TIMELINESS 3 Raised 12/16/22	SAFETY 2 Raised 7/20/12	TECHNICAL 1 Raised 12/30/22	BETA: .85 (1.00 = Market)	High: 18.2 Low: 15.3	24.1 17.0	33.1 24.0	38.7 27.0	44.1 35.8	47.2 37.3	58.4 41.1	69.6 50.1	96.0 63.3	96.6 65.1	103.8 70.1	103.4 71.2	Target Price Range 2025 2026 2027					
18-Month Target Price Range												128									
2025-27 PROJECTIONS												96									
Price Gain Return												80									
High 95 (NIH) 2%												64									
Low 70 (-25%) -4%												48									
Institutional Decisions												32									
1Q2022	2Q2022	3Q2022	Percent shares traded													24					
to Buy	153	128	133													16					
to Sell	121	150	124													8					
Hld's (000)	27827	26629	27450													8					
MARKET CAP: \$3.4 billion (Mid Cap)												16									
CURRENT POSITION												12									
			2020	2021	9/30/22																
Cash Assets	36.7		5.0	2.3																	
Accts Receivable	29.2		34.4	31.8																	
Other	91.2		98.7	104.7																	
Current Assets	157.1		138.1	138.8																	
Accts Payable	63.8		65.9	70.0																	
Debt Due	4.4		31.4	238.9																	
Other	54.4		58.3	64.3																	
Current Liab.	118.6		155.6	373.2																	
ANNUAL RATES												96									
Past 10 Yrs. Past 5 Yrs. Est'd '19-'21 to '25-'27												80									
Revenues	2.5%			1.5%			5.5%						64								
Cash Flow	5.5%			4.5%			5.5%						48								
Earnings	9.0%			8.5%			5.5%						32								
Dividends	9.5%			8.0%			9.0%						24								
Book Value	5.5%			6.0%			5.5%						16								
Quarterly Revenues (\$ mill.)												12									
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																
2019	101.7	124.7	134.5	113.0	473.9																
2020	109.1	121.3	133.6	124.2	488.2																
2021	117.1	128.4	136.8	116.6	498.9																
2022	108.6	122.6	135.0	143.8	510																
2023	112	130	145	138	525																
Earnings Per Share												96									
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																
2019	.35	.72	.76	.45	2.28																
2020	.38	.69	.72	.54	2.33																
2021	.52	.72	.76	.55	2.55																
2022	.38	.54	.59	.49	2.10																
2023	.67	.88	.75	.55	2.85																
Quarterly Dividends Paid												80									
Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																
2018	.255	.255	.275	.275	1.06																
2019	.275	.275	.305	.305	1.16																
2020	.305	.305	.335	.335	1.28																
2021	.335	.335	.365	.365	1.40																
2022	.365	.365	.3975	.3975																	
Capital Structure as of 9/30/22												64									
Total Debt	\$685.7 mill.			Due in 5 Yrs	\$33.5 mill.		466.9	472.1	465.8	458.6	436.1	440.6	436.8	473.9	486.2	498.9	510	525	Revenues (\$mill)	680	
LT Debt	\$446.8 mill.			LT Interest	\$24.0 mill.		54.1	62.7	61.1	60.5	59.7	69.4	63.9	84.3	86.4	94.3	76.0	105	Net Profit (\$mill)	120	
								39.9%	36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	24.4%	24.0%	24.0%	Income Tax Rate	24.0%
								2.5%								2.5%		1.0%	1.5%	AFUDC % to Net Profit	1.5%
Leases, Uncapitalized: Annual rentals \$2.6 mill.												48									
Pension Assets-12/21 \$233.5 mill.												32									
Oblig. \$259.8 mill.												24									
Pfd Stock None												16									
Common Stock 36,390,897 shs. as of 11/4/22												8									
MARKET CAP: \$3.4 billion (Mid Cap)												8									
CURRENT POSITION												8									
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2021	.335	.335	.365	.365	1.40																
2022	.365	.365	.3975	.3975																	

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 262,770 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,656 customers in Big Bear Lake and San Bernardino City, Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 808. BlackRock, Inc. owns 17.7% of out. shares; State St., 13.7%, off. & dir., 0.9% (4/22 Proxy); Chairman: Lloyd Ross. Pres. & CEO: Robert Sprrows, Inc. CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel.: 909-394-3600. Internet: www.aswater.com.

American States Water's bottom line continues to be hurt by a delay in a regulatory ruling. For the third-straight quarter, the water utility posted negative year-over-year earnings comparisons. This can be attributed to the California Public Utility Commission (CPUC) not having decided upon a request for higher rates. The company's subsidiary, Golden States Water, filed for the increase in tariffs in 2020. Indeed, the utility reached an agreement on what hikes water users would receive with the state's Public Advocates Office (POA). Typically, reaching a deal with the POA is the hardest part of the negotiations. In any case, without the new rates, we think American State's profits slumped again in the December interim, and its 2022 share net declined 18%, to \$2.10. **In 2023, we think the company may achieve record profits.** When the CPUC finally makes a ruling, Golden States will receive the hike retroactively to January 1, 2021. So, these revenues ought to be recognized this year. This should lead to share earnings climbing to \$2.85, or 26% above last year's expected poor showing. **Nonutility operations could be a catalyst for earnings growth.** Internet: www.aswater.com. ASUS is an unregulated business segment that provides water services to United States military installations. The army is in the process of privatizing its water and waste systems to outside entities. Requests for proposals for 50-year contracts are being made public for bidders. ASUS has been successful in winning a fare share of these, and we expect that to continue. Because the business isn't under the jurisdiction of regulators, it offers the capability of earning much higher returns on investment. It also carries more risk. Through the first nine months of 2022, ASUS was responsible for 17% of the company's net income. **These shares offer very little appeal, at this juncture.** The stock is ranked (3: Average) for relative year-ahead performance. Moreover, capital appreciation potential over the next 18-month period is unattractive. And, over the pull to 2025-2027, despite good dividend growth prospects, AWR's total return potential is well below the Value Line median. In fact, the equity is trading near the top of our Target Price Range.

James A. Flood January 6, 2023

(A) Primary earnings. Excludes nonrecurring gains/losses; '06, 3c; '08, (14c); '10, (23c); '11, 10c. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. = Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes Intangibles. As of 12/31/21; \$1.1 million/\$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	80
Earnings Predictability	95

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AMERICAN WATER NYSE-AWK			RECENT PRICE 153.02		P/E RATIO 33.6 (Trailing: 24.5; Median: 25.0)		RELATIVE P/E RATIO 2.05		DIV'D YLD 1.8%		VALUE LINE 1780																																																																																																																																																																																																																													
TIMELINESS 3 Lowered 11/11/22	High: 32.8	39.4	45.1	56.2	61.2	85.2	92.4	98.2	129.9	172.6	189.6	189.3																																																																																																																																																																																																																												
SAFETY 3 New 7/25/08	Low: 25.2	31.3	37.0	41.1	48.4	58.9	70.0	76.0	88.0	92.0	131.0	122.8																																																																																																																																																																																																																												
TECHNICAL 4 Raised 1/8/23	LEGENDS 1700% Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																																																																																																																																																																																																																																							
BETA .90 (1.00 = Market)	18-Month Target Price Range Low-High Midpoint (% to Mid) \$124-\$251 \$188 (25%)																																																																																																																																																																																																																																							
2025-27 PROJECTIONS <table border="1"> <tr> <th>High</th> <th>Price</th> <th>Gain</th> <th>Ann'l Total</th> </tr> <tr> <td>185</td> <td>125</td> <td>(-20%)</td> <td>7%</td> </tr> <tr> <td>Low:</td> <td>125</td> <td>(-20%)</td> <td>-2%</td> </tr> </table>													High	Price	Gain	Ann'l Total	185	125	(-20%)	7%	Low:	125	(-20%)	-2%																																																																																																																																																																																																																
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BUSINESS: American Water Works Company, Inc. is the largest investor-owned water and wastewater utility in the U.S., providing services to approximately 14 million people in 24 states. Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86% of 2021 revenues. Pennsylvania is its largest market accounting for 21.5% of regulated revenues; New Jersey, 20.3%; Missouri, 13.9%. Has 6,400 employees. Vanguard owns 11.8% of outstanding shares; BlackRock, 8.9%; State St., 5.4%; officers & directors, less than 1.0% (4/22 Proxy). President & CEO: Susan N. Story. Chairman: George MacKenzie. Address: 1 Water Street, Camden, NJ 08102. Tel.: 856-346-8200. Internet: www.amwater.com.																																																																																																																																																																																																																																								
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<table border="1"> <thead> <tr> <th>Calendar</th> <th colspan="4">QUARTERLY DIVIDENDS PAID ^</th> <th>Full Year</th> </tr> <tr> <th></th> <th>Mar.31</th> <th>Jun.30</th> <th>Sep.30</th> <th>Dec.31</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>.415</td> <td>.455</td> <td>.455</td> <td>.455</td> <td>1.78</td> </tr> <tr> <td>2019</td> <td>.455</td> <td>.50</td> <td>.50</td> <td>.50</td> <td>1.96</td> </tr> <tr> <td>2020</td> <td>.50</td> <td>.55</td> <td>.55</td> <td>.55</td> <td>2.16</td> </tr> <tr> <td>2021</td> <td>.55</td> <td>.6025</td> <td>.6025</td> <td>.6025</td> <td>2.36</td> </tr> <tr> <td>2022</td> <td>.6025</td> <td>.655</td> <td>.655</td> <td>.655</td> <td></td> </tr> </tbody> </table>													Calendar	QUARTERLY DIVIDENDS PAID ^				Full Year		Mar.31	Jun.30	Sep.30	Dec.31	Year	2018	.415	.455	.455	.455	1.78	2019	.455	.50	.50	.50	1.96	2020	.50	.55	.55	.55	2.16	2021	.55	.6025	.6025	.6025	2.36	2022	.6025	.655	.655	.655																																																																																																																																																																																			
Calendar	QUARTERLY DIVIDENDS PAID ^				Full Year																																																																																																																																																																																																																																			
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2019	.455	.50	.50	.50	1.96																																																																																																																																																																																																																																			
2020	.50	.55	.55	.55	2.16																																																																																																																																																																																																																																			
2021	.55	.6025	.6025	.6025	2.36																																																																																																																																																																																																																																			
2022	.6025	.655	.655	.655																																																																																																																																																																																																																																				
<p>key to the company's long-term growth. There are thousands of small municipally run water districts in the United States. American Water Works has been gradually buying some of these and integrating them into its existing operations. In the water utility industry, mergers do produce major improvements in margins. They also add to the company's net plant, on which it earns a return. External financing will be required. To fund its ambitious building and takeover program, American Water will have to issue new debt. The long-term debt-to-total capital is nearing 60%, but the utility remains financially sound due to its solid and predictable cash flow. We think all of the company's positive attributes are reflected in the recent stock quote. The equity has performed well since our last report. As a result, it has below-average return potential over the next three- to five-year period. Indeed, the shares are trading within our estimated Target Price Range. Moreover, AWK is only expected to track the market averages in the year ahead.</p> <p>James A. Flood January 6, 2023</p>																																																																																																																																																																																																																																								
<p>Capital expenditures ought to be enormous. Management expects to spend a total of \$14 billion to \$15 billion from 2023 to 2027 on upgrading, expanding, and replacing its aging pipelines and wastewater facilities. The acquisition strategy will remain a</p>																																																																																																																																																																																																																																								
<p>(A) Diluted earnings. Excludes nonrecurring losses: '08, \$4.62; '09, \$2.63; '11, \$0.07. Disc. oper.: '06, (\$0.04); '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of 2014. Includes \$2.70 sh. gain from sale of HOS sub.in Q4 '21. Next earnings report due mid-February. (B) Dividends paid in March, June, September, and December. ^ Div. reinvestment available. (C) In millions. (D) Includes intangibles. On 12/31/21: \$1,231 billion, \$6.67/share. (E) Pro forma numbers for '06 & '07.</p>																																																																																																																																																																																																																																								
<p>© 2022 Value Line, Inc. All rights reserved. Factual material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.</p>																																																																																																																																																																																																																																								
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Appendix A-5.1 (WAD)

CALIFORNIA WATER NYSE-CWT		RECENT PRICE	61.78	P/E RATIO	32.2	Trailing: 41.7 Median: 27.0	RELATIVE P/E RATIO	1.96	DIV'D YLD.	1.6%	VALUE LINE	1781					
TIMELINESS 3 Raised 10/28/22	High: 19.4	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4	72.1	72.0					
SAFETY 3 Lowered 7/27/07	Low: 16.7	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7	51.0	48.5					
TECHNICAL 2 Raised 12/30/22	LEGENDS 50.00 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split 6/11 Options: Yes Shaded area indicates recession																
BETA .70 (1.00 = Market)	18-Month Target Price Range Low-High Midpoint (% to Mid) \$51-\$95 \$73 (20%)																
2025-27 PROJECTIONS High Price Ann'l Total Low 75 50 (+20%) (-20%) 7% 3%																	
Institutional Decisions 10/20/22 12/20/22 3/20/22 to Buy 162 121 140 to Sell 127 141 102 Hld's(000) 43279 43653 43549 Percent shares traded 18 12 6																	
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023																	
8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.70	13.89	14.53	14.72	15.78	14.72	15.45	16.70
1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.34	3.00	3.11	3.14	3.88	3.91	3.10	3.65
.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	1.96	1.65	2.15
.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	.92	1.00	1.08
2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	4.77	5.40	5.65	5.64	5.93	5.46	5.85	6.00
9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.75	14.44	15.19	16.07	18.30	21.92	23.45	24.55
41.31	41.33	41.45	41.53	41.67	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	53.72	54.75	53.00	50.00
29.2	26.1	19.8	19.7	20.3	21.3	17.9	20.1	19.7	24.8	29.6	26.9	30.3	39.3	24.9	30.5	35.4	35.4
1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.25	1.55	1.35	1.64	2.09	1.28	1.67	2.02	2.02
2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%	2.3%	1.9%	1.8%	1.5%	1.7%	1.5%	1.7%	1.7%
CAPITAL STRUCTURE as of 9/30/22 Total Debt \$1,297.7 mill. Due in 5 Yrs \$357.0 mill. LT Debt \$1,053.9 mill. LT Interest \$40.0 mill. (Total interest coverage: 7.8x) (47% of Cap'l)																	
Pension Assets 12/21 \$810.5 mill. Oblig. \$887.5 mill.																	
Prd Stock None																	
Common Stock 54,824,000 shs.																	
MARKET CAP: \$3.4 billion (Mid Cap)																	
CURRENT POSITION 2020 2021 9/30/22 (\$MILL) Cash Assets 44.6 78.4 90.5 Other 22.1 222.1 248.7 Current Assets 266.0 300.5 339.2 Accts Payable 131.7 144.4 157.9 Debt Due 375.1 40.2 75.8 Other 81.9 72.0 88.8 Current Liab. 588.7 256.6 322.5																	
ANNUAL RATES of change (per sh) Past 10 Yrs Past 5 Yrs Est'd '19-'21 to '25-'27 Revenues 3.0% 4.0% 3.5% Cash Flow 6.5% 9.0% 2.0% Earnings 6.5% 11.0% 6.5% Dividends 3.5% 5.0% 6.5% Book Value 8.0% 7.0% 6.5%																	
QUARTERLY REVENUES (\$ mill.) Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2019 126.1 179.0 232.6 176.9 714.6 2020 125.6 175.5 304.1 189.1 794.3 2021 147.7 213.1 256.7 173.4 790.9 2022 173.0 206.2 266.3 199.5 845.0 2023 180 220 280 205 885																	
EARNINGS PER SHARE Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2019 0.16 .35 .68 .24 1.31 2020 0.42 .11 1.94 .31 1.97 2021 0.06 .75 1.20 .07 1.96 2022 .02 .36 1.03 .24 1.65 2023 .10 .55 1.15 .35 2.15																	
QUARTERLY DIVIDENDS PAID Cal-endar Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 .1875 .1875 .1875 .1875 .75 2019 .1975 .1975 .1975 .1975 .79 2020 .2125 .2125 .2125 .2125 .85 2021 .230 .230 .230 .230 .92 2022 .250 .250 .250 .250																	
BUSINESS: California Water Service Group provides regulated and nonregulated water service to 494,500 customers in 100 communities in the state of California. Accounts for about 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp., West Hawaii Utilities (9/08). Revenue breakdown: 21 residential, 69% business, 19% industrial, 3% public authorities, 5% other. Off- and dir. own 1% of common stock (4/22 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki, Inc., DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-9200. Internet: www.calwatergroup.com.																	
California Water Service Group recently tabbed a few acquisitions. In November, the predominately West Coast water utility operator completed the purchase of Driftwood Valley Association's water system assets in Washington, which is expected to add up to 100 customers to its roster. In addition, California Water finalized its acquisition of Hawaii-based Keauhou Community Services' wastewater system assets subsequent to the deal being rubberstamped by regulators. Lastly, California regulators recently approved the company's application to acquire the King's Mountain water system, which services 23 residential water connections. A number of headwinds are still pressuring the bottom line, but should start to subside from here. California Water posted earnings of \$1.03 per share in the September period, down 14% from the previous-year figure, partly due to higher water production costs and administrative and general operating expenses. Unfavorable benefit plan investment valuations also weighed on the figure. Looking forward, management appears keen on controlling operating expenses, <i>Nicholas Patrikis</i>																	
and cumulative rate hikes ought to support recovering operating margins. On balance, our model suggests that share earnings are slated to dip to \$1.65 this year, before rebounding to \$2.15 in 2023. The long-term picture holds several bright spots. First, modest annual revenue expansion ought to be underpinned by periodic customer rate hikes, assuming limited hiccups on the approval front from the California Public Utilities Commission. These potential price increases are likely to be prompted by accelerating infrastructure-related spending by California Water in an effort to maintain and upgrade deteriorating water delivery systems, pipelines, and treatment plants. To note, the company is eligible to recoup qualifying costs associated with infrastructure upgrades via approved rate hikes. Finally, an improved economic backdrop augurs well for customer water usage. But from an investment standpoint, the stock leaves much to be desired at the recent quotation. Neutrally ranked CWT shares offer limited price upside three to five years hence. <i>January 6, 2023</i>																	
Company's Financial Strength B++ Stock's Price Stability 95 Price Growth Persistence 90 Earnings Predictability 50																	

ESSENTIAL UTIL. NYSE-WTRG				RECENT PRICE	P/E RATIO	Trailing: 25.4 Median: 25.0	RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE						
				47.57	24.8		1.51	2.5%	1782						
TIMELINESS 4 Lowered 12/9/22	High: 19.0	21.5	28.1	28.2	31.1	35.8	39.6	39.4	47.3	54.5	53.9	53.7	Target Price Range		
SAFETY 3 Lowered 1/8/21	Low: 15.4	16.8	20.6	22.4	24.4	28.0	29.4	32.1	32.7	30.4	41.1	38.5	2025	2026	2027
TECHNICAL 4 Raised 12/16/22	LEGENDS --- 17.50 x Dividends p sh divided by Interest Rate Relative Price Strength 5-for-4 split: 9/13 Options: Yes Shaded area indicates recession														
BETA .95 (1.00 = Market)	18-Month Target Price Range Low-High Midpoint (% to Mid) \$41-\$76 \$59 (25%)														
2025-27 PROJECTIONS Price Gain Ann'l Total High Low 70 (+45%) 12% Low 45 (-5%) 2%															
Institutional Decisions to Buy 292 277 301 to Sell 246 249 222 Hlds(000) 181504 183099 184561 Percent shares traded 15 10 5															
2006-2023 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 3.23 3.61 3.71 3.93 4.21 4.10 4.32 4.32 4.37 4.61 4.62 4.56 4.71 4.03 5.96 7.43 8.20 8.20 1.01 1.10 1.14 1.29 1.42 1.45 1.51 1.82 1.89 1.87 2.07 2.12 1.90 1.73 2.21 2.89 3.05 3.20 .56 .57 .58 .62 .72 .83 .87 1.16 1.20 1.14 1.32 1.35 1.08 1.04 1.12 1.67 1.80 1.95 .35 .38 .41 .44 .47 .50 .54 .58 .63 .69 .74 .79 .85 .91 .97 1.04 1.11 1.20 1.64 1.43 1.58 1.66 1.89 1.90 1.98 1.73 1.84 2.07 2.16 2.69 2.78 2.49 3.41 4.04 3.75 3.85 5.57 5.85 6.26 6.50 6.81 7.21 7.90 8.63 9.27 9.78 10.43 11.02 11.28 17.58 19.09 20.50 20.80 21.75 165.41 166.75 169.21 170.81 172.46 173.60 175.43 177.93 178.59 176.54 177.39 177.71 178.09 220.76 245.39 252.87 263.00 268.00 34.7 32.0 24.9 23.1 21.1 21.3 21.9 21.2 20.8 23.5 23.9 24.7 32.6 39.1 39.6 28.3 26.2 1.87 1.70 1.50 1.54 1.34 1.34 1.39 1.19 1.09 1.18 1.25 1.24 1.76 2.08 2.03 1.55 1.60 1.8% 2.1% 2.8% 3.1% 3.1% 2.8% 2.8% 2.4% 2.5% 2.8% 2.3% 2.4% 2.4% 2.2% 2.2% 2.2% 2.4%															
CAPITAL STRUCTURE as of 9/30/22 Total Debt \$6536.8 mill.; Due in 5 Yrs \$882.1 mill. LT Debt \$6173.6 mill.; LT Interest \$230.0 mill. (54% of Cap'l)															
Pension Assets-12/21 \$433.1 mill. Oblig. \$452.9 mill.															
Pfd Stock None Common Stock 262,280,857 shares as of 10/21/22															
MARKET CAP: \$12.5 billion (Large Cap)															
CURRENT POSITION (SMILL) 2020 2021 9/30/22 Cash Assets 4.8 10.6 23.4 Receivables 154.8 141.0 119.8 Inventory (AvgCst) 58.4 109.6 229.7 Other 162.2 176.6 168.5 Current Assets 380.2 437.8 541.4 Accts Payable 177.5 192.9 217.6 Debt Due 162.6 197.1 363.2 Other 263.8 285.1 267.3 Current Liab. 603.9 675.1 848.1															
ANNUAL RATES Past Past Est'd '19-'21 of change (per sh) 10 Yrs 5 Yrs 10/25-'27 Revenues 3.5% 5.0% 7.5% "Cash Flow" 5.0% 3.0% 10.0% Earnings 6.0% 1.0% 10.0% Dividends 7.5% 7.0% 8.0% Book Value 11.0% 14.0% 6.0%															
QUARTERLY REVENUES (\$ mill.) Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2019 201.1 218.9 243.6 226.1 889.7 2020 255.6 384.5 348.6 474.0 1462.7 2021 583.5 397.0 361.9 535.7 1878.1 2022 699.3 448.8 434.6 572.3 2155 2023 690 475 440 595 2200															
EARNINGS PER SHARE ^ Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2019 .09 .25 .38 .28 1.04 2020 .21 .29 .22 .40 1.12 2021 .72 .32 .19 .44 1.67 2022 .76 .31 .26 .47 1.80 2023 .81 .38 .28 .48 1.95															
QUARTERLY DIVIDENDS PAID ^ Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year 2018 .2047 .2047 .219 .219 .85 2019 .219 .219 .2343 .2343 .91 2020 .2343 .2343 .2507 .2507 .97 2021 .2507 .2507 .2682 .2682 1.04 2022 .2682 .2682 .287 .287															
BUSINESS: Essential Utilities, Inc. became the new name for Aqua America on Feb. 3, 2020, to reflect the acquisition of Peoples, a natural gas utility, which occurred in 3/20. In 2021, Aqua Amer. provided water and wastewater services to about 5 million people in PA, OH, TX, IL, NC, NJ, IN, VA, NS, WS. Employs 3,211. Acquired AquaSource, 7/13; N. Maine Util., 7/15; and others. Water respn. for 52% of revenues in 2021; residential, 30%; commercial, 8.0%; Industrial, wastewater & other, 14%. Gas 46%; other, 2.0%. Off. & dir. own less than 1% of the common stock; BlackRock, 10.6%; Vanguard, 9.7%; Can. Pen. Plan 8.6% (3/22 proxy). Pres. & CEO: Christopher Franklin, Inc.; PA Addr.: 762 W Lancaster Ave., Bryn Mawr, PA 19010. Tel.: 610-525-1400; Int.: www.essential.co.															
Essential Utilities probably closed out 2022 on a positive note. In the third quarter, the water and natural gas utility posted share earnings of \$0.26, much higher than the depressed year-earlier figure and our \$0.22 estimate. Despite operating costs rising over 9%, rate increases granted by several state regulators allowed revenue growth to outpace expenses by a comfortable margin. In the December interim, we think the company's share net rose a solid 7%, to \$0.47.															
The positive profit momentum ought to continue into this year. When the previously granted rate relief is combined with some new higher tariffs that are scheduled to be implemented in 2023, we think that Essential's share earnings can increase 8%. The utility's acquisition policy (more below) will also contribute to the bottom line and help offset the impact of having more shares outstanding.															
Essential is one of the main members in this group that is improving its profitability by merging with smaller entities. Just like industry giant, American Water Works, it has been purchasing independent water districts that operate in the same states as it does. Due to the inherent inefficiencies that face these water districts, they make good acquisition targets, as substantial cost savings can be achieved.															
The construction budget is large. In addition to the takeovers, the company is spending heavily to modernize its pipelines, wastewater facilities, and other assets. Annual outlays will likely average about \$1 billion.															
New equity is being issued. The company announced that it has authorized a \$500 million at-the-market (ATM) program to raise funds. The ATM method provides management with more discretion over when it sells shares. Instead of flooding the market all at once, it can wait until conditions are favorable and sell them in smaller portions.															
All of our metrics suggest that investors can find better selections elsewhere. The equity is ranked to underperform in the year ahead. Moreover, the stock's prospects are below the Value Line median for both the next 18-month and 3- to 5-year periods.															
James A. Flood January 6, 2023															
(A) Diluted eps. Excl. nonrec. gains: '12: 18¢. Excl. gain from disc. operations: '12, '7¢; '13, 9¢; '14, 11¢. Quarterly EPS do not add in '19 due to a large change in the number of shares outstanding in the Dec. period. Next earnings report mid-February.				(B) Dividends historically paid in early March, June, Sept., & Dec. = Div'd. reinvestment plan available (5% discount).				(C) In millions, adjusted for stock split.				(D) Includes intangibles: 12/31/21, \$1.231 bill./\$4.87 a share.			
Company's Financial Strength B++ Stock's Price Stability 90 Price Growth Persistence 65 Earnings Predictability 60															
To subscribe call 1-800-VALUELINE															

MIDDLESEX WATER NDQ-MSEX				REGENT PRICE	86.05	P/E RATIO	34.8	(Trailing: 36.0 Median: 24.0)	RELATIVE P/E RATIO	2.12	DIV'D YLD	1.5%	VALUE LINE	1783										
TIMELINESS 3 Lowered 12/9/22	High: 19.4	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	78.1	121.4	121.1	Target Price Range 2025 2026 2027											
SAFETY 2 New 10/21/11	Low: 16.5	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8	67.1	74.2	160											
TECHNICAL 3 Raised 1/6/23	LEGENDS 55.00 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession																							
BETA: .70 (1.00 = Market)	18-Month Target Price Range Low-High Midpoint (% to Mid) \$75-\$160 \$118 (35%)																							
2025-27 PROJECTIONS																								
High Price 95	Gain (+10%)	Ann'l Total Return 4%																						
Low Price 70	Gain (-20%)	Ann'l Total Return -3%																						
Institutional Decisions																								
10/20/22 to Buy 82	20/20/22 to Buy 90	30/20/22 to Buy 82	Percent shares traded: 12, 8, 4												% TOT. RETURN 11/22									
10/20/22 to Sell 90	20/20/22 to Sell 93	30/20/22 to Sell 85													THIS STOCK INDEX									
10/20/22 Hld's(000) 13008	20/20/22 Hld's(000) 11842	30/20/22 Hld's(000) 11820													1 yr: -8.1									
© VALUE LINE PUB. LLC 25-27																								
2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	REVENUES PER SH		10.85				
6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	8.72	8.10	8.17	9.30	9.90	"Cash Flow" per sh		4.10				
1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.17	2.24	2.89	2.90	3.25	3.28	3.45	3.70	Earnings per sh A		3.00				
.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	2.07	2.50	2.70	Div'd Decl'd per sh B=C		1.50				
.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	1.11	1.18	1.28	Cap'l Spending per sh		6.00				
2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	2.91	3.08	4.40	5.11	6.04	4.53	5.00	5.25	Book Value per sh		22.80				
9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	18.57	19.81	20.99	22.55	22.70	Common Shs Outst'g C		18.00				
13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.35	16.40	17.43	17.47	17.52	17.75	17.85	Avg Ann'l P/E Ratio		28.0				
22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	25.6	28.4	22.2	29.7	30.1	44.3	36.9		Relative P/E Ratio		1.30				
1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.58	1.55	2.43	2.11		Avg Ann'l Div'd Yield		1.8%				
3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	2.3%	2.2%	2.1%	1.6%	1.6%	1.2%	1.3%		Revenues (\$mill)		195				
CAPITAL STRUCTURE as of 9/30/22																		Net Profit (\$mill)		54.0				
Total Debt \$308.8 mill. Due in 5 Yrs \$43.7 mill.	110.4 114.8 117.1 126.0 132.9 130.8 138.1 134.6 141.6 143.1 165 177																		Income Tax Rate		21.0%			
LT Debt \$301.2 mill. LT Interest \$7.5 mill. (Total Interest coverage: 9.3x) (45% of Cap'l)	14.4 16.6 18.4 20.0 22.7 22.8 32.5 33.9 38.4 38.5 44.5 48.0																		AFUDC % to Net Profit		2.5%			
Pension Assets-12/21 \$100.8 mill. Oblig. \$113.7 mill.	41.5% 40.4% 40.5% 39.4% 37.9% 37.5% 37.8% 41.5% 44.0% 45.3% 43.0% 43.0%																		Long-Term Debt Ratio		42.0%			
Pfd Stock \$2.4 mill. Pfd Div'd: \$.1 mill.	57.4% 58.7% 58.8% 59.8% 61.5% 61.8% 61.6% 58.2% 55.7% 54.4% 56.5% 56.5%																		Common Equity Ratio		57.5%			
Common Stock 17,639,000 shs. as of 10/28/22	316.5 321.4 336.8 345.4 350.7 370.7 404.1 556.7 621.5 676.3 705 715																		Total Capital (\$mill)		715			
MARKET CAP: \$1.5 billion (Small Cap)	435.2 446.5 465.4 481.9 517.8 557.2 618.5 705.7 796.6 865.4 900 915																		Net Plant (\$mill)		945			
CURRENT POSITION 2020 2021 9/30/22 (\$MILL.)	5.4% 5.9% 6.3% 6.6% 7.1% 6.9% 8.9% 6.7% 6.8% 6.0% 6.5% 7.0%																		Return on Total Cap'l		8.0%			
Cash Assets 4.5	7.8% 8.7% 9.2% 9.6% 10.3% 9.8% 12.9% 10.4% 11.0% 9.9% 11.0% 12.0%																		Return on Shr. Equity		13.0%			
Other 29.6	1.4% 2.4% 3.1% 3.5% 4.3% 3.8% 7.0% 5.4% 5.8% 4.6% 6.0% 6.5%																		Return on Com Equity		13.0%			
Current Assets 34.7	63% 73% 67% 69% 58% 62% 46% 48%																		Retained to Com Eq		6.5%			
Acc'ts Payable 30.4																			All Div'ds to Net Prof		50%			
Debt Due 9.3																								
Other 17.1																								
Current Liab. 56.8																								
BUSINESS: Middlesex Water Company, engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems, under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 61,000 retail customers, primarily in Middlesex County, New Jersey. In 2021, the Middlesex System accounted for 59% of operating revenues. At 12/31/21, the company had 347 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 2.0% of the com. stock. BlackRock Inst. Trust Co., 7.8% (4/22 proxy). Add: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Telephone: 732-634-1500. Int.: www.middlesexwater.com																								
Annual Rates Past 10 Yrs. Past 5 Yrs. Est'd '19-'21 to '25-'27 Revenues 2.0% 5% 5.0% "Cash Flow" 8.0% 9.5% 4.5% Earnings 9.5% 11.0% 6.0% Dividends 3.5% 6.0% 6.0% Book Value 6.0% 9.0% 2.5%																								
Quarterly Revenues (\$ mill.)																								
Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2019	30.7	33.4	37.8	32.7	134.6																			
2020	31.8	35.3	39.9	34.8	141.8																			
2021	32.5	36.7	39.9	34.0	143.1																			
2022	36.2	39.7	47.7	41.4	165																			
2023	42.0	43.0	50.0	42.0	177																			
Earnings per Share A																								
Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2019	.39	.49	.66	.46	2.01																			
2020	.44	.55	.72	.47	2.18																			
2021	.39	.62	.65	.41	2.07																			
2022	.68	.50	.80	.52	2.50																			
2023	.53	.62	.90	.65	2.70																			
Quarterly Dividends Paid B=C																								
Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31	Full Year																			
2018	.22375	.22375	.22375	.24	.91																			
2019	.24	.24	.24	.2562	.98																			
2020	.2562	.2562	.2562	.2725	1.04																			
2021	.2725	.2725	.2725	.29	1.11																			
2022	.29	.29	.29	.3125																				
Middlesex Water's September-period financial results received a considerable boost from a recent regulatory rate hike approval. Notably, the New Jersey Board of Public Utilities signed off on a base rate increase earlier this year, specifically relating to its Middlesex operations. In combination with an uptick in customer water consumption, third-quarter revenues jumped nearly 20% year over year, despite a slight reduction in customer rates across its Delaware water system (effective September 1st). Meanwhile, earnings rose 28% from the previous-year tally, to \$0.80 per share reflecting strong revenue expansion that more than offset modestly higher operating expenses.																								
We are lifting our 2022 and 2023 top and bottom-line estimates accordingly. For this year, we are adding \$10 million and \$0.05 to our revenue and earnings calls, to \$165 million and \$2.50 per share, respectively. We envision respectable high single-digit growth in 2023, as well. Revenues are likely to expand 7%, to \$177 million (up from our previous estimate of \$160 million), while net income is poised for an 8% annual advance, to \$2.70 per share (up from \$2.50). The board of directors recently raised the quarterly dividend payout 8% to just over \$0.31 per share. That was brought about by the company's healthy capital position and solid financial growth prospects subsequent to the abovementioned rate approval. Furthermore, we expect steady annual increases in the distribution over the 3- to 5-year stretch, which ought to peg the payout ratio, on average, to around 50%, over that time frame. Spending on upgrading aging infrastructure and outdated water systems ought to be a main headline over the pull to mid-decade. Indeed, in the years to come, capital is apt to be allocated to water main repairs, pipeline replacements, treatment facility upgrades, and operating technology enhancements. Neutrally ranked Middlesex stock is currently trading firmly within our 3- to 5-year Target Price Range. Thus, we advise subscribers to remain on the sidelines until a more-attractive entry point is available.																								
															Nicholas Patrikis					January 6, 2023				

(A) Diluted earnings. Next earnings report due early March. (B) Dividends historically paid in mid-Feb., May, Aug., and November. Div'd reinvestment plan available. (C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	95
Earnings Predictability	90

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Appendix A-5.1 (WAD)

SJW GROUP NYSE-SJW			RECENT PRICE 81.02	P/E RATIO 34.5 (Trailing: 42.2; Median: 23.0)	RELATIVE P/E RATIO 2.10	DIV'D YLD 1.8%	VALUE LINE 1784	
TIMELINESS 3 Lowered 1/6/23 SAFETY 3 New 4/22/11 TECHNICAL 3 Raised 12/2/22 BETA .80 (1.00 = Market)			LEGENDS 42.00 x Dividends p sh divided by Interest Rate Relative Price Strength Options: Yes Shaded area indicates recession			Target Price Range 2025 2026 2027		160 120 100 80 60 50 40 30 20 15
18-Month Target Price Range Low-High Midpoint (% to Mid) \$58-\$100 \$79 (0%)			2025-27 PROJECTIONS High Price Gain Ann'l Total Low 90 (+10%) 5% 60 (-25%) -5%			% TOT. RETURN 11/22 1yr. 13.4 3yr. 11.7 5yr. 20.6		15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0
Institutional Decisions to Buy 93 79 96 to Sell 80 104 77 Hld's (000) 21360 21790 22026			Percent shares traded 15 10 5			VALUE LINE PUB. LLC 25-27		REVENUES per sh 22.15 "Cash Flow" per sh 4.90 Earnings per sh A 3.25 Div'd Decl'd per sh B 1.76 Cap'l Spending per sh 8.75 Book Value per sh 40.85 Common Shs Outst'g C 30.00 Avg Ann'l P/E Ratio 23.0 Relative P/E Ratio 1.30 Avg Ann'l Div'd Yield 2.3%
CAPITAL STRUCTURE as of 9/30/22 Total Debt \$1458.0 mill; Due in 5 Yrs \$39.0 mill; LT Debt \$1453.7 mill; LT Interest \$50.0 mill; (LT Interest Coverage: 5.8x)			261.5 276.9 319.7 305.1 339.7 389.2 397.7 420.5 564.5 573.7 600 625 22.3 23.5 51.8 37.9 52.8 59.2 38.8 23.4 61.5 60.6 61.5 76.5			Revenues (\$mill) 665 Net Profit (\$mill) 98.0 Income Tax Rate 21.0% AFUDC % to Net Profit 1.5%		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Pension Assets-12/21 \$310.2 mill. Oblig. \$383.8 mill.			41.1% 38.7% 32.5% 38.1% 38.8% 36.7% 20.0% 26.4% 12.0% 12.2% 21.5% 21.0%			Long-Term Debt Ratio 45.0% Common Equity Ratio 55.0%		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Pfd Stock None Common Stock 30,315,000 shs.			55.0% 51.1% 51.6% 49.8% 50.7% 48.2% 32.7% 59.1% 58.4% 59.1% 57.5% 54.0% 45.0% 48.9% 48.4% 50.2% 49.3% 51.3% 67.3% 40.9% 41.6% 40.9% 42.5% 46.0%			Total Capital (\$mill) 2225 Net Plant (\$mill) 2825 Return on Total Cap'l 5.0% Return on Shr. Equity 8.0% Return on Com Equity 8.0%		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
MARKET CAP: \$2.5 billion (Mid-Cap)			610.2 658.2 744.5 764.6 855.0 894.3 1320.7 2173.6 2204.7 2527.5 2575 2850 831.6 898.7 963.0 1063.8 1146.4 1239.3 1828.8 2206.5 2334.9 2497.5 2600 2685			All Div's to Net Prof 54%		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
CURRENT POSITION 2020 2021 9/30/22 (\$MILL) Cash Assets 9.3 10.9 13.2 Accts Receivable 58.1 53.7 71.1 Other 59.9 69.5 73.6 Current Assets 127.3 134.1 157.9 Accts Payable 34.2 30.4 29.8 Debt Due 76.2 39.1 4.3 Other 240.4 133.8 284.6 Current Liab. 350.8 203.3 318.7			BUSINESS: SJW Group engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 231,000 connections with a total population of roughly one million people in the San Jose area and 16,000 connections that reach about 49,000 residents in the region between San Antonio and Austin, Texas. The company merged with Connecticut Water (10/19) which provides service to approx. 138,000 connections with a total population of 450,000 people. Has 751 employees. Officers and directors own about 8.0% of outstanding shares (322 proxy). Chairman & CEO: Eric Thornburg. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.			SJW Group delivered third-quarter financial results on par with our expectations. Revenues of \$176 million improved 5% year over year, while earnings jumped 28% to \$0.82 per share. A combination of cumulative rate hikes, favorable memorandum account adjustments, and modest new customer additions helped offset a decline in customer water usage during the period. That said, operating expenses, including water production, energy, labor, and administrative, registered slight annual increases in the September quarter.		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
ANNUAL RATES Past Past Est'd '19-'21 of change (per sh) 10 Yrs. 5 Yrs. to '25-'27 Revenues 4.0% 2.5% 3.5% "Cash Flow" 6.0% 5% 1.5% Earnings 6.0% 6.5% 12.0% Dividends 6.5% 10.5% 5.5% Book Value 9.0% 11.5% 4.0%			The pending California general rate case decision is imminent. At this time, financial results are derived from the 2021 base rate. Upon approval of higher 2022 rates, SJW will realize prorated revenues for the prior nine months of operations. Our presentation, however, does not factor this in, as there is some ambiguity around the final determination.			Despite holding a rank of 3 (average) for Timeliness, we think the equity has some appeal. SJW shares have advanced more than 30% in value over the past three months, etching a fresh all-time high water mark in the process. We are bullish on the stock's near-term price prospects as we head into the new year. That said, appreciation potential over the 18-month and 3- to 5-year windows is limited at recent levels. In sum, the stock is best suited for investors looking to ride the recent price momentum.		2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
Cal- QUARTERLY REVENUES (\$ MILL.) Full endar Mar.31 Jun. 30 Sep. 30 Dec. 31 Year			Our outlook for healthy infrastructure-related investment spending over the long haul remains intact. For starters, the latest general rate application also addresses the need-			January 6, 2023		2019 77.7 103.0 114.0 125.8 420.5 2020 115.8 147.2 165.9 135.6 564.5 2021 114.8 152.2 166.9 139.8 573.7 2022 124.3 149.0 176.0 150.7 600 2023 130 160 180 155 625
Cal- EARNINGS PER SHARE ^ Full endar Mar.31 Jun. 30 Sep. 30 Dec. 31 Year			Our outlook for healthy infrastructure-related investment spending over the long haul remains intact. For starters, the latest general rate application also addresses the need-			Company's Financial Strength B+ Stock's Price Stability 90 Price Growth Persistence 70 Earnings Predictability 45		2019 .21 .47 .33 .19 .82 2020 .08 .69 .91 .46 2.14 2021 .09 .69 .64 .60 2.03 2022 .12 .38 .82 .73 2.05 2023 .23 .57 .95 .80 2.55
Cal- QUARTERLY DIVIDENDS PAID \$0.05 Full endar Mar.31 Jun.30 Sep.30 Dec.31 Year			Our outlook for healthy infrastructure-related investment spending over the long haul remains intact. For starters, the latest general rate application also addresses the need-			Company's Financial Strength B+ Stock's Price Stability 90 Price Growth Persistence 70 Earnings Predictability 45		2018 .28 .28 .28 .28 1.12 2019 .30 .30 .30 .30 1.20 2020 .32 .32 .32 .32 1.28 2021 .34 .34 .34 .34 1.36 2022 .36 .36 .36 .36
(A) Diluted earnings. Excludes nonrecurring losses: '06, \$16.36; '08, \$1.22; '10, \$0.46. GAAP accounting as of 2013. Next earnings report due early February. Quarterly egs. may not add due to rounding.			(B) Dividends historically paid in early March, June, September, and December. ^ Div'd reinvestment plan available.			(C) In millions.		(D) Paid special dividend of \$0.17 per share on 11/17.
© 2022 Value Line, Inc. All rights reserved. Material is obtained from sources believed to be reliable and is provided without warranties of any kind. THE PUBLISHER IS NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS HEREIN. This publication is strictly for subscriber's own, non-commercial, internal use. No part of it may be reproduced, resold, stored or transmitted in any printed, electronic or other form, or used for generating or marketing any printed or electronic publication, service or product.			Not add due to rounding.			Company's Financial Strength B+ Stock's Price Stability 90 Price Growth Persistence 70 Earnings Predictability 45		To subscribe call 1-800-VALUELINE

Brentwood Borough Allegheny County, Pennsylvania

Sanitary Wastewater Collection System

**Appraisal Work Papers
As of January 1, 2023**

**Summaries
Financials
Budgets**

Financials 2014 through 2021

Budgets 2019, 2020, and 2023

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J. Weinert's Cell: 414-698-8371
J. Weinert's E-Mail: weinertj@auswest.net**

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

Borough of Brentwood Sewer Fund	2014	2015	2016	2017	2018	2019	2020	2021	2022
Assets									
Cash and Cash Equivalents	3,102,062	3,078,754	3,514,932	2,877,919	3,642,995	3,835,711	3,399,537	3,580,426	
Taxes Receivable		582,134							
Due from other Funds							344,978	425,037	
Due fro other Governments									
Prepaid Items		10,793	10,793	44,887	44,887	44,887	44,887	-	
Other Receivables	422,890		695,592	693,942	839,014	817,456	1,018,504	635,047	
Total Assets	3,524,952	3,671,681	4,221,317	3,616,748	4,526,896	4,698,054	4,807,906	4,640,510	
Liabilities									
Due to Other Funds	70,575	70,834	139,356	363,262	514,925	4,693	-	-	
Other Current Liabilities			14,400	13,600	556,647				
Accounts Payable	345,798	396,642	541,592	497,562	18,962	536,978	599,935	482,470	
Contracts Payable	10,911	6,423	9,690	23,049		18,109	11,034	15,879	
Unearned Revenues	9,785	16,700			40,159	28,450	69,850	-	
Total Liabilities	437,069	490,599	705,038	897,473	1,130,693	588,230	680,819	498,349	
Fund Balances									
Nonspendable		10,793	10,793	44,887	44,887	44,887	44,887	-	
Committed	3,087,883	3,170,289	3,505,486	2,674,388	3,351,316	4,064,937	4,082,200	4,142,161	
Total Fund Balances	3,087,883	3,181,082	3,516,279	2,719,275	3,396,203	4,109,824	4,127,087	4,142,161	
Total Liabilities and Fund Balances	3,524,952	3,671,681	4,221,317	3,616,748	4,526,896	4,698,054	4,807,906	4,640,510	
Revenues									
Interest, Rents and Royalties	1,500	537	1,334	1,690	16,612	35,014	40,791	13,840	
Intergovenmetai			13,281	-	63,664	4,351	145,845	323,944	
Charges for Services	2,644,498	2,927,739	3,340,647	3,590,944	3,818,653	3,777,696	3,885,852	4,132,883	
Miscellaneous	9,369	13,003	11,169			761	3,300	-	
Total Revenues	2,655,367	2,941,279	3,366,431	3,592,634	3,898,929	3,817,822	4,075,788	4,470,667	
		10.77%	14.45%	6.72%	8.53%	-2.08%	6.76%	9.69%	
Expenditures									
Public Works - Sanitation	1,852,963	2,144,819	2,227,973	2,592,377	2,498,401	2,452,191	2,690,695	3,562,957	
Miscellaneous	9,687	15.75%	3.88%	16.36%	-3.63%	-1.85%	9.73%	32.42%	
Debt Service:									
Principal	197,830	193,549	198,638	203,860	114,048	21,914	22,573	23,254	
Interest	27,999	19,712	14,623	9,401	4,552	3,222	2,563	1,882	
Total Expenditures	2,088,479	2,358,080	2,441,234	2,805,638	2,617,001	2,477,327	2,715,831	3,588,093	
Excess	566,888	583,199	925,197	786,996	1,281,928	1,340,495	1,359,957	882,574	
Transfers Out	(435,000)	(490,000)	(590,000)	(1,584,000)	(605,000)	(626,874)	(1,342,694)	(867,500)	
Net									

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

Budgets		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Revenues											
08 100	Beginning Balances										
08 100-000	Beginning Balances	-	3,087,883.00	3,181,082	3,556,397	2,915,827	3,748,389.50	2,820,413	3,406,976	3,601,600	2,600,000
	Total Beginning Balance	-	3,087,883	3,181,082	3,556,397	2,915,827	3,748,389.50	2,820,413	3,406,976	3,601,600	2,600,000
08 354	State Cap & Operating Grants										
08 341-010	Grow Grant	-	-	-	-	63,664	57,705.00	10,310	323,944	180,000	-
	Total Grant Revenues	-	-	-	-	63,664	57,705.00	10,310	323,944	180,000	-
08 341& 364	Sewer Charge Revenue										
08 341-010	Interest	1,500.31	537.18	1,334.30	1,690.47	16,611.94	11,617.00	5,902	546	16,000	10,000
08 364-010	Sewer Charges -Combined	2,246,474.02	2,776,982.97	3,145,294.27	3,357,133.24	3,621,761.52	3,618,684.00	3,607,119	3,978,384	3,650,000	3,650,000
			23.62%	13.26%	6.74%	7.88%	-0.08%	-0.32%	10.29%	-8.25%	0.00%
08 364-050	Sewer Charges -Delinquent	373,693.66	136,407.74	108,167.64	214,696.00	159,600.23	151,409.00	278,536	360,722	345,000	250,000
08 364-100	ALCOSAN Billing Reimbursement	9,831.86	10,478.77	11,169.25	11,146.46	12,204.75	12,539.00	12,870	13,158	13,300	13,000
08 364-900	Reimburs Shut off fees	540.00	240.00	180.00	160.00	400.00	410.00	-	-	-	1,000
08 364-901	Reimburs Postage Exp\	7,163.68	42.00	-	-	-	-	-	-	-	-
08 364-902	Reimburs Lein Removal Fees	5,473.79	3,599	10,038	9,371	6,631	4,113.00	5,527	684	3,000	2,000
	Total Sewer Charges Revenue	2,644,677.32	2,928,287.66	3,276,183.67	3,594,196.95	3,817,209.44	3,798,772.00	3,909,954.00	4,353,494.00	4,027,300.00	3,926,000.00
			10.72%	11.88%	9.71%	6.20%	-0.48%	2.93%	11.34%	-7.49%	-2.52%
	Total Sanitary Sewer Fund Revenues	2,644,677.32	6,016,170.66	6,457,265.67	7,150,594.26	6,796,700.54	7,604,866.50	6,740,677.00	8,084,414.00	7,808,900.00	6,526,000.00
Expenditures		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
08 407	Data Processing IT										
08 407-454	General Hardware	-	-	-	1,330.00	-	848.50	2,597.00	2,597.00	-	-
08 407-455	General Software/licenses	-	-	-	14,576.68	2,858.00	3,028.90	6,200.00	2,141.00	3,400.00	4,000.00
	Total Data Processing IT	-	-	-	15,906.68	2,858.00	3,877.40	8,797.00	4,738.00	3,400.00	4,000.00
08 429	Operations & Maintenance										
08 429-313	Engineering Services	138,808.49	112,274.43	140,390.37	170,215.37	118,574.49	145,966.40	118,786.00	151,676.00	39,000.00	150,000.00
08 429-314	Legal Services	11,350.50	1,995.00	21,008.35	7,210.75	20,303.86	13,406.07	74,443.00	70,758.00	49,000.00	80,000.00
08 429-370	R&M Services	2,923.60	-	-	-	-	-	-	-	-	5,000.00
08 429-372	O&M Plan	340,171.48	528,530.41	332,832.78	497,122.31	401,261.15	399,866.53	462,273.00	327,824.00	224,000.00	500,000.00
08 429-450	Contracted Services	-	24,961.19	17,452.00	35,510.00	24,672.20	21,123.74	29,670.00	253,486.00	42,000.00	100,000.00
08 429-610	Capital Construction	80,885.45	24,925.90	22,478.64	134,694.20	27,700.00	-	-	-	-	100,000.00
8 429-700	Capital Purchases	-	-	78,030.00	295.37	-	-	-	-	-	-
	Total Operations & Maintenance	574,139.52	692,686.93	612,192.14	845,048.00	592,511.70	580,362.74	685,172.00	803,744.00	354,000.00	935,000.00
	Operatons & Maintnace less capital	493,254.07	667,761.03	511,683.50	710,058.43	564,811.70	580,362.74	685,172.00	803,744.00	354,000.00	835,000.00
			35.38%	-23.37%	38.77%	-20.46%	2.75%	18.06%	17.31%	-55.96%	135.88%
08 429	Wastewater Collection & Treatment										
08 429-210	Office Supplies	327.14	372.48	270.50	73.19	98.38	56.00	-	-	400.00	500.00
08 429-311	Auditing Services	5,027.25	4,849.50	5,000.00	5,000.00	5,000.00	5,026.00	5,000.00	5,000.00	5,200.00	5,500.00
08 429-316	Service / Admin Fees	1,215.55	2,423.19	2,967.42	5,129.07	2,368.98	4,269.00	3,478.00	3,328.00	3,300.00	12,000.00
08 429-325	Postage	8,718.00	930.26	774.72	1,351.05	20,680.26	18,856.00	19,876.00	26,456.00	25,000.00	27,000.00
08 429-341	Advertising	667.08	1,119.28	4,330.00	85.50	750.35	2,830.00	-	589.00	-	3,000.00
08 429-453	Contracted Services - ALCOSSAN	1,223,563.32	1,346,590.13	1,479,460.45	1,621,611.88	1,825,535.87	1,793,762.00	2,366,159.00	2,011,232.00	2,096,000.00	2,799,000.00
08 429-454	Contracted Services - Billing	39,304.61	92,444.66	102,455.15	108,444.59	48,997.70	41,805.00	26,796.00	26,876.00	12,500.00	14,000.00
	Total Wastewater Collection & Treat:	1,278,822.95	1,448,729.50	1,595,258.24	1,741,695.28	1,903,431.54	1,866,604.00	2,421,309.00	2,073,481.00	2,142,400.00	2,861,000.00
			13.29%	10.11%	9.18%	9.29%	-1.93%	29.72%	-14.37%	3.32%	33.54%
08 471	Debt Principal	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
08 471-201	2005 PWSA Loan	28,132.29	19,462.63	20,048.44	20,652.06	21,279.79	21,914.29	22,574.00	23,254.00	24,000.00	24,000.00
08 471-202	2007 Pennvest Principal	169,698.09	174,086.75	178,588.93	183,207.51	92,774.00	-	-	-	-	-
	Total Debt Principal	197,830.38	193,549.38	198,637.37	203,859.57	114,053.79	21,914.29	22,574.00	23,254.00	24,000.00	24,000.00
08 472	Debt Interest										
08 472-201	2005 PWSA Loan	9,571.51	5,673.49	5,087.48	4,483.86	3,862.13	3,221.63	2,562.00	1,882.00	1,200.00	2,000.00
08 472-202	2007 Pennvest	18,427.11	14,038.45	9,536.27	4,917.69	689.54	-	-	-	-	-
	Total Debt Interest	27,998.62	19,711.94	14,623.75	9,401.55	4,551.67	3,221.63	2,562.00	1,882.00	1,200.00	2,000.00
08 491	Refunds										
08 491-000	Refunds	4,485.75	-	1,679.15	2,902.45	2,302.32	1,233.08	3,122.00	885.00	1,800.00	3,000.00
	Total Refunds	4,485.75	-	1,679.15	2,902.45	2,302.32	1,233.08	3,122.00	885.00	1,800.00	3,000.00
08 492	Transfers										
08 492-018	Transfer - Capital Improvement Fund	80,000.00	80,000.00	160,000.00	100,000.00	100,000.00	100,000.00	752,694.00	700,000.00	1,553,000.00	2,000,000.00
08 492-100	Transfer - GL Fund	350,000.00	410,000.00	430,000.00	484,000.00	505,000.00	529,000.00	590,000.00	610,000.00	1,354,000.00	609,000.00
08 492-200	Borough Municipal Building	-	-	-	1,000,000.00	-	-	-	-	-	-
	Total Transfers	430,000.00	490,000.00	590,000.00	1,584,000.00	605,000.00	629,000.00	1,342,694.00	1,310,000.00	2,907,000.00	2,609,000.00
08 495	Contingency										
08 195-000	Unreserved Balance	2,554,745.88	3,281,480.95	3,444,858.71	2,747,780.83	4,212,562.00	4,498,501.00	2,254,449.00	3,542,536.00	3,586,100.00	88,000.00
	Total Transfers	2,554,745.88	3,281,480.95	3,444,858.71	2,747,780.83	4,212,562.00	4,498,501.00	2,254,449.00	3,542,536.00	3,586,100.00	88,000.00
	Total Fund Expenditures	5,068,023.10	6,126,158.70	6,457,249.36	7,150,594.36	7,437,271.02	7,604,714.14	6,740,679.00	7,760,520.00	9,019,900.00	6,526,000.00
	Total Sanitary Sewer Fund Revenues	5,600,672.32	6,016,170.66	6,457,265.67	7,150,594.26	7,437,271.00	7,604,826.56	6,740,678.00	7,760,470.00	8,665,900.00	6,526,000.00

Appendix A-5.1 (WAD)

S:\water industry\PA American - Brentwood\Brentwood Wastewater System Valuation as of 6-30-2020 - Created 10-8-2020

Working Capital											
Current Assets	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Current Liabilities	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%

21,280,929.00

Projections	Forecast Parameters for Periods	See Rate Increase Schedule on tab: DCF Investor Owned Cells: L263-B5263										
		1-5	6-15	6-15	16-20	21-26	27-33	34-40	40-46	47-53	54-60	
Revenues	3,926,000 5.90%	3,926,000 5.90%	3.0%	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Operations & Mainte	620,585 16.48%	620,585 16.48%	3.0%	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Wastewater Collectio	1,933,273.15 10.24%	1,933,273 10.24%	3.0%	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
	2,498,401											
	1,427,599											

Population											
4/1/2010-7/1/2019	3.80%										
Customer Growth											
Annual	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Periodic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Revenue
Forecast Base 3,365,183.30
Annual Growth 5.90%

Sewer Charge 3,926,000.00
Annual Growth 4.70%

667,485.70

Operations & Mainte 620,584.75
Growth Rate 16.48%

Waste & Collection 1,933,273.15
Annual Growth 10.24%

Total Operating expenses 2,553,857.90

Operating Expenses

Expense Level 1. Operations &	3.0%	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Expense Level 2. Wastewater	3.0%	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Expense Level 3. Depreciation	Book Depreciation Expense Based on CORLD, Plant Depreciation Parameters, and CORLD Aging; Tax Depreciation Expense										
Expense Level 4. Not Used	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Expense Level 5. Not Used	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Expense Level 6. Not Used	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Expense Level 7. Not Used	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Total Operating Expenses Levels 1-7											

Appendix A-5.1 (WAD)

Borough of Brentwood Balance Sheet Governmental Funds December 31, 2014

Exhibit 3

	General Fund	Sewer Fund	Brentwood Park Fund	Capital Improve- ment Fund	Nonmajor Funds	Total Governmental Funds
ASSETS						
Cash and Cash Equivalents	\$1,150,849	\$3,102,062	\$ 13,304	\$ -	\$168,693	\$4,434,908
Taxes Receivable, Net	650,758	-	-	-	-	650,758
Due from Other Funds	70,575	-	-	29,972	39,566	140,113
Due from Other Governments	-	-	438,000	25,334	-	463,334
Other Receivables	96,501	422,890	-	-	-	519,391
Prepaid Items	<u>115,278</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>115,278</u>
TOTAL ASSETS	<u>\$2,083,961</u>	<u>\$3,524,952</u>	<u>\$451,304</u>	<u>\$55,306</u>	<u>\$208,259</u>	<u>\$6,323,782</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES						
Liabilities						
Due to Other Funds	\$ 79,567	\$ 70,575	\$ -	\$ -	\$ -	\$ 150,142
Accounts Payable	93,180	345,798	1,168	27,768	-	467,914
Contracts Payable	-	10,911	89,969	-	-	100,880
Accrued Salaries and Benefits	76,210	-	-	-	-	76,210
Payroll Deductions and Withholdings	2	-	-	-	1,239	1,241
Unearned Revenues	<u>63,199</u>	<u>9,785</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>72,984</u>
Total Liabilities	<u>312,158</u>	<u>437,069</u>	<u>91,137</u>	<u>27,768</u>	<u>1,239</u>	<u>869,371</u>
Deferred Inflows of Resources						
Unavailable Revenues - Property Taxes	<u>363,096</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>363,096</u>
Fund Balances						
Nonspendable	115,279	-	-	-	-	115,279
Restricted	-	-	-	-	5,328	5,328
Committed	-	3,087,883	360,167	27,538	201,692	3,677,280
Unassigned	<u>1,293,428</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,293,428</u>
Total Fund Balances	<u>1,408,707</u>	<u>3,087,883</u>	<u>360,167</u>	<u>27,538</u>	<u>207,020</u>	<u>5,091,315</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$2,083,961</u>	<u>\$3,524,952</u>	<u>\$451,304</u>	<u>\$55,306</u>	<u>\$208,259</u>	<u>\$6,323,782</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2014**

Exhibit 5

	General Fund	Sewer Fund	Brentwood Park Fund	Capital Improve- ment Fund	Nonmajor Funds	Total Governmental Funds
Revenues						
Taxes	\$ 5,015,389	\$ -	\$ -	\$ -	\$178,956	\$ 5,194,345
Licenses and Permits	275,783	-	-	-	-	275,783
Fines and Permits	121,786	-	-	-	-	121,786
Interest, Rents and Royalties	97,489	1,500	-	-	604	99,593
Intergovernmental	217,262	-	-	42,000	189,510	448,772
Charges for Services	321,192	2,644,498	2,100	-	183,345	3,151,135
Miscellaneous	<u>42,422</u>	<u>9,369</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>51,791</u>
Total Revenues	<u>6,091,323</u>	<u>2,655,367</u>	<u>2,100</u>	<u>42,000</u>	<u>552,415</u>	<u>9,343,205</u>
Expenditures						
Current:						
General Government	707,081	-	2,463	58,379	-	767,923
Public Safety	2,801,412	-	-	93,813	-	2,895,225
Public Works - Sanitation	19,894	1,852,963	-	-	-	1,872,857
Public Works - Highways	1,061,255	-	-	1,352,114	189,543	2,602,912
Public Works - Other	32,995	-	-	-	-	32,995
Culture - Recreation	144,570	-	2,525,177	-	352,715	3,022,462
Conservation and Development	48,369	-	-	-	-	48,369
Miscellaneous	615,111	9,687	-	-	-	624,798
Debt Service:						
Principal	-	197,830	-	252,949	49,613	500,392
Interest	<u>-</u>	<u>27,999</u>	<u>29,664</u>	<u>88,097</u>	<u>654</u>	<u>146,414</u>
Total Expenditures	<u>5,430,687</u>	<u>2,088,479</u>	<u>2,557,304</u>	<u>1,845,352</u>	<u>592,525</u>	<u>12,514,347</u>
Excess (Deficiency) of Revenues Over Expenditures						
	<u>660,636</u>	<u>566,888</u>	<u>(2,555,204)</u>	<u>(1,803,352)</u>	<u>(40,110)</u>	<u>(3,171,142)</u>
Other Financing Sources (Uses)						
Bond Proceeds	-	-	2,915,664	150,270	-	3,065,934
Transfers In	355,000	-	10,000	1,538,019	38,829	1,941,848
Sale/Compensation for Capital Assets	15,863	-	-	-	-	15,863
Transfers Out	<u>(1,010,000)</u>	<u>(435,000)</u>	<u>(458,019)</u>	<u>(38,829)</u>	<u>-</u>	<u>(1,941,848)</u>
Total Other Financing Sources (Uses)	<u>(639,137)</u>	<u>(435,000)</u>	<u>2,467,645</u>	<u>1,649,460</u>	<u>38,829</u>	<u>3,081,797</u>

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2015**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$ 876,684	\$3,078,754	\$ 347,109	\$169,440	\$4,471,987
Taxes Receivable, Net	783,733	582,134	-	-	1,365,867
Due from Other Funds	70,834	-	46,972	-	117,806
Due from Other Governments	123,260	-	838,000	-	961,260
Prepaid Items	<u>71,012</u>	<u>10,793</u>	<u>600</u>	<u>-</u>	<u>82,405</u>
TOTAL ASSETS	<u>\$1,925,523</u>	<u>\$3,671,681</u>	<u>\$1,232,681</u>	<u>\$169,440</u>	<u>\$6,999,325</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 57,002	\$ 70,834	\$ -	\$ -	\$ 127,836
Accounts Payable	75,068	396,642	8,497	-	480,207
Contracts Payable	-	6,423	78,321	-	84,744
Accrued Salaries and Benefits	87,331	-	-	-	87,331
Unearned Revenues	<u>44,389</u>	<u>16,700</u>	<u>4,710</u>	<u>-</u>	<u>65,799</u>
Total Liabilities	<u>263,790</u>	<u>490,599</u>	<u>91,528</u>	<u>-</u>	<u>845,917</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	<u>345,923</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>345,923</u>
Fund Balances					
Nonspendable	71,012	10,793	600	-	82,405
Restricted	-	-	-	5,346	5,346
Committed	-	3,170,289	1,140,553	164,094	4,474,936
Unassigned	<u>1,244,798</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,244,798</u>
Total Fund Balances	<u>1,315,810</u>	<u>3,181,082</u>	<u>1,141,153</u>	<u>169,440</u>	<u>5,807,485</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$1,925,523</u>	<u>\$3,671,681</u>	<u>\$1,232,681</u>	<u>\$169,440</u>	<u>\$6,999,325</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

Borough of Brentwood Statement of Revenues, Expenditures and Changes in Fund Balances Governmental Funds Year Ended December 31, 2015

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
Revenues					
Taxes	\$4,977,820	\$ -	\$ -	\$181,627	\$ 5,159,447
Licenses and Permits	223,855	-	-	-	223,855
Fines and Forfeits	108,871	-	-	-	108,871
Interest, Rents and Royalties	91,321	537	37	610	92,505
Intergovernmental	238,845	-	475,000	208,773	922,618
Charges for Services	345,797	2,927,739	15,775	189,839	3,479,150
Miscellaneous	42,050	13,003	50,000	-	105,053
Total Revenues	<u>6,028,559</u>	<u>2,941,279</u>	<u>540,812</u>	<u>580,849</u>	<u>10,091,499</u>
Expenditures					
Current:					
General Government	765,165	-	196,357	-	961,522
Public Safety	2,735,848	-	72,735	-	2,808,583
Public Works - Sanitation	99,075	2,144,819	-	-	2,243,894
Public Works - Highways	970,111	-	524,452	208,773	1,703,336
Public Works - Other	35,273	-	-	-	35,273
Culture - Recreation	279,450	-	537,514	370,091	1,187,055
Conservation & Development	49,292	-	-	-	49,292
Miscellaneous	736,807	-	68,225	-	805,032
Debt Service:					
Principal	-	193,549	295,621	-	489,170
Interest	-	19,712	142,158	-	161,870
Total Expenditures	<u>5,671,021</u>	<u>2,358,080</u>	<u>1,837,062</u>	<u>578,864</u>	<u>10,445,027</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>357,538</u>	<u>583,199</u>	<u>(1,296,250)</u>	<u>1,985</u>	<u>(353,528)</u>
Other Financing Sources (Uses)					
Proceeds from Extended Term Financing	-	-	6,069,698	-	6,069,698
Transfers In	410,000	-	980,000	-	1,390,000
Payment to Refunded Bond Escrow Agent	-	-	(5,000,000)	-	(5,000,000)
Transfers Out	(900,000)	(490,000)	-	-	(1,390,000)
Total Other Financing Sources (Uses)	<u>(490,000)</u>	<u>(490,000)</u>	<u>2,049,698</u>	<u>-</u>	<u>1,069,698</u>
Net Changes in Fund Balances	(132,462)	93,199	753,448	1,985	716,170
Fund Balances - January 1, 2015 (Restated - See Note 2)	<u>1,448,272</u>	<u>3,087,883</u>	<u>387,705</u>	<u>167,455</u>	<u>5,091,315</u>
Fund Balances - December 31, 2015	<u>\$1,315,810</u>	<u>\$3,181,082</u>	<u>\$1,141,153</u>	<u>\$169,440</u>	<u>\$ 5,807,485</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2016**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$1,106,760	\$3,514,932	\$1,167,255	\$305,981	\$6,094,928
Taxes Receivable, Net	609,988	-	-	-	609,988
Due from Other Funds	139,356	-	46,972	592	186,920
Due from Other Governments	38,580	-	-	-	38,580
Other Receivables	221,493	695,592	-	-	917,085
Prepaid Items	<u>134,541</u>	<u>10,793</u>	<u>981</u>	<u>1,564</u>	<u>147,879</u>
TOTAL ASSETS	<u>\$2,250,718</u>	<u>\$4,221,317</u>	<u>\$1,215,208</u>	<u>\$308,137</u>	<u>\$7,995,380</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 57,594	\$ 139,356	\$ -	\$ -	\$ 196,950
Other Current Liabilities	-	14,400	-	-	14,400
Accounts Payable	100,327	541,592	168,145	-	810,064
Contracts Payable	-	9,690	118,851	-	128,541
Accrued Salaries and Benefits	108,862	-	-	-	108,862
Unearned Revenues	<u>30,000</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>30,000</u>
Total Liabilities	<u>296,783</u>	<u>705,038</u>	<u>286,996</u>	<u>-</u>	<u>1,288,817</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	<u>297,921</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>297,921</u>
Fund Balances					
Nonspendable	134,541	10,793	981	1,564	147,879
Restricted	-	-	-	122,734	122,734
Committed	-	3,505,486	927,231	183,839	4,616,556
Unassigned	<u>1,521,473</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,521,473</u>
Total Fund Balances	<u>1,656,014</u>	<u>3,516,279</u>	<u>928,212</u>	<u>308,137</u>	<u>6,408,642</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$2,250,718</u>	<u>\$4,221,317</u>	<u>\$1,215,208</u>	<u>\$308,137</u>	<u>\$7,995,380</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2016

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,393,623	\$ -	\$ -	\$197,000	\$ 5,590,623
Licenses and Permits	259,349	-	-	-	259,349
Fines and Forfeits	123,015	-	-	-	123,015
Interest, Rents and Royalties	88,259	1,334	88	743	90,424
Intergovernmental	243,753	13,281	-	243,899	500,933
Charges for Services	897,627	3,340,647	79,793	216,499	4,534,566
Miscellaneous	<u>24,243</u>	<u>11,169</u>	<u>-</u>	<u>-</u>	<u>35,412</u>
Total Revenues	<u>7,029,869</u>	<u>3,366,431</u>	<u>79,881</u>	<u>658,141</u>	<u>11,134,322</u>
Expenditures					
Current:					
General Government	708,344	-	163,719	-	872,063
Public Safety	2,795,179	-	23,214	-	2,818,393
Public Works - Sanitation	313,126	2,227,973	-	-	2,541,099
Public Works - Highways	1,084,585	-	622,720	126,590	1,833,895
Public Works - Other	34,607	-	2,608	-	37,215
Culture - Recreation	300,928	-	139,694	392,854	833,476
Conservation and Development	46,109	-	-	-	46,109
Miscellaneous	648,187	-	-	-	648,187
Debt Service:					
Principal	-	198,638	404,636	-	603,274
Interest	5,511	14,623	315,211	-	335,345
Fiscal Agent Fees	<u>-</u>	<u>-</u>	<u>1,020</u>	<u>-</u>	<u>1,020</u>
Total Expenditures	<u>5,936,576</u>	<u>2,441,234</u>	<u>1,672,822</u>	<u>519,444</u>	<u>10,570,076</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,093,293</u>	<u>925,197</u>	<u>(1,592,941)</u>	<u>138,697</u>	<u>564,246</u>
Other Financing Sources (Uses)					
Transfers In	430,000	-	1,380,000	-	1,810,000
Sale/Compensation for Capital Assets	36,911	-	-	-	36,911
Transfers Out	<u>(1,220,000)</u>	<u>(590,000)</u>	<u>-</u>	<u>-</u>	<u>(1,810,000)</u>
Total Other Financing Sources (Uses)	<u>(753,089)</u>	<u>(590,000)</u>	<u>1,380,000</u>	<u>-</u>	<u>36,911</u>
Net Changes in Fund Balances	340,204	335,197	(212,941)	138,697	601,157
Fund Balances - January 1, 2016	<u>1,315,810</u>	<u>3,181,082</u>	<u>1,141,153</u>	<u>169,440</u>	<u>5,807,485</u>
Fund Balances - December 31, 2016	<u>\$ 1,656,014</u>	<u>\$ 3,516,279</u>	<u>\$ 928,212</u>	<u>\$308,137</u>	<u>\$ 6,408,642</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2017**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$1,089,312	\$2,877,919	\$1,987,177	\$395,870	\$6,350,278
Taxes Receivable, Net	584,123	-	-	-	584,123
Due from Other Funds	367,151	-	60,226	-	427,377
Due from Other Governments	51,036	-	-	-	51,036
Other Receivables	196,635	693,942	2,326	-	892,903
Prepaid Items	<u>63,545</u>	<u>44,887</u>	<u>-</u>	<u>-</u>	<u>108,432</u>
TOTAL ASSETS	<u>\$2,351,802</u>	<u>\$3,616,748</u>	<u>\$2,049,729</u>	<u>\$395,870</u>	<u>\$8,414,149</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 70,256	\$ 363,262	\$ -	\$ 3,889	\$ 437,407
Accounts Payable	148,430	497,562	9,742	-	655,734
Contracts Payable	-	23,049	78,321	-	101,370
Accrued Salaries and Benefits	113,435	-	-	-	113,435
Payroll Deductions and Withholdings	8,675	-	-	-	8,675
Unearned Revenues	30,000	-	-	-	30,000
Other Current Liabilities	<u>-</u>	<u>13,600</u>	<u>-</u>	<u>-</u>	<u>13,600</u>
Total Liabilities	<u>370,796</u>	<u>897,473</u>	<u>88,063</u>	<u>3,889</u>	<u>1,360,221</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	<u>336,330</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>336,330</u>
Fund Balances					
Nonspendable	63,545	44,887	-	-	108,432
Restricted	-	-	-	196,674	196,674
Committed	-	2,674,388	1,961,666	195,307	4,831,361
Unassigned	<u>1,581,131</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1,581,131</u>
Total Fund Balances	<u>1,644,676</u>	<u>2,719,275</u>	<u>1,961,666</u>	<u>391,981</u>	<u>6,717,598</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$2,351,802</u>	<u>\$3,616,748</u>	<u>\$2,049,729</u>	<u>\$395,870</u>	<u>\$8,414,149</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2017**

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,316,084	\$ -	\$ -	\$ 197,000	\$ 5,513,084
Licenses and Permits	262,643	-	-	-	262,643
Fines and Forfeits	117,602	-	-	-	117,602
Interest, Rents and Royalties	93,188	1,690	1,902	1,115	97,895
Intergovernmental	253,969	-	172,000	302,106	728,075
Charges for Services	1,257,822	3,590,944	67,514	157,693	5,073,973
Miscellaneous	<u>42,188</u>	<u>-</u>	<u>7,625</u>	<u>-</u>	<u>49,813</u>
Total Revenues	<u>7,343,496</u>	<u>3,592,634</u>	<u>249,041</u>	<u>657,914</u>	<u>11,843,085</u>
Expenditures					
Current:					
General Government	609,661	-	215,935	-	825,596
Public Safety	2,836,007	-	64,496	-	2,900,503
Public Works - Sanitation	600,559	2,592,377	-	-	3,192,936
Public Works - Highways	1,013,493	-	898,713	183,558	2,095,764
Public Works - Other	19,864	-	-	-	19,864
Culture - Recreation	329,960	-	185,976	385,267	901,203
Conservation and Development	9,756	-	-	-	9,756
Miscellaneous	658,357	-	-	-	658,357
Debt Service:					
Principal	-	203,860	472,134	-	675,994
Interest	<u>6,487</u>	<u>9,401</u>	<u>238,578</u>	<u>-</u>	<u>254,466</u>
Total Expenditures	<u>6,084,144</u>	<u>2,805,638</u>	<u>2,075,832</u>	<u>568,825</u>	<u>11,534,439</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,259,352</u>	<u>786,996</u>	<u>(1,826,791)</u>	<u>89,089</u>	<u>308,646</u>
Other Financing Sources (Uses)					
Transfers In	484,000	-	2,860,245	-	3,344,245
Sale/Compensation for Capital Assets	310	-	-	-	310
Transfers Out	<u>(1,755,000)</u>	<u>(1,584,000)</u>	<u>-</u>	<u>(5,245)</u>	<u>(3,344,245)</u>
Total Other Financing Sources (Uses)	<u>(1,270,690)</u>	<u>(1,584,000)</u>	<u>2,860,245</u>	<u>(5,245)</u>	<u>310</u>
Net Changes in Fund Balances	(11,338)	(797,004)	1,033,454	83,844	308,956
Fund Balances - January 1, 2017	<u>1,656,014</u>	<u>3,516,279</u>	<u>928,212</u>	<u>308,137</u>	<u>6,408,642</u>
Fund Balances - December 31, 2017	<u>\$ 1,644,676</u>	<u>\$ 2,719,275</u>	<u>\$ 1,961,666</u>	<u>\$ 391,981</u>	<u>\$ 6,717,598</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2018**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$1,969,194	\$3,642,995	\$8,177,058	\$410,481	\$14,199,728
Taxes Receivable, Net	611,265	-	-	-	611,265
Due from Other Funds	541,953	-	358,053	650	900,656
Due from Other Governments	29,172	-	90,000	-	119,172
Other Receivables	193,567	839,014	-	-	1,032,581
Prepaid Items	<u>65,728</u>	<u>44,887</u>	<u>-</u>	<u>-</u>	<u>110,615</u>
TOTAL ASSETS	<u>\$3,410,879</u>	<u>\$4,526,896</u>	<u>\$8,625,111</u>	<u>\$411,131</u>	<u>\$16,974,017</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 368,733	\$ 514,925	\$ 23,140	\$ 3,888	\$ 910,686
Accounts Payable	123,241	556,647	13,827	-	693,715
Contracts Payable	-	18,962	97,139	-	116,101
Accrued Salaries and Benefits	103,967	-	-	-	103,967
Payroll Deductions and Withholdings	8,759	-	-	-	8,759
Unearned Revenues	<u>30,000</u>	<u>40,159</u>	<u>-</u>	<u>-</u>	<u>70,159</u>
Total Liabilities	<u>634,700</u>	<u>1,130,693</u>	<u>134,106</u>	<u>3,888</u>	<u>1,903,387</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	<u>304,919</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>304,919</u>
Fund Balances					
Nonspendable	65,728	44,887	-	-	110,615
Restricted	-	-	-	207,415	207,415
Committed	-	3,351,316	8,491,005	199,828	12,042,149
Unassigned	<u>2,405,532</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>2,405,532</u>
Total Fund Balances	<u>2,471,260</u>	<u>3,396,203</u>	<u>8,491,005</u>	<u>407,243</u>	<u>14,765,711</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$3,410,879</u>	<u>\$4,526,896</u>	<u>\$8,625,111</u>	<u>\$411,131</u>	<u>\$16,974,017</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

Borough of Brentwood Statement of Revenues, Expenditures and Changes in Fund Balances Governmental Funds Year Ended December 31, 2018

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,769,458	\$ -	\$ -	\$197,000	\$ 5,966,458
Licenses and Permits	209,029	-	-	-	209,029
Fines and Forfeits	101,502	-	-	-	101,502
Interest, Rents and Royalties	100,413	16,612	20,018	1,947	138,990
Intergovernmental	255,208	63,664	210,000	417,408	946,280
Charges for Services	1,304,580	3,818,653	102,760	43,023	5,269,016
Miscellaneous	<u>29,446</u>	<u>-</u>	<u>5,100</u>	<u>-</u>	<u>34,546</u>
Total Revenues	<u>7,769,636</u>	<u>3,898,929</u>	<u>337,878</u>	<u>659,378</u>	<u>12,665,821</u>
Expenditures					
Current:					
General Government	644,716	-	673,746	-	1,318,462
Public Safety	2,755,181	-	52,602	7,089	2,814,872
Public Works - Sanitation	559,450	2,498,401	16,222	-	3,114,073
Public Works - Highways	1,038,292	-	817,107	251,416	2,106,815
Public Works - Other	20,626	-	-	-	20,626
Culture - Recreation	332,837	-	246,496	385,611	964,944
Conservation and Development	2,981	-	-	-	2,981
Miscellaneous	627,617	-	-	-	627,617
Debt Service:					
Principal	-	114,048	470,098	-	584,146
Interest	4,884	4,552	230,600	-	240,036
Fiscal Fees	<u>-</u>	<u>-</u>	<u>1,059</u>	<u>-</u>	<u>1,059</u>
Total Expenditures	<u>6,026,584</u>	<u>2,617,001</u>	<u>2,507,930</u>	<u>644,116</u>	<u>11,795,631</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,743,052</u>	<u>1,281,928</u>	<u>(2,170,052)</u>	<u>15,262</u>	<u>870,190</u>
Other Financing Sources (Uses)					
Refunding Bond Proceeds	-	-	6,850,000	-	6,850,000
Premium on Bonds Issued	-	-	319,391	-	319,391
Transfers In	505,000	-	1,530,000	-	2,035,000
Sale/Compensation for Capital Assets	8,532	-	-	-	8,532
Transfers Out	<u>(1,430,000)</u>	<u>(605,000)</u>	<u>-</u>	<u>-</u>	<u>(2,035,000)</u>
Total Other Financing Sources (Uses)	<u>(916,468)</u>	<u>(605,000)</u>	<u>8,699,391</u>	<u>-</u>	<u>7,177,923</u>
Net Changes in Fund Balances	826,584	676,928	6,529,339	15,262	8,048,113
Fund Balances - January 1, 2018	<u>1,644,676</u>	<u>2,719,275</u>	<u>1,961,666</u>	<u>391,981</u>	<u>6,717,598</u>
Fund Balances - December 31, 2018	<u>\$ 2,471,260</u>	<u>\$ 3,396,203</u>	<u>\$ 8,491,005</u>	<u>\$407,243</u>	<u>\$14,765,711</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2019**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$2,768,357	\$3,835,711	\$6,489,579	\$450,013	\$13,543,660
Taxes Receivable, Net	631,689	-	-	-	631,689
Due from Other Funds	16,625	-	210,903	650	228,178
Due from Other Governments	31,905	-	65,000	-	96,905
Other Receivables	192,656	817,456	-	-	1,010,112
Prepaid Items	68,060	44,887	-	1,501	114,448
	<u>\$3,709,292</u>	<u>\$4,698,054</u>	<u>\$6,765,482</u>	<u>\$452,164</u>	<u>\$15,624,992</u>
TOTAL ASSETS					
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 220,933	\$ 4,693	\$ -	\$ 12,582	\$ 238,208
Accounts Payable	132,668	536,978	359,074	44,251	1,072,971
Contracts Payable	-	18,109	84,651	-	102,760
Accrued Salaries and Benefits	146,843	-	-	-	146,843
Payroll Deductions and Withholdings	9,428	-	-	-	9,428
Unearned Revenues	30,811	28,450	-	-	59,261
	<u>540,683</u>	<u>588,230</u>	<u>443,725</u>	<u>56,833</u>	<u>1,629,471</u>
Total Liabilities					
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	303,667	-	-	-	303,667
Fund Balances					
Nonspendable	68,060	44,887	-	1,501	114,448
Restricted	-	-	-	190,948	190,948
Committed	-	4,064,937	6,321,757	202,882	10,589,576
Unassigned	2,796,882	-	-	-	2,796,882
	<u>2,864,942</u>	<u>4,109,824</u>	<u>6,321,757</u>	<u>395,331</u>	<u>13,691,854</u>
Total Fund Balances					
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
	<u>\$3,709,292</u>	<u>\$4,698,054</u>	<u>\$6,765,482</u>	<u>\$452,164</u>	<u>\$15,624,992</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2019**

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$5,659,094	\$ -	\$ -	\$ 197,000	\$ 5,856,094
Licenses and Permits	215,625	-	-	-	215,625
Fines and Forfeits	81,943	-	-	-	81,943
Interest, Rents and Royalties	99,951	35,014	97,190	2,229	234,384
Intergovernmental	271,528	4,351	85,961	431,324	793,164
Charges for Services	1,251,145	3,777,696	49,184	16,799	5,094,824
Miscellaneous	57,003	761	82,882	22,129	162,775
Total Revenues	<u>7,636,289</u>	<u>3,817,822</u>	<u>315,217</u>	<u>669,481</u>	<u>12,438,809</u>
Expenditures					
Current:					
General Government	634,241	-	1,496,767	-	2,131,008
Public Safety	2,923,463	-	10,590	-	2,934,053
Public Works - Sanitation	668,649	2,452,191	209,698	-	3,330,538
Public Works - Highway	1,089,337	-	439,531	291,461	1,820,329
Public Works - Other	16,586	-	-	-	16,586
Culture - Recreation	226,501	-	1,125,515	389,932	1,741,948
Conservation and Development	4,197	-	-	-	4,197
Miscellaneous	580,838	-	-	-	580,838
Debt Service:					
Principal	-	21,914	442,839	-	464,753
Interest	-	3,222	506,759	-	509,981
Fiscal Fees	-	-	1,500	-	1,500
Total Expenditures	<u>6,143,812</u>	<u>2,477,327</u>	<u>4,233,199</u>	<u>681,393</u>	<u>13,535,731</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,492,477</u>	<u>1,340,495</u>	<u>(3,917,982)</u>	<u>(11,912)</u>	<u>(1,096,922)</u>
Other Financing Sources (Uses)					
Transfers In	526,140	-	1,748,734	-	2,274,874
Sale/Compensation for Fixed Assets	23,065	-	-	-	23,065
Transfers Out	(1,648,000)	(626,874)	-	-	(2,274,874)
Total Other Financing Sources (Uses)	<u>(1,098,795)</u>	<u>(626,874)</u>	<u>1,748,734</u>	<u>-</u>	<u>23,065</u>
Net Changes in Fund Balances	393,682	713,621	(2,169,248)	(11,912)	(1,073,857)
Fund Balances - January 1, 2019	<u>2,471,260</u>	<u>3,396,203</u>	<u>8,491,005</u>	<u>407,243</u>	<u>14,765,711</u>
Fund Balances - December 31, 2019	<u>\$2,864,942</u>	<u>\$4,109,824</u>	<u>\$ 6,321,757</u>	<u>\$ 395,331</u>	<u>\$13,691,854</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2020**

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,587,808	\$ -	\$ -	\$ 197,000	\$ 5,784,808
Licenses and Permits	178,326	-	-	-	178,326
Fines and Forfeits	103,645	-	-	-	103,645
Interest, Rents and Royalties	94,324	40,791	29,723	887	165,725
Intergovernmental	390,560	145,845	814,450	-490,559	1,841,414
Charges for Services	1,122,527	3,885,852	30,081	5,650	5,044,110
Miscellaneous	33,679	3,300	-	15,938	52,917
Total Revenues	<u>7,510,869</u>	<u>4,075,788</u>	<u>874,254</u>	<u>710,034</u>	<u>13,170,945</u>
Expenditures					
Current:					
General Government	680,039	-	3,798,063	-	4,478,102
Public Safety	3,055,567	-	108,844	-	3,164,411
Public Works - Sanitation	689,480	2,690,695	33,202	-	3,413,377
Public Works - Highway	1,104,713	-	775,554	272,980	2,153,247
Public Works - Other	11,052	-	-	-	11,052
Culture - Recreation	197,313	-	2,945,443	380,183	3,522,939
Conservation and Development	15	-	-	-	15
Miscellaneous	541,732	-	107,287	-	649,019
Debt Service:					
Principal	-	22,573	374,530	-	397,103
Interest	-	2,563	427,517	-	430,080
Total Expenditures	<u>6,279,911</u>	<u>2,715,831</u>	<u>8,570,440</u>	<u>653,163</u>	<u>18,219,345</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,230,958</u>	<u>1,359,957</u>	<u>(7,696,186)</u>	<u>56,871</u>	<u>(5,048,400)</u>
Other Financing Sources (Uses)					
Transfers In	590,000	-	2,142,694	1,175	2,733,869
Sale/Compensation for Fixed Assets	50	-	-	-	50
Transfers Out	(1,391,175)	(1,342,694)	-	-	(2,733,869)
Total Other Financing Sources (Uses)	<u>(801,125)</u>	<u>(1,342,694)</u>	<u>2,142,694</u>	<u>1,175</u>	<u>50</u>
Net Changes in Fund Balances	429,833	17,263	(5,553,492)	58,046	(5,048,350)
Fund Balances - January 1, 2020	<u>2,864,942</u>	<u>4,109,824</u>	<u>6,321,757</u>	<u>395,331</u>	<u>13,691,854</u>
Fund Balances - December 31, 2020	<u>\$ 3,294,775</u>	<u>\$ 4,127,087</u>	<u>\$ 768,265</u>	<u>\$ 453,377</u>	<u>\$ 8,643,504</u>

See Accompanying Notes

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2020**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$ 3,204,952	\$ 3,399,537	\$ 757,997	\$ 524,893	\$ 7,887,379
Taxes Receivable, Net	777,059	-	-	-	777,059
Due from Other Funds	138,611	344,978	345,081	650	829,320
Due from Other Governments	25,156	-	804,450	-	829,606
Other Receivables	268,775	1,018,504	-	-	1,287,279
Prepaid Items	70,782	44,887	-	-	115,669
	<u>4,485,335</u>	<u>4,807,906</u>	<u>1,907,528</u>	<u>525,543</u>	<u>11,726,312</u>
TOTAL ASSETS					
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 355,658	\$ -	\$ 470,518	\$ 13,174	\$ 839,350
Accounts Payable	130,164	599,935	557,356	58,992	1,346,447
Contracts Payable	-	11,034	111,389	-	122,423
Accrued Salaries and Benefits	163,246	-	-	-	163,246
Payroll Deductions and Withholdings	10,529	-	-	-	10,529
Unearned Revenues	17,190	69,850	-	-	87,040
Other Current Liabilities	159,818	-	-	-	159,818
	<u>836,605</u>	<u>680,819</u>	<u>1,139,263</u>	<u>72,166</u>	<u>2,728,853</u>
Total Liabilities					
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	353,955	-	-	-	353,955
	<u>353,955</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>353,955</u>
Fund Balances					
Nonspendable	70,782	44,887	-	-	115,669
Restricted	-	-	-	196,831	196,831
Committed	-	4,082,200	768,265	256,546	5,107,011
Unassigned	3,223,993	-	-	-	3,223,993
	<u>3,294,775</u>	<u>4,127,087</u>	<u>768,265</u>	<u>453,377</u>	<u>8,643,504</u>
Total Fund Balances					
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
	<u>\$ 4,485,335</u>	<u>\$ 4,807,906</u>	<u>\$ 1,907,528</u>	<u>\$ 525,543</u>	<u>\$ 11,726,312</u>

See Accompanying Notes

**Borough of Brentwood
Financial Statements
December 31, 2020**

**Borough of Brentwood
Financial Statements
December 31, 2021**

Appendix A-5.1 (WAD)

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2021**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$2,015,811	\$3,580,426	\$1,561,688	\$314,496	\$ 7,472,421
Taxes Receivable, Net	749,242	-	-	-	749,242
Due from Other Funds	421,870	425,037	230,336	650	1,077,893
Due from Other Governments	6,817	-	1,072,600	-	1,079,417
Other Receivables	259,096	635,047	-	-	894,143
Prepaid Items	85,179	-	-	-	85,179
TOTAL ASSETS	<u>\$3,538,015</u>	<u>\$4,640,510</u>	<u>\$2,864,624</u>	<u>\$315,146</u>	<u>\$11,358,295</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 666,053	\$ -	\$ 418,046	\$ 3,824	\$ 1,087,923
Accounts Payable	118,249	482,470	20,040	-	620,759
Contracts Payable	-	15,879	102,442	-	118,321
Accrued Salaries and Benefits	170,063	-	-	-	170,063
Payroll Deductions and Withholdings	14,516	-	-	-	14,516
Unearned Revenues	-	-	11,020	-	11,020
Other Current Liabilities	182,417	-	-	-	182,417
Total Liabilities	<u>1,151,298</u>	<u>498,349</u>	<u>551,548</u>	<u>3,824</u>	<u>2,205,019</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	394,602	-	-	-	394,602
Fund Balances					
Nonspendable	85,179	-	-	-	85,179
Restricted	-	-	-	34,228	34,228
Committed	-	4,142,161	2,313,076	277,094	6,732,331
Unassigned	1,906,936	-	-	-	1,906,936
Total Fund Balances	<u>1,992,115</u>	<u>4,142,161</u>	<u>2,313,076</u>	<u>311,322</u>	<u>8,758,674</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$3,538,015</u>	<u>\$4,640,510</u>	<u>\$2,864,624</u>	<u>\$315,146</u>	<u>\$11,358,295</u>

See Accompanying Notes

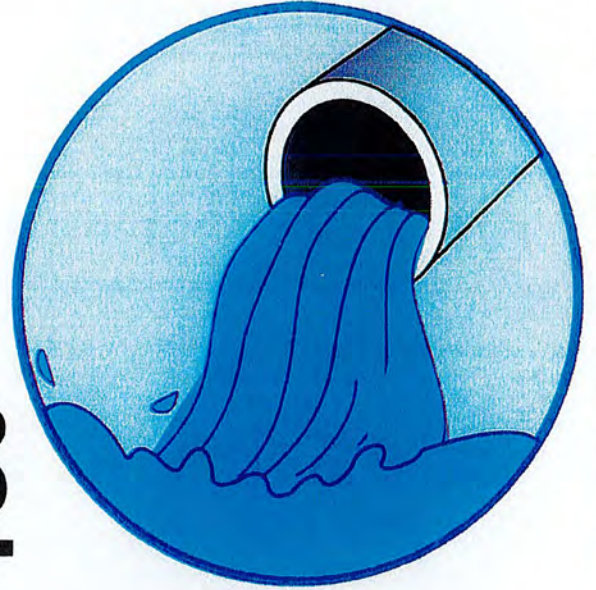
Appendix A-5.1 (WAD)

**Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2021**

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$5,968,123	\$ -	\$ -	\$ 201,000	\$ 6,169,123
Licenses and Permits	164,914	-	-	-	164,914
Fines and Forfeits	80,824	-	-	-	80,824
Interest, Rents and Royalties	98,337	13,840	336	283	112,796
Intergovernmental	351,572	323,944	735,589	404,642	1,815,747
Charges for Services	1,374,011	4,132,883	67,073	6,602	5,580,569
Miscellaneous	26,679	-	-	30,558	57,237
Total Revenues	8,064,460	4,470,667	802,998	643,085	13,981,210
Expenditures					
Current:					
General Government	819,181	-	559,874	-	1,379,055
Public Safety	3,235,661	-	127,936	-	3,363,597
Public Works - Sanitation	728,402	3,562,957	-	-	4,291,359
Public Works - Highway	1,217,573	-	608,852	210,460	2,036,885
Public Works - Other	-	-	4,243	-	4,243
Culture - Recreation	489,952	-	197,967	374,680	1,062,599
Conservation and Development	47,288	-	-	-	47,288
Miscellaneous	761,938	-	3,215	-	765,153
Debt Service:					
Principal	-	23,254	483,112	-	506,366
Interest	-	1,882	462,988	-	464,870
Total Expenditures	7,299,995	3,588,093	2,448,187	585,140	13,921,415
Excess (Deficiency) of Revenues Over Expenditures	764,465	882,574	(1,645,189)	57,945	59,795
Other Financing Sources (Uses)					
Transfers In	457,500	-	3,190,000	-	3,647,500
Sale/Compensation for Fixed Assets	55,375	-	-	-	55,375
Transfers Out	(2,580,000)	(867,500)	-	(200,000)	(3,647,500)
Total Other Financing Sources (Uses)	(2,067,125)	(867,500)	3,190,000	(200,000)	55,375
Net Changes in Fund Balances	(1,302,660)	15,074	1,544,811	(142,055)	115,170
Fund Balances - January 1, 2021	3,294,775	4,127,087	768,265	453,377	8,643,504
Fund Balances - December 31, 2021	\$1,992,115	\$4,142,161	\$ 2,313,076	\$ 311,322	\$ 8,758,674

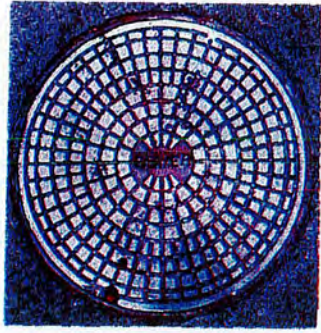
See Accompanying Notes



08

**Sanitary
Sewer Fund
Budget**

2019



08

Sanitary Sewer Fund Revenues

2019 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES										BUDGET	
08 SANITARY SEWER FUND REVENUES										FINISH	
08 SANITARY SEWER FUND										SANITARY SEWER FUND	
	ACTUAL 2014	ACTUAL 2015	ACTUAL 2016	ACTUAL 2017	BUDGETED 2018	PROJECTED 2018	PROPOSED 2019	PERCENTAGE CHANGE FROM 2018			
08 100											
08 100-000	\$ 2,955,995.00	\$ 3,087,883.00	\$ 3,181,082.00	\$ 3,556,397.31	\$ 2,500,000.00	\$ 2,915,827.10	\$ 3,000,000.00	21%			
BEGINNING BALANCES											
BEGINNING BALANCE											
TOTAL BEGINNING BALANCES	\$ 2,955,995.00	\$ 3,087,883.00	\$ 3,181,082.00	\$ 3,556,397.31	\$ 2,500,000.00	\$ 2,915,827.10	\$ 3,000,000.00	20%			
08 341 & 364											
08 341-010	\$ 6,407.46	\$ 4,491.52	\$ 1,334.30	\$ 1,690.47	\$ 1,200.00	\$ 12,500.00	\$ 11,000.00	817%			
08 364-010	\$ 1,916,530.42	\$ 1,869,773.76	\$ 3,145,294.27	\$ 1,896,381.17	\$ 2,800,000.00	\$ 3,375,000.00	\$ 3,000,000.00	7%			
08 364-050	\$ 231,656.29	\$ 262,714.41	\$ 108,167.64	\$ 415,934.03	\$ 240,000.00	\$ 200,000.00	\$ 240,000.00	0%			
08 364-100	\$ 8,901.20	\$ 9,085.44	\$ 11,169.25	\$ 9,336.85	\$ 11,500.00	\$ 12,200.00	\$ 11,500.00	0%			
08 364-900	\$ 2,662.00	\$ 5,032.76	\$ 180.00	\$ 4,102.66	\$ 600.00	\$ 500.00	\$ 600.00	0%			
08 364-901	\$ 1,648.03	\$ 2,249.32	\$ -	\$ 5,754.75	\$ 100.00	\$ -	\$ -	-100%			
08 364-902	\$ -	\$ 1,142.93	\$ 10,038.21	\$ 3,466.70	\$ 3,200.00	\$ 6,500.00	\$ 3,200.00	0%			
TOTAL SEWER CHARGES REVENUES	\$ 2,644,677.32	\$ 2,928,287.66	\$ 3,276,183.67	\$ 3,594,196.95	\$ 3,056,600.00	\$ 3,606,700.00	\$ 3,266,300.00	7%			
08 364-902											
TOTAL SANITARY SEWER FUND REVENUES	\$ 5,600,672.32	\$ 6,016,170.66	\$ 6,457,265.67	\$ 7,150,594.26	\$ 5,556,600.00	\$ 6,523,527.10	\$ 6,266,300.00	13%			



08

Sanitary Sewer Fund Expenditures

2019 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES										SANITARY SEWER FUND BUDGET		
08 SANITARY SEWER FUND EXPENDITURES										FINAL		
FINAL												
	ACTUAL 2014	ACTUAL 2015	ACTUAL 2016	ACTUAL 2017	BUDGETED 2018	PROJECTED 2018	PROPOSED 2019	PERCENTAGE CHANGE FROM 2018				
01	SANITARY SEWER FUND											
08 407	DATA PROCESSING/IT											
08 407-454	\$ -	\$ -	\$ -	\$ 1,330.00	\$ 1,500.00	\$ -	\$ 1,500.00	0%				
08 407-455	\$ -	\$ -	\$ 14,576.68	\$ 14,527.94	\$ 15,000.00	\$ 4,900.00	\$ 15,000.00	0%				
	\$ -	\$ -	\$ 14,576.68	\$ 15,857.94	\$ 16,500.00	\$ 4,900.00	\$ 16,500.00	0%				
08 429	OPERATIONS & MAINTENANCE											
08 429-313	\$ 138,808.49	\$ 112,274.43	\$ 140,390.37	\$ 170,215.37	\$ 155,000.00	\$ 108,000.00	\$ 165,000.00	6%				
08 429-314	\$ 11,350.50	\$ 1,995.00	\$ 21,008.35	\$ 7,210.75	\$ 20,000.00	\$ 19,000.00	\$ 21,000.00	5%				
08 429-370	\$ 2,923.60	\$ -	\$ -	\$ -	\$ 5,000.00	\$ -	\$ 5,000.00	0%				
08 429-372	\$ 340,171.48	\$ 528,530.41	\$ 332,832.78	\$ 497,122.31	\$ 550,000.00	\$ 505,000.00	\$ 565,000.00	3%				
08 429-450	\$ -	\$ 24,961.19	\$ 17,452.00	\$ 35,510.00	\$ 35,000.00	\$ 23,000.00	\$ 145,000.00	314%				
08 429-610	\$ 80,885.45	\$ 24,925.90	\$ 22,478.64	\$ 134,694.20	\$ 200,000.00	\$ 28,000.00	\$ 650,000.00	225%				
08 429-700	\$ -	\$ -	\$ 78,030.00	\$ 295.37	\$ 1,000.00	\$ -	\$ 1,000.00	0%				
	\$ 574,139.52	\$ 692,686.93	\$ 612,192.14	\$ 845,048.00	\$ 966,000.00	\$ 683,000.00	\$ 1,552,000.00	0.61				
08 429	WASTEWATER COLLECTION & TREATMENT											
08 429-210	\$ 327.14	\$ 372.48	\$ 270.50	\$ 73.19	\$ 1,000.00	\$ 100.00	\$ 500.00	-50%				
08 429-311	\$ 5,027.25	\$ 4,849.50	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	0%				
08 429-316	\$ 1,215.55	\$ 2,423.19	\$ 2,967.42	\$ 5,129.07	\$ 3,000.00	\$ 4,000.00	\$ 8,500.00	183%				
08 429-325	\$ 8,718.00	\$ 930.26	\$ 774.72	\$ 1,351.05	\$ 2,000.00	\$ 21,000.00	\$ 22,000.00	1000%				
08 429-341	\$ 667.08	\$ 1,119.28	\$ 4,330.00	\$ 85.50	\$ 5,000.00	\$ 1,000.00	\$ 3,000.00	-40%				
08 429-453	\$ 1,223,563.32	\$ 1,346,590.13	\$ 1,479,460.45	\$ 1,621,611.88	\$ 2,110,000.00	\$ 1,740,000.00	\$ 2,235,000.00	6%				
08 429-454	\$ 39,304.61	\$ 92,444.66	\$ 102,455.15	\$ 108,444.59	\$ 70,000.00	\$ 61,000.00	\$ 38,000.00	-46%				
	\$ 1,278,822.95	\$ 1,448,729.50	\$ 1,595,258.24	\$ 1,741,695.28	\$ 2,196,000.00	\$ 1,832,100.00	\$ 2,312,000.00	5%				
08 471	DEBT PRINCIPAL											
08 471-201	\$ 28,132.29	\$ 19,462.63	\$ 20,048.44	\$ 20,652.06	\$ 23,000.00	\$ 21,300.00	\$ 23,100.00	0%				
08 471-202	\$ 169,698.09	\$ 174,086.75	\$ 178,588.93	\$ 183,207.51	\$ 93,000.00	\$ 93,000.00	\$ -	CLOSED				
	\$ 197,830.38	\$ 193,549.38	\$ 198,637.37	\$ 203,859.57	\$ 116,000.00	\$ 114,300.00	\$ 23,100.00	-80%				

2019 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES									
08 SANITARY SEWER FUND EXPENDITURES					SANITARY SEWER FUND BUDGET				
FINAL									
	ACTUAL 2014	ACTUAL 2015	ACTUAL 2016	ACTUAL 2017	BUDGETED 2018	PROJECTED 2018	PROPOSED 2019	PERCENTAGE CHANGE FROM 2018	
01	SANITARY SEWER FUND								
08 472	DEBT INTEREST								
08 472-201	\$ 9,571.51	\$ 5,673.49	\$ 5,087.48	\$ 4,483.86	\$ 3,000.00	\$ 3,900.00	\$ 2,100.00	-30%	
08 472-202	\$ 18,427.11	\$ 14,038.45	\$ 9,536.27	\$ 4,917.69	\$ 1,000.00	\$ 700.00	\$ -	CLOSED	
	\$ 27,998.62	\$ 19,711.94	\$ 14,623.75	\$ 9,401.55	\$ 4,000.00	\$ 4,600.00	\$ 2,100.00	-48%	
08 491	REFUNDS								
08 491-000	\$ 4,485.75	\$ -	\$ 1,679.15	\$ 2,902.45	\$ 5,000.00	\$ 2,500.00	\$ 3,500.00	-30%	
	\$ 4,485.75	\$ -	\$ 1,679.15	\$ 2,902.45	\$ 5,000.00	\$ 2,500.00	\$ 3,500.00	-30%	
08 492	TRANSFERS								
08 492-018	\$ 80,000.00	\$ 80,000.00	\$ 160,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	0%	
08 492-100	\$ 350,000.00	\$ 410,000.00	\$ 430,000.00	\$ 484,000.00	\$ 505,000.00	\$ 505,000.00	\$ 529,000.00	5%	
08 492-200	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ -	\$ -	\$ -	0%	
	\$ 430,000.00	\$ 490,000.00	\$ 590,000.00	\$ 1,584,000.00	\$ 605,000.00	\$ 605,000.00	\$ 629,000.00	4%	
08 495	CONTINGENCY								
08 495-000	\$ 2,554,745.88	\$ 2,518,193.00	\$ 3,331,942.54	\$ 2,361,820.21	\$ 1,648,100.00	\$ 3,277,347.00	\$ 1,728,100.00	5%	
	\$ 2,554,745.88	\$ 2,518,193.00	\$ 3,331,942.54	\$ 2,361,820.21	\$ 1,648,100.00	\$ 3,277,347.00	\$ 1,728,100.00	5%	
	\$ 5,068,023.10	\$ 5,362,870.75	\$ 6,358,909.87	\$ 6,764,585.00	\$ 5,556,600.00	\$ 6,523,747.00	\$ 6,266,300.00	13%	
	\$ 5,600,672.32	\$ 6,126,158.70	\$ 6,457,249.36	\$ 7,150,594.26	\$ 5,556,600.00	\$ 6,524,527.10	\$ 6,266,300.00	13%	
						SURPLUS/(DEFICIT) =	\$ -		



08

**Sanitary
Sewer Fund
Budget**

2020



08

Sanitary Sewer Fund Revenues

		2021 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES					2021 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES			2021 BRENTWOOD BUDGET SANITARY SEWER FUND BUDGET	
		08 SANITARY SEWER FUND REVENUES					08 SANITARY SEWER FUND REVENUES			FIN-11	
08	SANITARY SEWER FUND	ACTUAL 2016	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	BUDGETED 2020	ACTUAL 2020	PROPOSED 2021	PERCENTAGE CHANGE FROM 2020	PERCENTAGE CHANGE FROM 2020	
08 100	BEGINNING BALANCES										
08 100-0000	BEGINNING BALANCE	\$ 3,181,082.00	\$ 3,556,397.31	\$ 2,915,827.10	\$ 3,748,349.50	\$ 2,200,000.00	\$ 2,820,400.00	\$ 400,000.00	-82%	-82%	
	TOTAL BEGINNING BALANCES	\$ 3,181,082.00	\$ 3,556,397.31	\$ 2,915,827.10	\$ 3,748,349.50	\$ 2,200,000.00	\$ 2,820,400.00	\$ 400,000.00			
08 354	STATE CAP & OPERATING GRANTS										
08 341-010	GRANT	\$ -	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 85,000.00	\$ 10,200.00	\$ 149,000.00	75%	75%	
	TOTAL GRANT REVENUES	\$ -	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 85,000.00	\$ 10,200.00	\$ 149,000.00			
08 341 & 364	SEWER CHARGES REVENUES										
08 341-010	INTEREST	\$ 1,334.30	\$ 1,690.47	\$ 16,611.94	\$ 11,617.14	\$ 11,000.00	\$ 7,000.00	\$ 7,000.00	-36%	-36%	
08 364-010	SEWER CHARGES - CURRENT	\$ 3,145,294.27	\$ 3,357,133.24	\$ 3,621,761.52	\$ 3,618,683.98	\$ 3,200,000.00	\$ 3,250,000.00	\$ 3,300,000.00	3%	3%	
08 364-050	SEWER CHARGES - DEFERRED	\$ 108,167.64	\$ 214,696.00	\$ 159,600.23	\$ 151,409.30	\$ 300,000.00	\$ 300,000.00	\$ 300,000.00	0%	0%	
08 364-100	ALCOYAN BILLING REIMBURSEMENT	\$ 11,169.25	\$ 11,146.46	\$ 12,204.75	\$ 12,538.68	\$ 12,000.00	\$ 12,500.00	\$ 12,000.00	0%	0%	
08 364-900	REIMBURS. SEWER FEES	\$ 180.00	\$ 160.00	\$ 400.00	\$ 410.00	\$ 1,000.00	\$ 300.00	\$ 1,000.00	0%	0%	
08 364-902	REIMBURS. LIEN REMOVAL FEE	\$ 10,038.21	\$ 9,370.78	\$ 6,630.79	\$ 4,113.12	\$ 4,000.00	\$ 4,000.00	\$ 4,000.00	0%	0%	
	TOTAL SEWER CHARGES REVENUES	\$ 3,276,183.67	\$ 3,594,196.95	\$ 3,817,209.23	\$ 3,798,772.22	\$ 3,528,000.00	\$ 3,573,800.00	\$ 3,624,000.00	3%	3%	
08 392	TRANSFERS										
08 392-018	TRANSFER - FROM CAPITAL IMPROVEMENT FUND	\$ -	\$ -	\$ -	\$ -	\$ 20,000.00	\$ 80,000.00	\$ 1,000,000.00	4900%	4900%	
	TOTAL TRANSFERS BALANCES	\$ -	\$ -	\$ -	\$ -	\$ 20,000.00	\$ 80,000.00	\$ 1,000,000.00	4900%	4900%	
	TOTAL SANITARY SEWER FUND REVENUES	\$ 6,457,265.67	\$ 7,150,594.26	\$ 6,796,700.33	\$ 7,604,826.56	\$ 5,833,000.00	\$ 6,484,400.00	\$ 5,173,000.00	-11%	-11%	



08

Sanitary Sewer Fund Expenditures

2021 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES										BUDGET	
08 SANITARY SEWER FUND EXPENDITURES										FINAL	
FINAL										FINAL	
8 SANITARY SEWER FUND										FINAL	
	ACTUAL 2016	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	BUDGETED 2020	ACTUAL 2020	PROPOSED 2021	PERCENTAGE CHANGE FROM 2020			
08 407											
08 407-454	\$ -	\$ 1,330.00	\$ -	\$ 848.50	\$ 1,500.00	\$ 1,000.00	\$ -	-100%			
08 407-455	\$ -	\$ 14,576.68	\$ 2,857.50	\$ 3,028.90	\$ 5,000.00	\$ 3,100.00	\$ 4,000.00	-20%			
	\$ -	\$ 15,906.68	\$ 2,857.50	\$ 3,877.40	\$ 6,500.00	\$ 4,100.00	\$ 4,000.00	-38%			
08 429											
08 429-313	\$ 140,390.37	\$ 170,215.37	\$ 118,574.49	\$ 145,960.40	\$ 170,000.00	\$ 133,000.00	\$ 170,000.00	1%			
08 429-314	\$ 21,008.35	\$ 7,210.75	\$ 20,303.86	\$ 13,406.07	\$ 21,000.00	\$ 84,000.00	\$ 60,000.00	185%			
08 429-370	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	0%			
08 429-372	\$ 332,832.78	\$ 497,122.31	\$ 401,261.15	\$ 399,866.53	\$ 580,000.00	\$ 388,000.00	\$ 597,000.00	3%			
08 429-450	\$ 17,452.00	\$ 35,510.00	\$ 24,672.20	\$ 21,123.74	\$ 145,000.00	\$ 19,000.00	\$ 235,000.00	62%			
08 429-610	\$ 22,478.64	\$ 134,694.20	\$ 27,700.00	\$ 112.00	\$ 300,000.00	\$ 300,000.00	\$ 100,000.00	-67%			
08 429-700	\$ 78,030.00	\$ 295.37	\$ -	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	1%			
	\$ 612,192.14	\$ 845,048.00	\$ 592,511.70	\$ 580,474.74	\$ 1,222,000.00	\$ 929,000.00	\$ 1,168,000.00	(0.04)			
08 429											
08 429-210	\$ 270.50	\$ 73.19	\$ 98.38	\$ 56.09	\$ 500.00	\$ -	\$ -	-100%			
08 429-311	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,025.68	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	0%			
08 429-316	\$ 2,967.42	\$ 5,129.07	\$ 2,368.98	\$ 4,269.02	\$ 8,500.00	\$ 3,800.00	\$ 9,000.00	0%			
08 429-325	\$ 774.72	\$ 1,351.05	\$ 20,680.26	\$ 18,856.47	\$ 22,000.00	\$ 21,800.00	\$ 22,000.00	0%			
08 429-341	\$ 4,330.00	\$ 85.50	\$ 750.35	\$ 2,830.48	\$ 3,000.00	\$ 100.00	\$ 3,000.00	1%			
08 429-453	\$ 1,479,460.45	\$ 1,621,611.88	\$ 1,825,535.87	\$ 1,793,761.75	\$ 2,519,000.00	\$ 1,886,000.00	\$ 2,561,000.00	2%			
08 429-454	\$ 102,455.15	\$ 108,444.59	\$ 48,997.70	\$ 41,804.60	\$ 28,000.00	\$ 26,000.00	\$ 28,000.00	1%			
	\$ 1,595,258.24	\$ 1,741,695.28	\$ 1,903,431.54	\$ 1,866,604.09	\$ 2,586,000.00	\$ 1,942,700.00	\$ 2,628,000.00	2%			
08 471											
08 471-201	\$ 20,048.44	\$ 20,652.06	\$ 21,279.79	\$ 21,914.29	\$ 24,000.00	\$ 22,600.00	\$ 24,000.00	0%			
08 471-202	\$ 178,588.93	\$ 183,207.51	\$ 92,774.00	\$ -	\$ -	\$ -	\$ -	CLOSED			
	\$ 198,637.37	\$ 203,859.57	\$ 114,053.79	\$ 21,914.29	\$ 24,000.00	\$ 22,600.00	\$ 24,000.00	0%			

2021 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES									
08 SANITARY SEWER FUND EXPENDITURES									
FINAL									
SANITARY SEWER FUND BUDGET									
FINAL									
	ACTUAL 2016	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	BUDGETED 2020	ACTUAL 2020	PROPOSED 2021	PERCENTAGE CHANGE FROM 2020	
8 SANITARY SEWER FUND									
DEBT INTEREST									
08-472									
08-472-201	\$ 5,087.48	\$ 4,483.86	\$ 3,862.13	\$ 3,221.63	\$ 2,000.00	\$ 2,600.00	\$ 2,000.00	0%	
08-472-202	\$ 9,536.27	\$ 4,917.69	\$ 689.54	\$ -	\$ -	\$ -	\$ -	0%	CLUSTED
TOTAL DEBT INTEREST	\$ 14,623.75	\$ 9,401.55	\$ 4,551.67	\$ 3,221.63	\$ 2,000.00	\$ 2,600.00	\$ 2,000.00	0%	
REFUNDS									
08-491									
08-491-000	\$ 1,679.15	\$ 2,902.45	\$ 2,302.32	\$ 1,233.08	\$ 3,000.00	\$ 500.00	\$ 3,000.00	0%	
TOTAL REFUNDS	\$ 1,679.15	\$ 2,902.45	\$ 2,302.32	\$ 1,233.08	\$ 3,000.00	\$ 500.00	\$ 3,000.00	0%	
TRANSFERS									
08-492									
08-492-018	\$ 160,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 1,752,700.00	\$ 160,000.00	60%	
08-492-100	\$ 430,000.00	\$ 484,000.00	\$ 505,000.00	\$ 529,000.00	\$ 590,000.00	\$ 590,000.00	\$ 610,000.00	3%	
08-492-200	\$ -	\$ 1,000,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	0%	
TOTAL TRANSFERS	\$ 590,000.00	\$ 1,584,000.00	\$ 605,000.00	\$ 629,000.00	\$ 690,000.00	\$ 2,342,700.00	\$ 770,000.00	12%	
CONTINGENCY									
08-495									
08-495-000	\$ 3,444,875.02	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ 1,279,500.00	\$ 1,240,200.00	\$ 574,000.00	-55%	
TOTAL CONTINGENCY	\$ 3,444,875.02	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ 1,279,500.00	\$ 1,240,200.00	\$ 574,000.00	-55%	
TOTAL SEWER FUND EXPENDITURES	\$ 6,457,265.67	\$ 7,150,594.26	\$ 6,796,700.33	\$ 7,604,826.56	\$ 5,813,000.00	\$ 6,484,400.00	\$ 5,173,000.00	-11%	
TOTAL SANITARY SEWER FUND REVENUES	\$ 6,457,265.67	\$ 7,150,594.26	\$ 6,796,700.33	\$ 7,604,826.56	\$ 5,833,000.00	\$ 6,484,400.00	\$ 5,173,000.00	-11%	
					SURPLUS/(DEFICIT) =		\$		

Appendix A-5.1 (WAD)

"God puts rainbows in the clouds so that each of us – in the dreariest and most dreaded moments – can see a possibility of hope." –Maya Angelou



FISCAL YEAR 2023 OPERATING BUDGET & PERFORMANCE PLAN

**BOROUGH OF BRENTWOOD
ALLEGHENY COUNTY,
PENNSYLVANIA**



FUND 08

Sanitary Sewer Fund Budget

The Sanitary Sewer Fund is an Enterprise Fund account for the Borough's ongoing activities that are similar to private business enterprises where the Borough intends that the costs of providing services to the general public continually be financed or recovered primarily through user charges or fees.

2023 Revenues = \$6,526,000.00

2023 Expenditures = \$6,526,000.00

08
**Sanitary Sewer Fund
Revenues**

08
**Sanitary Sewer Fund
Expenditures**

2023 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES										SANITARY SEWER FUND BUDGET	
08 SANITARY SEWER FUND EXPENDITURES										FINAL	
FINAL											
	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	ACTUAL 2021	BUDGETED 2022	FORECASTED 2022	BUDGETED 2023	PERCENT CHANGE			
8 SANITARY SEWER FUND											
DATA PROCESSING/IT											
08 407											
08 407-454	\$ -	\$ 848.50	\$ 2,597.40	\$ 2,597.40	\$ -	\$ -	\$ -				
08 407-455	\$ 2,857.50	\$ 3,028.90	\$ 6,200.00	\$ 2,141.45	\$ 3,000.00	\$ 3,400.00	\$ 4,000.00	33%			
TOTAL DATA PROCESSING/IT	\$ 2,857.50	\$ 3,877.40	\$ 8,797.40	\$ 4,738.85	\$ 3,000.00	\$ 3,400.00	\$ 4,000.00	33%			
OPERATIONS & MAINTENANCE											
08 429											
08 429-313	\$ 118,574.49	\$ 146,078.40	\$ 118,785.50	\$ 151,675.87	\$ 170,000.00	\$ 39,000.00	\$ 150,000.00	-12%			
08 429-314	\$ 20,303.86	\$ 13,406.07	\$ 74,442.61	\$ 70,757.52	\$ 80,000.00	\$ 49,000.00	\$ 80,000.00	0%			
08 429-370	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ -	\$ 5,000.00	0%			
08 429-372	\$ 401,261.15	\$ 399,866.53	\$ 462,272.73	\$ 327,824.29	\$ 600,000.00	\$ 224,000.00	\$ 500,000.00	-17%			
08 429-450	\$ 24,672.20	\$ 21,123.74	\$ 29,670.00	\$ 253,485.78	\$ 100,000.00	\$ 42,000.00	\$ 100,000.00	0%			
08 429-610	\$ 27,700.00	\$ -	\$ -	\$ -	\$ 100,000.00	\$ -	\$ 100,000.00	0%			
08 429-700	\$ -	\$ -	\$ -	\$ -	\$ 1,000.00	\$ -	\$ -	-100%			
TOTAL OPERATIONS & MAINTENANCE	\$ 592,511.70	\$ 580,474.74	\$ 685,170.84	\$ 803,743.46	\$ 1,056,000.00	\$ 354,000.00	\$ 935,000.00	-11%			
WASTEWATER COLLECTION & TREATMENT											
08 429											
08 429-210	\$ 98.38	\$ 56.09	\$ -	\$ -	\$ -	\$ 400.00	\$ 500.00	1.00			
08 429-311	\$ 5,000.00	\$ 5,025.68	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,200.00	\$ 5,500.00	10%			
08 429-316	\$ 2,368.98	\$ 4,269.02	\$ 3,478.47	\$ 3,328.16	\$ 9,000.00	\$ 3,300.00	\$ 12,000.00	33%			
08 429-325	\$ 20,680.26	\$ 18,856.47	\$ 19,875.63	\$ 26,456.16	\$ 22,000.00	\$ 25,000.00	\$ 27,000.00	23%			
08 429-341	\$ 750.35	\$ 2,830.48	\$ -	\$ 589.31	\$ 3,000.00	\$ -	\$ 3,000.00	0%			
08 429-453	\$ 1,825,535.87	\$ 1,793,761.75	\$ 2,366,158.96	\$ 2,011,231.50	\$ 2,561,000.00	\$ 2,096,000.00	\$ 2,799,000.00	9%			
08 429-454	\$ 48,997.70	\$ 41,804.60	\$ 26,795.89	\$ 26,826.27	\$ 13,000.00	\$ 12,500.00	\$ 14,000.00	8%			
TOTAL WASTEWATER COLLECTION & TREATMENT	\$ 1,903,431.54	\$ 1,866,604.09	\$ 2,421,308.95	\$ 2,073,431.40	\$ 2,613,000.00	\$ 2,142,400.00	\$ 2,861,000.00	9%			
DEBT PRINCIPAL											
08 471											
08 471-201	\$ 21,279.79	\$ 21,914.29	\$ 22,574.08	\$ 23,253.78	\$ 24,000.00	\$ 24,000.00	\$ 24,000.00	0%			
08 471-202	\$ 92,774.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	CLOSED			
TOTAL DEBT PRINCIPAL	\$ 114,053.79	\$ 21,914.29	\$ 22,574.08	\$ 23,253.78	\$ 24,000.00	\$ 24,000.00	\$ 24,000.00	0%			



A FULL-SERVICE CIVIL ENGINEERING FIRM

C-41166

January 13, 2023

Engineering Assessment Study of:

Brentwood Borough's Sanitary Sewer System

Brentwood Borough,
Allegheny County, Pennsylvania



PREPARED FOR

Brentwood Borough
3735 Brownsville Road
Brentwood, PA 15227

AND

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

SUBMITTED BY

Daniel S. Deiseroth, P.E.
The Gateway Engineers,
Inc. 100 McMorris Road
Pittsburgh, PA 15205-9401
412-409-2401 Phone
412-921-9960 Fax



A FULL-SERVICE CIVIL ENGINEERING FIRM

REPORT



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Purpose of Report	4
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Inventory of Assets	7
Regulatory Requirements	15
Brentwood Borough Existing Sewershed Map	16

Executive Summary

As required by Pennsylvania Act 12 of 2016, The Gateway Engineers, Inc. has been engaged to conduct an assessment of the tangible assets of the Brentwood Borough Sanitary Sewer System and has prepared an Engineering Assessment Study of all sanitary sewer facilities located within Brentwood Borough (Borough), Allegheny County, Pennsylvania. This work was requested as part of the purchase agreement of the Borough's sanitary sewer system tangible assets by Pennsylvania American Water Company (PAWC).

The Borough's sanitary sewer system consists entirely of gravity sewers for conveyance of sewage to be treated at the Allegheny County Sanitary Authority (ALCOSAN) sewage treatment facility along Woods Run in Pittsburgh, PA. The system's pipe network is split into two sewer sheds: Point of Connection (POC) MH-89 (Saw Mill Run) and POC MH-42 (Streets Run), both of which are part of the ALCOSAN service area.

The Borough's sanitary sewer system's main trunk sewers began construction in 1919 and have been continually expanded since this initial date. This assessment classifies the installation year of each pipe, structure, and lateral located within Brentwood Borough as well as materials, sizes, lengths, and approximate depths of all assets within the system.

This assessment calculates the cost of construction of the sanitary sewer system in the year at which it was built and utilizes the National Association of Regulatory Utility Commissioners Uniform System of Accounts for Class A Wastewater Utilities to categorize the collection system. The resulting data listed within this assessment will be used by utility valuation experts (UVE) to determine the appraised value of the system as prescribed in the ACT 12 requirements.

Purpose of Report

The purpose of this assessment is to provide data and a valuation of the tangible assets which are included in the sale of Brentwood's Sanitary Sewer System to PAWC as required by Pennsylvania Act 12 of 2016. This data will be used by utility valuation experts to develop an appraisal of the current sanitary system.

Typically, the existing sanitary system is presented in subsections based on constructed year, material type, size, depth, and length. This data is generally correlated to work orders, bonds, construction bid tabulations, payment applications, easement plans, subdivision plans, etc. for an actual cost of construction. Due to most of the system being constructed prior to 1930, this data is not available, and it was determined that using cost indices would be the most accurate method for cost representation. Therefore, the data listed above has been used in conjunction with the "Handy-Whitman Index of Public Utility Construction Costs" Bulletin No. 191 – Trends of Construction Costs for cost estimation purposes. The Handy-Whitman index provides a ratio that is used to convert the current day construction costs to the construction costs in a previous year by multiplying the current costs by an index ratio developed for each historical year. This allows a calculation to determine construction costs at the year of construction based on 2022 values. Final costs include a soft cost percentage which takes design, permitting, inspection, and contract administration into consideration. Data listed in this assessment was gathered using the following means and methods: physical as built plans dating back to 1919, recorded plans, as built plans, work orders, easement plans, right of way plans, CCTV inspections, institutional knowledge, etc. This data was implemented into a GIS database and crosschecked based on datalogging of all known archived pipe/structure repairs throughout the Borough.

Methodology for the following cost calculations is described as follows:

Gravity Main Pipes – Pipe sizing, length, installation date, material, and depth data was gathered using the means and methods previously described for each pipe within the sanitary system. A 2022 material cost for each type of pipe in the system, per linear foot, was determined. A 2022 installation and restoration cost for a trench to install each pipe based on depth and size of pipe per linear footage was determined. Depths were classified with four categories: 0-8', 8-12', 12-16', and greater than 16'. The material cost per linear foot, trench installation cost per linear foot and total pipe length was used to determine the combined 2022 cost of material and installation for each pipe within the system. The Handy-Whitman cost indices were used to relate the material and installation costs in 2022 to the year the pipe was installed.

Manholes (Structures) – Installation date and structure depth data was gathered using means and methods previously described for each structure within the system. A 2022 cost was determined to install a structure, including labor and materials, for each of the following depth categories: 0-8', 8-12', 12-16', and greater than 16'. Each structure in the system was assigned an approximate 2022 cost based on their depths and corresponding 2022 values. The Handy-Whitman cost indices were then used to relate the structure cost in 2022 to the year the structure was installed.

Laterals – The total number of laterals within the system was estimated based on billing data provided by the Borough. Laterals within Brentwood that are located within their roadway right of way owned by the Borough. The total number of laterals installed per year was determined by calculating the percentage of public gravity main pipe installed per year with relation to the total length of all pipes within the system and calculated using a lump sum unit cost per lateral. This provided a ratio which approximated how much of the total system was built for each year listed in this assessment. This ratio was used to calculate the approximate number of laterals installed per year. Laterals were then assigned a 2022 cost value. The Handy-Whitman cost indices were then used to relate the lateral cost in 2022 to the year the lateral was installed.

System Description

The Brentwood Borough sanitary sewer system is only comprised of gravity sewers and manhole structures. The system is part of two sewer sheds: Saw Mill Run (POC MH-89) and Streets Run (POC MH-42). Both sewer systems are part of the ALCOSAN service area. The Brentwood system services approximately 3950 public, commercial, and residential customers throughout the 1.45 square mile Borough.

The main trunk sanitary sewer system started construction in 1919. Approximately 7% of the Borough's total sewer line length was installed between the years of 1919-1924. The majority of the system was built between the years of 1925-1930 where approximately 75% of the network was installed. Approximately 18% of the system has been installed between 1931-present.

The pipes within the system total approximately 200,000 linear feet of gravity collection main lines with depths ranging from approximately 2-26 feet deep. Pipe sizes and materials within the system are described as follows:

- Cast Iron Pipe (CAS) – 8"
- Ductile Iron Pipe (DIP) – 8"
- Polyvinyl Chloride Pipe (PVC) – 8", 10", 12", 15"
- Vitrified Clay Pipe (VCP) – 8", 10", 12", 15", 18"

There are approximately 1,050 brick/concrete manholes (structures) within the system with approximate depths varying from 2-26 feet. The average manhole depth throughout the system is approximately 8 feet.

There are approximately 3,950 8" sanitary laterals within the system. This is estimated on the basis that every billed customer within the system has one sanitary lateral tie in with the main system.

The sewer system is primarily constructed within the existing road rights of way, however, during the research for the assessment, documentation of thirty-six recorded easements have been obtained from the Borough's archives. Of these easements thirty were sold to the Borough for a fee of \$1.00. The other six easements were a partial condemnation with no fees listed. The total known purchased value of the easements is \$30.00.

The total cost of assets to be acquired, taken back to the constructed year via cost indices, is \$9,942,185.31.

Inventory of Assets



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Brentwood Borough
Original Cost of Wastewater Collection System

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
353.00	Easements				
	Address			Year	
	3940 Edge Rd			1998	\$ 1.00
	4010 Edge Rd			1998	\$ 1.00
	3970 Edge Rd			1998	\$ 1.00
	3954 Edge Rd			1998	\$ 1.00
	3944 Edge Rd			1998	\$ 1.00
	3950 Edge Rd			1998	\$ 1.00
	4020 Edge Rd			1998	\$ 1.00
	3966 Edge Rd			1998	\$ 1.00
	4016 Edge Rd			1998	\$ 1.00
	3960 Edge Rd			1998	\$ 1.00
	Lot 16 Colonial Park			2001	\$ 1.00
	Lot 15 Colonial Park			2001	\$ 1.00
	Lot 14 Colonial Park			2001	\$ 1.00
	Lot 18 Colonial Park			2001	\$ 1.00
	Lot 17 Colonial Park			2001	\$ 1.00
	4110 Tuxey Ave			2004	\$ 1.00
	4114 Tuxey Ave			2004	\$ 1.00
	4116 Tuxey Ave			2004	\$ 1.00
	4120 Tuxey Ave			2004	\$ 1.00
	3312 Shadyway Dr			2005	N/A
	3338 Shadyway Dr			2005	N/A
	425 E Garden Rd			2005	N/A
	217 Burdine Ave			2005	N/A
	3310 Brownsville Rd			2005	N/A
	3500 Brownsville Rd			2005	N/A
	3340 Shadyway Dr			2005	\$ 1.00
	3311 Villawood Ave			2005	\$ 1.00
	451 E Garden Rd			2005	\$ 1.00
	3330 Willett Ave			2005	\$ 1.00
	3316 Willett Ave			2005	\$ 1.00
	3242 Willett Ave			2005	\$ 1.00
	437 E Garden Rd			2005	\$ 1.00
	4080 Edge Rd			2005	\$ 1.00
	445 E Garden Rd			2005	\$ 1.00
	441 E Garden Rd			2005	\$ 1.00
	3316 Shadyway Dr			2005	\$ 1.00
TOTAL					\$ 30.00



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
361.10	8" Cast Iron Gravity Collection Sewer	L.F.	285	1971	\$ 4,803.22
TOTAL					\$ 4,803.22
361.11	8" Ductile Iron Gravity Collection Sewer	L.F.	508	1991	\$ 38,064.22
TOTAL					\$ 38,064.22
361.12	8" Polyvinyl Chloride Gravity Collection Sewer	L.F.	981	1982	\$ 40,309.60
			951	1991	\$ 62,133.81
			392	2002	\$ 37,003.53
			894	2003	\$ 81,226.55
			1092	2004	\$ 101,491.16
			58	2005	\$ 6,294.91
			785	2006	\$ 634,651.18
			2543	2007	\$ 1,003,564.59
			1326	2008	\$ 662,772.93
			338	2012	\$ 74,680.00
			129	2014	\$ 22,142.32
TOTAL					\$ 2,726,270.58
361.13	10" Polyvinyl Chloride Gravity Collection Sewer	L.F.	147	1991	\$ 10,725.71
			1315	2003	\$ 134,476.36
			71	2006	\$ 131,317.43
			133	2007	\$ 90,037.86
			118	2008	\$ 58,979.79
TOTAL					\$ 425,537.16
361.14	12" Polyvinyl Chloride Pipe Gravity Collection Sewer	L.F.	140	2005	\$ 15,754.22
			36	2007	\$ 24,317.15
TOTAL					\$ 40,071.37
361.15	15" Polyvinyl Chloride Pipe Gravity Collection Sewer	L.F.	304	2001	\$ 23,369.46
			663	2005	\$ 80,622.03
			128	2006	\$ 16,001.26
TOTAL					\$ 119,992.75
361.16	6" Vitrified Clay Gravity Collection Sewer	L.F.	17	1930	\$ 62.70
TOTAL					\$ 62.70



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
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Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
361.17	8" Vitrified Clay Gravity Collection Sewer	L.F.	1678	1919	\$ 6,865.28
			8501	1920	\$ 42,603.00
			868	1924	\$ 3,568.06
			24280	1927	\$ 107,355.01
			30772	1929	\$ 134,347.02
			61165	1930	\$ 269,260.94
			6406	1938	\$ 29,281.28
			376	1945	\$ 1,843.23
			950	1946	\$ 6,213.79
			619	1947	\$ 4,979.31
			1733	1948	\$ 14,728.86
			2717	1949	\$ 24,053.96
			3074	1950	\$ 27,866.82
			1167	1952	\$ 13,071.77
			2981	1958	\$ 41,231.15
			393	1961	\$ 6,040.41
			244	1963	\$ 4,271.01
			66	1964	\$ 1,162.56
			965	1966	\$ 15,125.04
			195	1971	\$ 3,425.36
132	1972	\$ 2,416.24			
5678	1991	\$ 369,190.25			
TOTAL					\$ 1,128,900.34
361.18	10" Vitrified Clay Gravity Collection Sewer	L.F.	1559	1927	\$ 10,182.84
			2290	1929	\$ 12,856.87
			9862	1930	\$ 51,891.05
			156	1961	\$ 2,187.25
			296	1991	\$ 29,834.92
TOTAL					\$ 106,952.93
361.19	12" Vitrified Clay Gravity Collection Sewer	L.F.	387	1927	\$ 2,104.17
			8594	1930	\$ 51,929.50
			383	1961	\$ 6,933.84
			432	1963	\$ 9,252.08
			1324	1990	\$ 715,774.22
TOTAL					\$ 785,993.81
361.20	15" Vitrified Clay Gravity Collection Sewer	L.F.	77	1927	\$ 711.36
			674	1929	\$ 5,366.91
			4558	1930	\$ 27,740.48
			236	1958	\$ 3,763.77
			30	1962	\$ 940.15
			356	1971	\$ 13,385.66
TOTAL					\$ 51,908.33
361.21	18" Vitrified Clay Gravity Collection Sewer	L.F.	163	1920	\$ 1,261.55
			244	1930	\$ 1,438.48
TOTAL					\$ 2,700.04



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
361.60	Manhole Structures 0-8' Deep	EA	19	1927	\$ 2,568.57
			90	1929	\$ 12,166.90
			231	1930	\$ 29,493.46
			22	1938	\$ 2,974.13
			1	1945	\$ 165.23
			1	1946	\$ 180.25
			5	1947	\$ 1,051.46
			10	1948	\$ 2,403.34
			14	1949	\$ 3,680.11
			12	1950	\$ 3,244.51
			4	1952	\$ 1,141.59
			14	1958	\$ 5,257.30
			4	1961	\$ 1,592.21
			1	1962	\$ 405.56
			1	1963	\$ 413.07
			2	1964	\$ 841.17
			6	1966	\$ 2,658.69
			2	1972	\$ 1,381.92
			13	1991	\$ 26,752.16
			4	2003	\$ 11,836.44
2	2004	\$ 6,323.78			
1	2019	\$ 5,216.40			
2	2020	\$ 20,095.20			
1	2022	\$ 21,810.45			
TOTAL					\$ 163,653.90



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
361.61	Manhole Structures 8-12' Deep	EA	49	1927	\$ 7,801.84
			57	1929	\$ 9,075.61
			147	1930	\$ 22,105.20
			12	1938	\$ 1,910.65
			2	1945	\$ 389.21
			1	1946	\$ 212.29
			4	1948	\$ 1,132.24
			2	1949	\$ 619.19
			5	1950	\$ 1,592.21
			1	1952	\$ 336.13
			2	1958	\$ 884.56
			3	1961	\$ 1,406.45
			1	1962	\$ 477.66
			2	1963	\$ 973.02
			1	1966	\$ 521.89
			3	1971	\$ 2,229.10
			14	1991	\$ 33,931.79
			6	2003	\$ 20,911.04
			4	2004	\$ 14,896.02
			12	2006	\$ 66,150.00
			67	2007	\$ 281,942.16
			36	2008	\$ 161,779.20
			24	2011	\$ 123,767.90
			5	2012	\$ 26,536.86
			8	2013	\$ 43,025.09
			17	2014	\$ 94,736.58
2	2015	\$ 11,428.54			
1	2016	\$ 5,829.26			
4	2017	\$ 23,741.64			
TOTAL					\$ 960,343.35



Appendix A-5.1 (WAD)

Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
361.62	Manhole Structures 12-16' Deep	EA	9	1927	\$ 1,649.29
			9	1929	\$ 1,649.29
			22	1930	\$ 3,807.62
			2	1946	\$ 488.68
			1	1948	\$ 325.79
			4	1949	\$ 1,425.31
			1	1966	\$ 600.67
			7	1991	\$ 19,526.79
			7	2003	\$ 28,078.66
			2	2013	\$ 75,570.00
			1	2014	\$ 56,400.00
			1	2020	\$ 12,804.00
			1	2022	\$ 77,517.33
TOTAL					\$ 279,843.43
361.63	Manhole Structures Over 16' Deep	EA	4	1927	\$ 733.02
			6	1929	\$ 1,099.53
			7	1930	\$ 1,211.52
			1	1938	\$ 183.25
			2	1961	\$ 1,079.17
			1	1963	\$ 559.94
			4	1971	\$ 3,420.75
			6	1991	\$ 16,737.25
			2	2004	\$ 8,572.24
			1	2018	\$ 48,020.40
			TOTAL		
361.71	Manhole to Manhole Liner Installation	LF	3296	2005	\$ 210,000.00
			5523	2007	\$ 314,401.92
			1055	2010	\$ 67,338.00
			3588	2012	\$ 296,780.40
			1621	2013	\$ 141,744.00
			962	2014	\$ 67,512.60
			4875	2015	\$ 329,170.74
			5625	2017	\$ 452,770.56
			3760	2018	\$ 206,011.80
			4307	2019	\$ 253,822.80
			2424	2020	\$ 106,105.20
			2234	2021	\$ 95,955.30
TOTAL					\$ 2,541,613.32



Appendix A-5.1 (WAD)

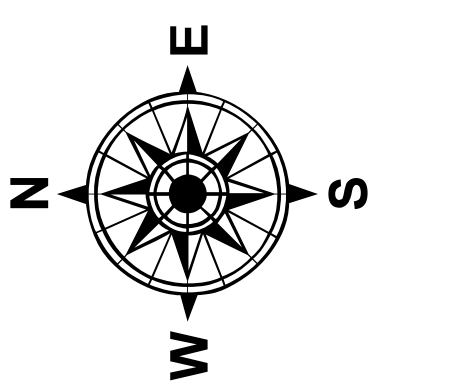
Brentwood Borough's
Sanitary Sewer System
January 13, 2023
C-41166

Naruc Account ID No.	Description	Unit	Total Units	Year	Cost
363.00	Service Laterals	EA	37	1919	\$ 1,572.61
			200	1920	\$ 9,350.65
			16	1924	\$ 748.05
			575	1927	\$ 25,661.16
			755	1929	\$ 32,089.73
			1635	1930	\$ 69,492.33
			126	1938	\$ 5,890.91
			13	1945	\$ 718.30
			23	1946	\$ 1,417.47
			9	1947	\$ 669.42
			51	1948	\$ 4,443.68
			81	1949	\$ 7,229.75
			55	1950	\$ 5,025.97
			23	1952	\$ 2,297.28
			55	1958	\$ 7,363.64
			23	1961	\$ 3,372.61
			6	1962	\$ 905.31
			12	1963	\$ 1,836.13
			4	1964	\$ 620.54
			14	1966	\$ 2,231.40
			26	1971	\$ 5,193.86
			4	1972	\$ 833.06
			140	1991	\$ 91,338.84
			26	2003	\$ 22,488.31
			16	2004	\$ 14,689.02
			2	2015	\$ 7,875.00
			7	2016	\$ 27,650.00
			12	2017	\$ 39,410.82
			4	2018	\$ 11,725.00
			5	2019	\$ 15,033.62
			6	2020	\$ 23,835.00
			34	2021	\$ 32,490.21
			41	2022	\$ 8,327.11
			TOTAL		
Total Gravity Collection System, Manhole Structures & Laterals					\$ 9,942,185.31

Regulatory Requirements

The entire service area for the ALCOSAN Woods Run Treatment Facility is under a Federal Consent Decree along with ALCOSAN to address wet weather overflow issues throughout the sewer system. Each of the 83 municipalities that contribute to the ALCOSAN treatment plant were issued an original consent order for system evaluations and a phase I consent order for source reduction potential, which have both been completed and closed out.

Brentwood Borough Existing Sewershed Map

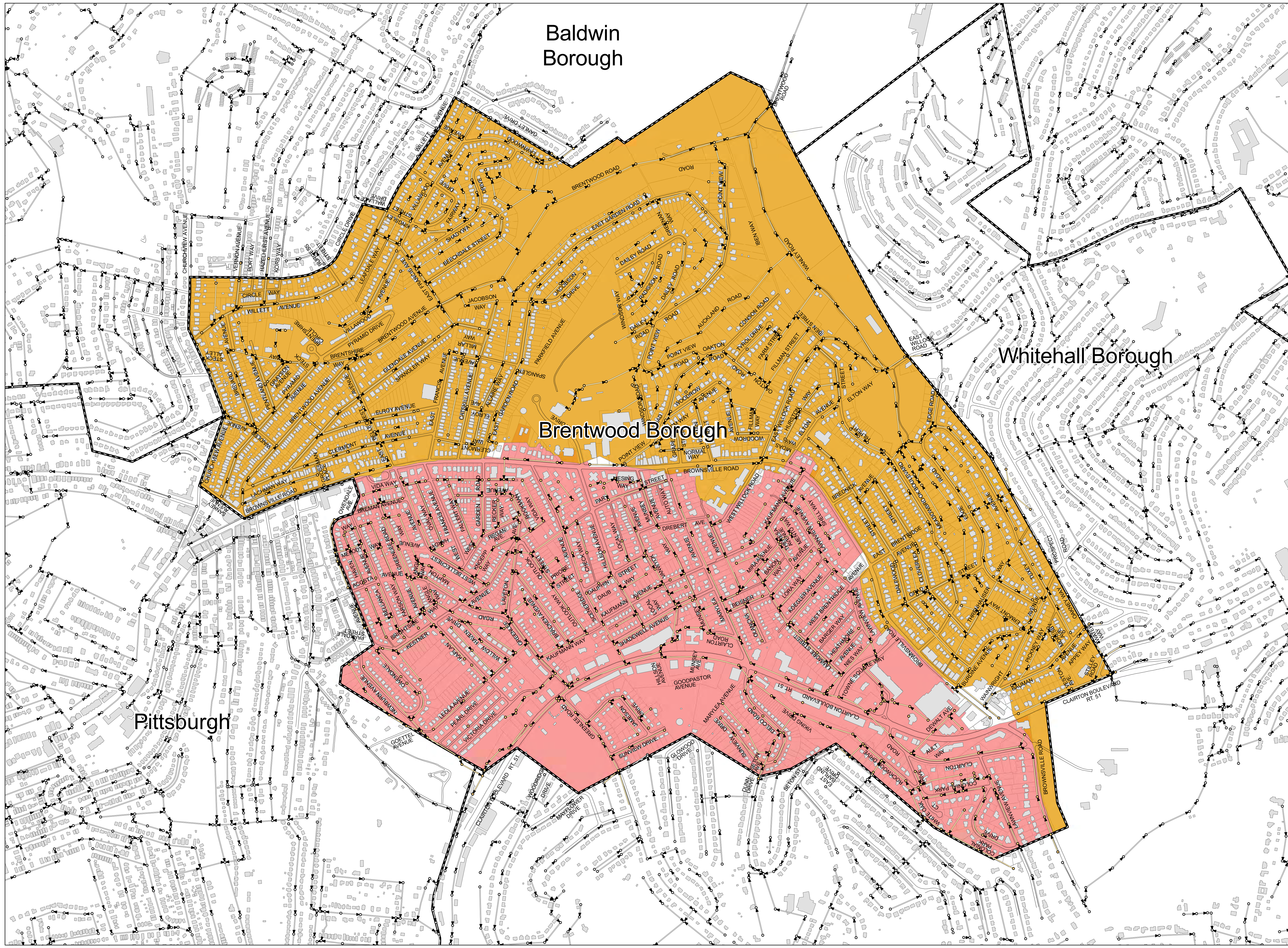


0 200 400 800 Feet

Brentwood Borough

Existing Sewershed Map

File Name & Path: L:\P-21-0049\Brentwood_Existing_Sewershed_Map_24-5-06.mxd



Legend

- Brentwood Structure
- Brentwood Sewerlines
- OneOverall Structure
- OneOverall Sewerline
- Building Footprints
- ▭ Parcels
- ▭ Municipal Boundary
- M-42 Point of Connection
- MH-89 Point of Connection

Job Number: C-17749-1302
Date Printed: April 13, 2021



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Butler, PA 724-287-1055 - Washington, PA 724-229-3362
http://www.gatewayengineers.com

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Between

Brentwood Borough, Allegheny County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of December 22, 2020

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ASSET PURCHASE AGREEMENT

THIS ASSET PURCHASE AGREEMENT (“Agreement”), dated as of December 22, 2020 (the “Effective Date”), is made and entered into by and between BRENTWOOD BOROUGH, Allegheny County, a body corporate and politic, organized and existing under the laws of the Commonwealth of Pennsylvania (the “Seller”), and Pennsylvania-American Water Company (the “Buyer”), a corporation organized and existing under the laws of the Commonwealth of Pennsylvania.

RECITALS:

WHEREAS, Seller, acting by and through the Borough Council of Seller, Allegheny County (the “Borough Council”) owns and operates a sanitary wastewater collection system (the “System”) that provides sanitary wastewater service to various customers in Brentwood Borough, Pennsylvania as set forth on Schedule A (the “Service Area”); and

WHEREAS, Buyer is a regulated public utility organized and existing under the laws of the Commonwealth of Pennsylvania that furnishes wastewater service to the public in several counties, including Allegheny County, Pennsylvania; and

WHEREAS, Buyer, in reliance upon the representations, warranties and covenants of Seller herein, desires to purchase and acquire from Seller, and Seller, in reliance upon the representations, warranties and covenants of Buyer herein, desires to sell, transfer and convey to Buyer all of the assets of the System (other than the Excluded Assets), and in connection therewith, Buyer has agreed to assume certain ongoing obligations and liabilities of Seller related to the acquired assets, all on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual representations, warranties, covenants, and agreements stated in this Agreement, the receipt and sufficiency of which hereby are acknowledged, intending to be legally bound, the Parties agree as follows:

ARTICLE I.

DEFINITIONS

In addition to the capitalized terms defined elsewhere in this Agreement, the following terms, as used in this Agreement (unless otherwise specified herein), have the meanings set forth in this Article I:

“**Acquired Assets**” has the meaning specified in Section 2.01.

“**Affiliate**” means, when used to indicate a relationship with a specified Person, a Person that, directly or indirectly, through one or more intermediaries, has a 10% or more voting or economic interest in such specified Person or controls, is controlled by or is under common control with (which includes, with respect to a managed fund or trust, the right to direct or cause the direction of the management and policies of such managed fund or trust as manager, advisor, supervisor, sponsor or trustee pursuant to relevant contractual arrangements) such specified

Appendix A-5.1 (WAD)

Person, and a Person is deemed to be controlled by another Person if controlled in any manner whatsoever that results in control in fact by that other Person (or that other Person and any Person or Persons with whom that other Person is acting jointly or in concert), whether directly or indirectly and whether through share ownership, a trust, a contract or otherwise (and for purposes of this definition, a managed fund or trust is deemed to be an Affiliate of the Person managing, supervising, sponsoring or advising such fund or trust and a limited partner in a managed fund or trust is deemed to be an Affiliate of such fund or trust and of the Person managing, supervising, sponsoring or advising such fund or trust).

“**Agreement**” has the meaning ascribed thereto in the Preamble to this Agreement (and includes all Schedules and Exhibits referred to herein), as amended, modified and supplemented from time to time in accordance with the terms hereof.

“**Assigned Contracts**” has the meaning specified in Section 2.01(c).

“**Assignment and Assumption Agreement**” has the meaning specified in Section 13.02(c).

“**Assumed Liabilities**” has the meaning specified in Section 2.04(a).

“**Authorizations and Permits**” mean all licenses, permits, franchises, authorizations, certificates, registrations, consents, orders, adjudications, variances, waivers and approvals currently in effect issued or granted by Governmental Authorities, including without limitation, environmental permits, operating permits and approvals that are held by Seller that primarily relate directly or indirectly to the operation of the System, including those described in Schedule 4.12.

“**Borough Council**” the meaning specified in the recitals of this Agreement.

“**Borough Senior Staff**” means the Borough Manager, Assistant Manager and the Borough Engineer.

“**Business Day**” means any day that is neither a Saturday, Sunday nor a day observed as a holiday by either the Commonwealth of Pennsylvania or the United States government.

“**Buyer**” has the meaning specified in the Preamble of this Agreement.

“**Buyer Fundamental Representations**” has the meaning specified in Section 8.01.

“**Buyer Indemnified Persons**” has the meaning specified in Section 8.02.

“**CERCLA**” means the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq., as amended.

“**Closing**” means the consummation of the sale and purchase of the Acquired Assets and assumption of the Assumed Liabilities, the release/waiver of liabilities and the other transactions contemplated by this Agreement, all in accordance with the terms and conditions of this Agreement and as provided for in Article XIII.

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“**Closing Date**” has the meaning specified in Section 13.01.

“**Closing Effective Time**” has the meaning specified in Section 13.01.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Confidential Information**” means any information about Buyer, Seller or the System related to the transactions contemplated by this Agreement, except that such term does not include information which the receiving Party can demonstrate (a) is generally available to or known by the public other than as a result of improper disclosure by the receiving Party, (b) is obtained by the receiving Party from a source other than the disclosing Party, and that source was not bound by a duty of confidentiality to the disclosing Party with respect to such information, or (c) is legally in the public domain.

“**Consent Order**” means that certain Administrative Consent Order between the Seller and the Allegheny County Health Department dated January 2004.

“**Customer Sewer Laterals**” has the meaning specified in Section 2.02(j).

“**Direct Claim**” has the meaning specified in Section 8.05(a).

“**Easements**” means all easements, rights of way, licenses, use agreements, occupancy agreements, leases and other agreements and appurtenances for and over the real property of third parties that are necessary for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto).

“**EDU**” means equivalent dwelling unit.

“**Effective Date**” has the meaning specified in the Preamble.

“**Environment**” means soil, surface waters, ground waters, land, stream sediments, flora, fauna, surface or subsurface strata and ambient air.

“**Environmental Claims**” means all notices of investigations, warnings, notice letters, notices of violations, Liens, orders, claims, demands, suits or administrative or judicial actions for any injunctive relief, fines, penalties, third party claims, or other claims asserting violations of Environmental Requirements or responsibility for Environmental Liabilities.

“**Environmental Conditions**” means the Release of Hazardous Materials or the presence of Hazardous Materials on, in, under or within any property (including the presence in the Environment), other than the presence of Hazardous Materials in locations and at concentrations that are naturally occurring.

“**Environmental Liabilities**” means any legal obligation or liability arising under Environmental Requirements or related to or arising out of any Environmental Condition, including those consisting of or relating to any (a) duty imposed by, breach of or noncompliance with any Environmental Requirements; (b) environmental, health or safety matters or conditions (including on-site or off-site contamination, occupational safety and health and regulation of

Appendix A-5.1 (WAD)

Hazardous Materials); (c) Remedial Action undertaken by any Person; (d) bodily injury (including illness, disability and death, and regardless of when any such bodily injury occurred, was incurred or manifested itself), property damage (including trespass, nuisance, wrongful eviction and deprivation of the use of real or personal property), or other losses or damages incurred by any other Person (including any employee or former employee of such Person); (e) any injury to, destruction of, or loss of natural resources, or costs of any natural resource damage assessments; (f) exposure of any Person to any Hazardous Materials; and (g) the presence or Release of any Hazardous Materials.

“Environmental Requirements” mean all present Laws (including common law), regulations, legally binding or otherwise enforceable requirements and Authorizations and Permits relating to human health, pollution, or protection of the Environment (including ambient air, surface water, ground water, land surface or surface strata), including (i) those relating to emissions, discharges, Releases, or threatened Releases of Hazardous Materials, and (ii) those relating to the identification, generation, manufacture, processing, distribution, use, treatment, storage, disposal, release, recovery, transport or other handling of Hazardous Materials. Without limiting the previous, the term **“Environmental Requirements”** includes (1) CERCLA; the Superfund Amendments and Reauthorization Act, Public Law 99-499, 100 Stat. 1613; the Emergency Planning and Community Right to Know Act, 42 U.S.C. Sections 11001-11050; the Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901-6992k (**“RCRA”**); the Safe Drinking Water Act, 42 U.S.C. Sections 300f to 300j-26; the Toxic Substances Control Act, 15 U.S.C. Sections 2601-2692; the Hazardous Materials Transportation Act, 49 U.S.C. Sections 5101-5127; the Federal Water Pollution Control Act, 33 U.S.C. Sections 1251-1387; the Oil Pollution Act of 1990, 33 U.S.C. Sections 2701--2761; the Clean Air Act, 42 U.S.C. Sections 7401-7671q; the Atomic Energy Act of 1954, as amended, 42 U.S.C. Sections 2011 et seq.; the Low Level Radioactive Waste Policy Act, as amended, 42 U.S.C. Section 2021b et seq.; the Occupational Safety and Health Act, 29 U.S.C. Sections 651-678, and the regulations promulgated pursuant to the above-listed federal statutes, and (2) counterpart Laws and regulations promulgated or issued by any state or local Governmental Authority, specifically including the Pennsylvania Storage Tank and Spill Prevention Act of 1989 (35 Pa. C.S.A. § 6021.101 *et. seq.*).

“EPA” means the United States Environmental Protection Agency, or a successor Governmental Authority with substantially similar power and authority thereto.

“Equipment and Machinery” means (i) all the equipment, tangible personal property, machinery, office furniture and equipment, fixtures, tooling, spare maintenance or replacement parts, environmental testing equipment, and vehicles owned or leased by Seller (including all leases of such property), which are used in the operation of the System, (ii) any rights of Seller to warranties applicable to the foregoing (to the extent assignable), and licenses received from manufacturers and Seller of any such item, and (iii) any related claims, credits, and rights of recovery with respect thereto, as listed in Schedule 4.10.

“Excluded Assets” has the meaning specified in Section 2.02.

“Excluded Liability” or **“Excluded Liabilities”** means all liabilities other than Assumed Liabilities.

Appendix A-5.1 (WAD)

“Files and Records” means all files and records of Seller relating to the System and the Acquired Assets, whether in hard copy, digital, or magnetic or other format including data, geographic information system data, plans, contracts and recorded knowledge relating to the Acquired Assets (including property records, related to the foregoing), customer and supplier records, customer lists (both current and prospective), records of sales calls, manuals, books, files, records, engineering data, procedures, systems, instructions, drawings, blueprints, plans, designs, specifications, equipment lists, parts lists, equipment maintenance records, equipment warranty information, plant plans, specifications and drawings, sales and advertising material, and computer software, whether stored on-site or off-site.

“Final Order” means a Governmental Approval by a Governmental Authority as to which (a) no request for stay of the action is pending, no such stay is in effect and if any time period is permitted by statute or regulation for filing any request for such stay, such time period has passed, (b) no petition for rehearing or reconsideration of the action is pending and the time for filing any such petition has passed, (c) such Governmental Authority does not have action under consideration on its own motion and (d) no appeal to a court or administrative tribunal or a request for stay by a court or administrative tribunal of the Government Authority’s action is pending or in effect and the deadline for filing any such appeal or request for stay has passed.

“Governmental Approval” means any consent, approval, authorization, notice, filing, registration, submission, reporting, order, adjudication or similar item of, to or with any Governmental Authority.

“Governmental Authority” or **“Governmental Authorities”** means any court, department, commission, board, bureau, municipality, municipal authority (established pursuant to the Municipal Authorities Act of the Commonwealth of Pennsylvania), agency or instrumentality of the United States, any state, county, city or political subdivision thereof, or any foreign governmental body, including without limitation, the PaPUC, the EPA, PaDEP and the Borough Council.

“Hazardous Materials” means any solid, liquid, gas, odor, heat, sound, vibration, radiation or other substance or emission which is a contaminant, pollutant, dangerous substance, toxic substance, hazardous waste, residual waste, solid waste, hazardous material or hazardous substance which is or becomes regulated by applicable Environmental Laws or which is classified as hazardous or toxic under applicable Environmental Laws (including gasoline, diesel fuel or other petroleum hydrocarbons, polychlorinated biphenyls, asbestos and urea formaldehyde foam insulation).

“Indemnified Party” means any Buyer Indemnified Persons or Seller Indemnified Persons, as applicable, entitled to indemnification pursuant to Article VIII.

“Indemnifying Party” means a Party that is obligated to indemnify the Buyer Indemnified Persons or the Seller Indemnified Persons, as applicable, pursuant to Article VIII.

“Insurable Claim” has the meaning specified in Section 6.02(e).

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“**Knowledge**” means either (i) the actual knowledge of a Representative of Buyer and the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Buyer or (ii) the actual knowledge of the Borough Council and the Borough Senior Staff, and, in the case of the Borough Senior Staff, the knowledge that each such person would reasonably be expected to obtain in the course of diligently performing his or her duties for Seller, as applicable based on the context in which the term is used.

“**Law**” means any applicable law, statute, regulation, ordinance, rule, order, judicial, administrative and regulatory decree, judgment, adjudication, consent decree, settlement agreement or governmental requirement enacted, promulgated, entered into, agreed or imposed by any Governmental Authority, as may be in effect at the relevant time or times in the context in which the term is used.

“**Liability Cap**” has the meaning specified in Section 8.05(c).

“**Lien**” means any lien in a fixed and ascertainable monetary sum, or any pledge, mortgage, deed of trust or security interest securing a fixed and ascertainable monetary sum, or any charge or claim in a fixed and ascertainable monetary sum. In addition, in connection with Real Property, any item otherwise falling within the definition of a “Lien” must be filed of record by the responsible Party in accordance with the terms of this Agreement.

“**Loss**” means any and all losses, liabilities, obligations, damages, penalties, interest, Taxes, claims, actions, demands, causes of action, judgments, reasonable attorneys’, consultants’ and other professional fees, and all other reasonable costs and expenses sustained or incurred in investigating, preparing or defending or otherwise incident to any such claim, action, demand, cause of action or judgment or the enforcement of a Party’s rights under Article VIII; *provided, however,* that “**Losses**” shall not include punitive, incidental, consequential, special or indirect damages, including loss of future revenue or income, loss of business reputation or opportunity relating to the breach or alleged breach of this Agreement, or diminution of value or any damages based on any type of multiple, except in the case of fraud or to the extent actually awarded to a Governmental Authority or other third party in respect of a Third Party Claim.

“**Material Adverse Effect**” means any result, occurrence, fact, change, event or effect that has a materially adverse effect on the business, financial condition or results of operations of the System, except that no effect arising out of or in connection with or resulting from any of the following is deemed, either alone or in combination, to constitute or contribute to a Material Adverse Effect: (i) general economic conditions or changes in those conditions; (ii) financial, banking, currency or capital markets fluctuations or conditions (either in the United States or any international market and including changes in interest rates); (iii) conditions affecting the real estate, financial services, construction, water utility or sewer utility industries generally; (iv) any existing event, circumstance, condition or occurrence of which Buyer has Knowledge as of the Effective Date; (v) any action, omission, change, effect, circumstance or condition contemplated by this Agreement or attributable to the execution, performance or announcement of this Agreement or the transactions contemplated hereby; and (vi) negligence, intentional misconduct or bad faith of Buyer or its Representatives.

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“**Missing Easements**” means, as of any particular date, each material Easement that is for or used in connection with the operation of the System or to provide continuous and unimpeded rights of way for the Acquired Assets (including access thereto) that either (a) has not been obtained by Seller as of such date or (b) if such Easement has been obtained by Seller as of such date, such Easement is unrecorded or such Easement is not sufficient to operate the System as currently conducted.

“**Outside Date**” means 365 days after the date the application to the PaPUC is accepted as complete by the PaPUC and the statutory 6-month consideration period is initiated.

“**Outstanding Indebtedness**” means the indebtedness set forth on **Schedule B**.

“**PaDEP**” means the Pennsylvania Department of Environmental Protection, or any successor Governmental Authority with substantially similar powers thereto.

“**PaPUC**” means the Pennsylvania Public Utility Commission, or any successor Governmental Authority with substantially similar powers thereto.

“**Party**” means Buyer or Seller and the term “Parties” means collectively Buyer and Seller.

“**PCB Equipment**” means PCB equipment as defined in 40 C.F.R. Part 761.

“**Pending Development Plan**” means any subdivision or land development plan that has been submitted to Seller for approval pursuant to the Pennsylvania Municipal Planning Code.

“**Permitted Liens**” means (a) Liens for Taxes not yet due and payable or being contested in good faith by appropriate procedures; (b) easements, rights of way, zoning ordinances and other similar encumbrances affecting Owned Real Property and Easements as disclosed on Schedule 4.09; (c) other than with respect to Real Property owned by Seller, Liens arising under original purchase price conditional sales contracts and equipment leases with third parties entered into in the ordinary course of business; and (d) other imperfections of title or Liens, if any, that have not had, and would not have, a Material Adverse Effect.

“**Person**” means any individual (including, the heirs, beneficiaries, executors, legal representatives or administrators thereof), corporation, partnership, joint venture, trust, limited liability company, limited partnership, joint stock company, unincorporated association or other entity or a Governmental Authority.

“**Purchase Price**” has the meaning specified in Section 3.01.

“**Real Property**” means those certain parcels of land, with the buildings, improvements, and Equipment and Machinery thereon or therein, that are part of the System and fee simple title to which is to be conveyed by Seller to Buyer as part of the Acquired Assets.

“**Regulated Asbestos Containing Material**” means regulated asbestos containing material as defined by 40 C.F.R. § 61.141.

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“**Release**” means any actual or threatened spilling, leaking, pumping, pouring, injecting, emptying, discharging, emitting, escaping, leaching, dumping, disposal, or release or migration of Hazardous Materials into the Environment, including the abandonment or discarding of barrels, containers and other receptacles containing any Hazardous Materials.

“**Remedial Action**” means any and all actions to (a) investigate, clean up, remediate, remove, treat, contain or in any other way address any Hazardous Materials in the Environment, (b) prevent the Release or threat of Release or minimize the further Release of any Hazardous Materials so it does not migrate or endanger public health or welfare or the indoor or outdoor Environment, and (c) perform pre-remedial studies and investigations and post-remedial monitoring, maintenance and care. The term “**Remedial Action**” includes any action which constitutes (i) a “removal”, “remedial action” or “response” as defined by Section 101 of CERCLA, 42 U.S.C. §§ 9601(23), (24), and (25); (ii) a “corrective action” as defined in RCRA, 42 U.S.C. § 6901 et seq.; or (iii) a “response” or “interim response” as defined in the Pennsylvania Hazardous Sites Cleanup Act, 35 P.S. §6020.103.

“**Representative**” means, with respect to any Party, any director, officer, employee, official, lender mortgagee, financier, provider of any financial instrument (or any agent or trustee acting on their behalf), partner, member, owner, agent, lawyer, accountant, auditor, professional advisor, consultant, engineer, contractor, other Person for whom such Person is at law responsible or other representative of such Person and any professional advisor, consultant or engineer designated by such Person as its “Representative.”

“**Schedules**” means the disclosure schedules delivered by Seller and Buyer, respectively, concurrently with the execution and delivery of this Agreement, and as may be supplemented and updated pursuant to Sections 9.03 and 10.04. Any disclosure set forth on any particular Schedule is deemed disclosure in reference to all Schedules comprising the Schedules to which such disclosure is reasonably apparent.

“**Seller**” has the meaning specified in the Preamble of this Agreement.

“**Seller Fundamental Representations**” has the meaning specified in Section 8.01.

“**Seller Indemnified Persons**” has the meaning specified in Section 8.03.

“**Service Area**” has the meaning set forth in the recitals to this Agreement.

“**Supplies**” means all lubricants, spare parts, fuel, chemicals, raw materials, and other supplies and inventory of Seller relating to the System and the Acquired Assets, and all rights to warranties received from suppliers with respect to the foregoing, and related claims, credits, and rights of recovery with respect thereto.

“**System**” has the meaning specified in the recitals to this Agreement and shall include the Acquired Assets and exclude the Excluded Assets.

“**Taxes**” means any federal, state, local or foreign income, gross receipts, license, payroll, employment, excise, severance, stamp, occupation, premium, windfall profits, environmental, customs duties, permit fees, capital stock, franchise, profits, withholding, social security,

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unemployment, disability, real property, personal property, parking, sales, use, transfer, registration, value added, alternative or add-on minimum, estimated or other tax, levy, impost, stamp tax, duty, fee, withholding or similar imposition of any kind payable, levied, collected, withheld or assessed at any time, including any interest, penalty or addition thereto, whether disputed or not.

“**Third Party Claim**” has the meaning specified in Section 8.05(a).

“**Threshold Amount**” has the meaning specified in Section 8.05(a).

“**Title Commitment**” has the meaning specified in Section 6.01.

“**Title Company**” has the meaning specified in Section 6.01.

“**Title Policy**” has the meaning specified in Section 2.03.

“**UCC Search**” has the meaning specified in Section 6.04.

“**Unscheduled Real Property**” has the meaning specified in Section 6.06.

“**Utility Valuation Expert**” means an expert that has applied and has been approved by the PaPUC and is currently, at the time of this Agreement, on the list of approved appraisers maintained by the PaPUC.

ARTICLE II.

TERMS OF PURCHASE AND ASSUMPTION OF LIABILITIES

Section 2.01. Purchase and Sale of Acquired Assets. Subject to the terms and conditions set forth in this Agreement, at Closing, Buyer shall purchase from Seller and Seller shall sell, transfer, assign and deliver to Buyer, free and clear of all Liens except for Permitted Liens, all of Seller's right, title and interest in and to all assets, facilities, business, goodwill, properties and rights of Seller of every kind and description, whether tangible or intangible, real, personal or mixed, wherever situated, in each case used in, held for use in, or acquired or developed for use in, the System, or otherwise related to, or arising out of the operation or conduct of the System (whether or not any such assets have any value for accounting purposes or are carried or reflected on the books or financial records of Seller), including any of the foregoing in which Seller is entitled to acquire rights in the future pursuant to Pending Development Plans (other than the rights of Seller pursuant to Section 2.02(d)) or development plans approved pursuant to this Agreement, but in all cases other than the Excluded Assets (collectively referred to as the "Acquired Assets"), including:

(a) all real property and appurtenant interests used in the operation of the System, including without limitation (i) good and marketable fee simple title to the Real Property described and identified on Schedule 4.09 hereof, and (ii) all Easements, including without limitation those identified on Schedule 4.09;

(b) all sanitary wastewater related conveyance facilities, including but not limited to all collection system mains (whether gravity or force mains), laterals (from the collection system main to the edge-of-road or curb-line when the main is located within a public right-of-way or the edge of an easement where the main is located within private property), manholes, and other related appurtenances and any billing and collections related assets necessary to own and operate the System;

(c) all contracts, licenses, and leases to which Seller is a party, including without limitation, all construction contracts, surety bonds, operation and maintenance agreements, management agreements, reserved capacity agreements, architect agreements and consultant agreements, and agreements relating to vehicles and other items of personal property as set forth on Schedule 4.13 (the "Assigned Contracts");

(d) all Supplies;

(e) all personal property and fixed assets, including all Equipment and Machinery, auxiliary equipment and plant equipment, including without limitation those items listed on Schedule 4.10 hereof;

(f) all expenses prepaid by Seller and security deposits paid by Seller;

(g) all Files and Records;

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(h) all Authorizations and Permits of or held by Seller (to the extent transferrable to Buyer under Law), including all Authorizations and Permits which are environmental permits, other operating permits and those items listed or described on Schedule 4.14; and

(i) all goodwill of the System.

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION OR WARRANTY REGARDING THE FUTURE PROFITABILITY OR FUTURE EARNINGS PERFORMANCE OF THE ACQUIRED ASSETS OR THE SYSTEM OR ANY FUTURE RATEMAKING THAT MAY BE ALLOWED BY THE PAPUC FOR ANY OF THE ACQUIRED ASSETS. NOTWITHSTANDING THE FOREGOING, ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE VALID UNTIL THE TIME OF CLOSING.

Section 2.02. Excluded Assets. Notwithstanding anything herein to the contrary, the Acquired Assets shall not include the following (the “Excluded Assets”):

- (a) all contracts, licenses and leases that are not Assigned Contracts;
- (b) the seals, organizational documents, minute books, tax returns, books of account or other records having to do with the organization of Seller;
- (c) cash and cash equivalents, including (i) accounts receivable and amounts earned by Seller but not yet billed attributable to services rendered by Seller as of or before the Closing Date and (ii) EDU fees owed to Seller at or before the Closing Date for any Pending Development Plan but not yet paid to Seller;
- (d) all insurance policies of Seller and all rights to applicable claims and proceeds thereunder;
- (e) all rights to any outstanding lien related to non-payment by a System customer existing at or before the Closing Date and all actions, suits or claims of any nature available to or being pursued by Seller, whether arising by way of counterclaim or otherwise;
- (f) all assets, properties and rights used by Seller other than those which primarily relate to the operations of the System;
- (g) the assets, properties and rights specifically set forth on Schedule 2.02(g);
- (h) all municipal separate storm sewer system assets and stormwater assets of the Seller (and any related NPDES permits);
- (i) the rights which accrue or will accrue to Seller under this Agreement and any related agreement, exhibit or schedule; and

(j) any and all connecting facilities originating from Seller's terminus point of the collection facilities at the main or edge-of-road to and throughout the customer's property, including grinder pumps, if any (the "Customer Sewer Laterals").

Section 2.03. Sale Free of Liens. After Buyer fulfills its obligations pursuant to Section 3.01(a), on the Closing Date, the Acquired Assets will be free and clear of all Liens other than Permitted Liens. Seller shall convey the Acquired Assets by appropriate special warranty or other deed (subject to Section 6.02(c)), bills of sale, endorsements, assignments and other instruments of transfer or conveyance described herein, and if not expressly described herein, then by transfer documents satisfactory in form and substance reasonably acceptable to Buyer and Seller and their counsel in their reasonable, good faith discretion. At Closing, title to the Real Property shall be good and marketable and insured by the Title Company, at the Title Company's filed rates, as a good and marketable title, free and clear of all Liens and exceptions to coverage, except for the Permitted Liens, pursuant to an owner's policy of title insurance on the American Land Title Association's ("ALTA") Owner's Form 2006, subject to the terms of Section 6.02 (the "Title Policy").

Section 2.04. Assumption of Liabilities.

(a) On the terms and conditions set forth in this Agreement and excluding the Excluded Liabilities, Buyer shall assume and pay, perform and discharge when due any and all liabilities and obligations of Seller arising out of or relating to the System or the Acquired Assets on or after the Closing, defined as the following:

(i) all liabilities and obligations under the Assigned Contracts and Authorizations and Permits resulting from events that occur or conditions that arise on or after the Closing;

(ii) any litigation initiated against Seller related to the System or the Acquired Assets resulting from events that occur on or after Closing or conditions that arise on or after the Closing;

(iii) all liabilities and obligations under the Consent Order attributable to the period after the Closing Date;

(iv) all liabilities and obligations for Taxes relating to the System, its operation, the Acquired Assets and the Assumed Liabilities attributable to the period after the Closing Date; and

(v) all other liabilities and obligations arising out of or relating to Buyer's ownership or operation of the System and the Acquired Assets on or after the Closing (all of the aforementioned liabilities in this Section 2.04(a) are referred to as the "Assumed Liabilities").

(b) At the Closing, to the extent Seller is not released therefrom, Buyer shall indemnify Seller against any Loss relating to the Assumed Liabilities in accordance with Section 8.03.

(c) Buyer shall not assume or be liable to pay any liabilities or obligations relating to the Excluded Liabilities or any other liabilities or obligations that are not Assumed Liabilities.

Section 2.05. Further Assurances. At any time and from time to time after the Closing Date, Seller shall, upon the request of Buyer, and Buyer shall, upon the request of Seller, at the cost of requesting Party, promptly execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate, (a) the sale, conveyance, transfer, assignment and delivery hereunder of the Acquired Assets to Buyer, (b) the assumption by Buyer of any of the Assumed Liabilities, (c) performance by the Parties of any of their other respective obligations under this Agreement, (d) the vesting in Buyer of all right, title and interest in the Acquired Assets and the System as provided herein, and (e) any other matters reasonably requested by a Party to carry out the provisions, purposes and intent of this Agreement.

Section 2.06. Certain Transfers; Assignment of Contracts.

(a) Notwithstanding anything to the contrary in this Agreement, and subject to the provisions of this Section 2.06(a) and Section 2.06(b), to the extent that the sale, transfer, assignment, conveyance and delivery, or attempted sale, transfer, assignment, conveyance and delivery, to Buyer of any Assigned Contract or other Acquired Asset would result in a violation of Law, or would require the consent, authorization, approval or waiver of any Person (other than the Parties), including any Governmental Authority, and such consent, authorization, approval or waiver shall not have been obtained before the Closing, this Agreement shall not constitute a sale, transfer, assignment, conveyance and delivery, or an attempted sale, transfer, assignment, conveyance and delivery, thereof (any such Acquired Asset, a “Nonassignable Asset”). Following the Closing, Seller and Buyer shall use its commercially reasonable efforts (at the cost and expense of the Party that is responsible for compliance with such Law or obtaining such consent, authorization, approval or waiver), and shall cooperate with each other, to obtain any such required consent, authorization, approval or waiver, or any release, substitution, novation or amendment required to sell, transfer, assign, convey and deliver any such Nonassignable Asset to Buyer and in no event will Buyer be required to pay any consideration therefor. Once such consent, authorization, approval, waiver, release, substitution or amendment is obtained, Seller shall sell, transfer, assign, convey and deliver to Buyer the relevant Acquired Asset to which such consent, authorization, approval, waiver, release, substitution or amendment relates for no additional consideration. Any applicable sales, transfer and other similar Taxes in connection with such sale, transfer, assignment, conveyance and delivery shall be paid fifty percent (50%) by Buyer and fifty percent (50%) by Seller.

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for

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Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an “Assigned Contract” for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer’s written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets is Nineteen Million Two Hundred Thousand Dollars (\$19,200,000) (the “Purchase Price”) which Buyer shall pay as follows at Closing:

(a) Buyer shall provide for payment in full of the total amount of Outstanding Indebtedness directly to Seller’s obligees on account of the Purchase Price;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c) and Section 6.05(e), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (remaining after the debt repayment pursuant to Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(c) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that either

Party collects billings that are attributable to service provided by the other Party, the Party holding the other Party's billing collections shall pay such amount to the other Party.

(d) In addition to the Purchase Price, Buyer shall pay Seller up to Seventy Thousand Dollars (\$70,000) as reimbursement for engineering and legal fees incurred related to this transaction to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date. Seller shall provide Buyer with invoices evidencing the amount of transaction-related fees incurred at least five (5) Business Days before the Closing Date.

Section 3.02. Fair Consideration. The consideration provided for in this Article III represents fair consideration and reasonable equivalent value for the sale and transfer of the Acquired Assets and the transactions, covenants and agreements set forth in this Agreement, which consideration was agreed upon as the result of arm's-length good faith negotiations between the Parties and their respective Representatives.

Section 3.03. Transfer Taxes. Any and all deed stamps or transfer Taxes which may be due the Commonwealth of Pennsylvania or any political subdivision in connection with the sale, transfer, assignment, conveyance and delivery hereunder of the Acquired Assets to Buyer (collectively, "Transfer Taxes"), shall be paid fifty percent (50%) by Buyer and fifty percent (50%) by Seller. The terms hereof survive Closing.

ARTICLE IV.

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller makes only the representations and warranties which are set forth in this Article IV.

As a material inducement to Buyer to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Seller represents and warrants, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply to or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 4.01. Organization. Seller is a body corporate and politic, organized and existing under the Borough Code of the Commonwealth of Pennsylvania.

Section 4.02. Power and Authority. Seller has (i) duly adopted an authorizing ordinance authorizing the transactions contemplated herein, which remains in full force and effect, (ii) duly authorized and approved the execution and delivery of this Agreement and (iii) duly authorized and approved the performance by Seller of its obligations contained in this Agreement. Seller has all requisite power and authority to own, lease and operate the Acquired Assets and the System and has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms hereof.

Section 4.03. Enforceability. This Agreement has been duly authorized, executed and delivered by Seller and is a valid and legally binding obligation of Seller, enforceable against Seller

in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 4.04. No Conflict or Violation. The execution and delivery of this Agreement by Seller, the consummation of the transactions contemplated by this Agreement and the performance by Seller of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Seller under (i) any Law or (ii) any agreement, instrument or document to which Seller is a party or by which it is bound.

Section 4.05. Consents and Approvals. Schedule 4.05 sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Seller or the performance by Seller of its obligations hereunder.

Section 4.06. Undisclosed Liabilities Except as set forth in Schedule 4.06, there are no liabilities or obligations of Seller, either accrued, absolute, contingent or otherwise, relating to the Acquired Assets, other than liabilities incurred in the ordinary course, that could not reasonably be expected to have a Material Adverse Effect on Buyer.

Section 4.07. Absence of Certain Changes or Events. Except as set forth on Schedule 4.07, since December 31, 2017, there has not been any transaction or occurrence that has resulted or is reasonably likely to result in a Material Adverse Effect and Seller has operated and maintained the System since that date in the ordinary course.

Section 4.08. Tax Matters. Except as set forth in Schedule 4.08 or as would not have a Material Adverse Effect, (i) Seller has timely paid all Taxes that may have been or may be due and payable by Seller on or before the Closing Date, arising from the ownership or operation of the Acquired Assets or the System on or before the Closing Date (ii) no taxing authority has asserted any claim against the Seller for the assessment of any additional tax liability or initiated any action or proceeding which could result in such an assertion; and (iii) the Seller has made all withholding of Taxes required to be made under all Laws and regulations, including without limitation, withholding with respect to compensation paid to employees, and the amounts withheld have been properly paid over to the appropriate taxing authorities.

Section 4.09. Real Property and Easements. Schedule 4.09 identifies all Real Property of Seller and separately identifies all Easements. Seller does not own or lease (as lessee) any real property that is used in the operation of the System. There are no pending condemnation proceedings relating to any of the Real Property or Easements nor has Seller actually received any written threats of any condemnation proceedings and, to the Knowledge of Seller, no such proceedings are threatened. Seller has not received any written notices of any violations of any Law from any Governmental Authority with respect to the Real Property or the Easements which has not been cured in all material respects and, to Seller's Knowledge, no such violations of Law exist. With respect to the Real Property, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Real Property held by third parties, (ii) Seller is in sole

possession of the Real Property, and (iii) to Seller's Knowledge there are no encroachments either way across the boundary of the Real Property, nor any dispute with adjacent real property owners over the location of boundaries or potential claims adverse to title. With respect to each Easement, (i) there are no leases, options, rights of reversions or other rights of use or rights to acquire the Easement held by third parties, and (ii) to Seller's Knowledge there are no disputes with adjacent real property owners of the owners of the real property encumbered by the Easement over the location of boundaries or potential claims adverse to title.

Section 4.10. Equipment and Machinery. All Equipment and Machinery included in the Acquired Assets is set forth and otherwise described on Schedule 4.10. Except as set forth in Schedule 4.10, Seller has good title, free and clear of all Liens (other than the Permitted Liens and Liens that will be released on or before Closing) to the Equipment and Machinery owned by Seller. Except as specifically disclosed on Schedule 4.10, all the Equipment and Machinery is owned by Seller, and none is leased or used under any conditional sales, title-retention, lease, license or similar arrangement.

Section 4.11. Environmental Compliance. Except as set forth in Schedule 4.11 or that otherwise could not be expected to have a Material Adverse Effect:

(a) The System as currently operated by Seller and all operations and activities conducted by Seller with respect to the System are in compliance in all material respects with all applicable Environmental Requirements.

(b) Seller has generated, used, handled, treated, stored and disposed of all Hazardous Materials in (i) compliance in all material respects with all applicable Environmental Requirements and (ii) a manner that has not given, and could not reasonably be anticipated to give, rise to Environmental Liabilities.

(c) Seller has not received notice of any Environmental Claims related to the System that have not been fully and finally resolved, and to the Knowledge of Seller no claims of Environmental Liabilities have been threatened allegedly arising from or relating to the System that have not been fully and finally resolved.

(d) Hazardous Materials are not present at or on the System or Acquired Assets, there has been no Release of Hazardous Materials at, on or from any part of the System or the Acquired Assets, in each case in a manner that violates any Environmental Requirements or has resulted in, or could reasonably be anticipated to give rise to, Environmental Liabilities.

(e) No Lien or activity use limitation or institutional control has been recorded affecting any Acquired Assets by any Governmental Authority due to either the presence of any Hazardous Material on or off the Acquired Assets or a violation of any Environmental Requirement.

(f) There are no underground storage tanks on or at any of the Acquired Assets. Any underground storage tanks previously located at the Acquired Assets have been removed or otherwise closed, plugged and abandoned in compliance with applicable Environmental Requirements in effect at the time of such closure.

(g) No PCB Equipment is on or at any of the Acquired Assets. Any PCB Equipment that previously existed at the Acquired Assets has been flushed of polychlorinated byphenyls or has been removed and properly disposed of, in compliance with applicable Environmental Requirements, and any remaining PCB Equipment is labeled to the extent required under applicable Environmental Requirements and being managed in compliance with applicable Environmental Requirements.

(h) No Regulated Asbestos Containing Material exists in or on the Acquired Assets in an aggregate amount that would reasonably be expected to result in an Environmental Liability; and any Regulated Asbestos Containing Material is being managed in compliance with all applicable Environmental Requirements.

(i) Seller has delivered to Buyer (1) all material environmental site assessments or reasonable and accurate summaries thereof pertaining to the System, (2) all material compliance audits or compliance assurance reviews prepared within the previous five (5) years or reasonable and accurate summaries thereof relating to compliance with Environmental Requirements by the System, and (3) reasonable and accurate summaries of, or all material documents pertaining to, any known and unresolved Environmental Liabilities incurred in relation to the System, to the extent possessed by or under the reasonable control of Seller.

Section 4.12. Authorizations and Permits. Schedule 4.12 lists or describes the Authorizations and Permits of Seller that are currently in full force and effect. Seller has made true and complete copies of all Authorizations and Permits available to Buyer; and, except as set forth on Schedule 4.12, Seller is in compliance with all terms, conditions and requirements of all Authorizations and Permits, except in each case where such violation or failure, individually or in the aggregate, would not have a Material Adverse Effect. No proceeding is pending or, to the Knowledge of Seller threatened relating to the revocation or limitation of any of the Authorizations or Permits, other than those revocations or limitations which do not individually or in the aggregate have a Material Adverse Effect.

Section 4.13. System Contracts.

(a) Schedule 4.13 contains a complete and accurate list of all the Assigned Contracts.

(b) Seller has made available to Buyer true and complete copies of all of the Assigned Contracts.

(c) All of the Assigned Contracts specified in Schedule 4.13 are in full force and effect. Seller has not, nor to the Knowledge of Seller has any other party thereto, breached any material provision of or defaulted under the material terms of, nor does any condition exist which, with notice or lapse of time, or both, would cause Seller, or to the Knowledge of Seller, any other party, to be in default under any Assigned Contract.

Section 4.14. Compliance with Law; Litigation.

(a) Seller has operated and is operating the System in compliance, in all material respects, with all Laws, Authorizations and Permits and is not in breach of any Law, Authorization

or Permit that would have a Material Adverse Effect on the operations of the System or on Buyer. There are no Authorizations or Permits from any Governmental Authority necessary for the operation of the System as currently being operated except for those Authorizations and Permits listed in Schedule 4.12.

(b) Except as set forth on Schedule 4.14, there are no facts, circumstances, conditions or occurrences regarding the System that could reasonably be expected to give rise to any environmental claims or governmental enforcement actions that could reasonably be expected to have a Material Adverse Effect, and there are no past, pending or threatened environmental claims or governmental enforcement actions against Seller that individually or in the aggregate could reasonably be expected to have a Material Adverse Effect.

(c) Except as set forth on Schedule 4.14, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller before or at the time of Closing that could reasonably be expected to have a Material Adverse Effect. As of the Effective Date, no action, suit or proceeding, at Law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Seller, threatened against Seller which could materially affect the validity or enforceability of this Agreement.

Section 4.15. Broker's and Finder's Fees. No broker, finder, or Person is entitled to any commission or finder's fee by reason of any agreement or action of Seller in connection with this Agreement or the transactions contemplated by this Agreement. Seller shall pay when due the fees and expenses of their financial and technical advisors. Seller has employed Public Financial Management, Inc., as municipal advisor to provide transaction structuring advice and to provide Seller with municipal advice relating to the sale of the System. Seller shall pay all fees owed to Public Financial Management, Inc. in connection with the transactions contemplated by this Agreement.

Section 4.16. Title to the Acquired Assets; Sufficiency.

(a) Except as set forth on Schedule 4.16(a), Seller has good and marketable title to, all Real Property, and valid leasehold interest in or valid licenses or Easements to use and access, all of the Acquired Assets, free and clear of all Liens, other than Permitted Liens and Liens which will be fully and unconditionally released at or before Closing. The use of the Acquired Assets is not subject to any Liens, other than Permitted Liens, and such use does not encroach on the property or the rights of any Person.

(b) Except as set forth on Schedule 4.16(b), the Acquired Assets are sufficient for, and constitute all the assets, properties, business, goodwill and rights of every kind and description, and services required for, the continued conduct and operation of the System by Buyer in substantially the same manner as currently conducted and operated by Seller. Except for the Excluded Assets and except as set forth on Schedule 4.16(b), (i) the Acquired Assets, taken as a whole, comprise all the assets, properties, business, goodwill and rights of every kind and description used or held for use in, or useful or necessary to the operation of the System as currently operated by Seller, and (ii) there are no assets, properties, business, goodwill, rights or services used in the conduct or operation of the System that are owned by any Person other than Seller that

will not be licensed or leased to Buyer under valid, current license arrangements or leases. None of the Excluded Assets are material to the System.

Section 4.17. Pending Development Plans. Schedule 4.17 sets forth a full and complete list of all Pending Development Plans as of the Effective Date. Each Pending Development Plan, if consummated could result in the expansion of the Service Area. Seller provides no assurances whatsoever that any development or expansion of the Service Area associated with any Pending Development Plan will actually be undertaken or completed. The Parties expect that Schedule 4.17 will change from time to time between the Effective Date and Closing, and the Seller shall provide updates to Schedule 4.17 pursuant to Section 9.03.

ARTICLE V.

REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer makes only the representations and warranties which are set forth in this Article V.

As a material inducement to Seller to enter into this Agreement and to consummate the transactions contemplated by this Agreement, Buyer represents and warrants to Seller, as of the Effective Date and as of the Closing Date (except to the extent any of the following representations and warranties specifically apply or relate to another date, in which event such representations and warranties shall be true and correct as of such other date), as follows:

Section 5.01. Organization. Buyer is duly organized, validly existing and in good standing under the laws of the state of its organization.

Section 5.02. Authorization and Validity of Agreement. Buyer has the power and authority to enter into this Agreement and to do all acts and things and execute and deliver all other documents as are required hereunder to be done, observed or performed by it in accordance with the terms hereof. This Agreement has been duly authorized, executed and delivered by Buyer and is a valid and legally binding obligation of Buyer, enforceable against it in accordance with the terms hereof, subject only to applicable bankruptcy, insolvency and similar laws affecting the enforceability of the rights of creditors generally and to general principles of equity.

Section 5.03. No Conflict or Violation. The execution and delivery of this Agreement by Buyer, the consummation of the transactions contemplated hereby and the performance by Buyer of the terms, conditions and provisions hereof has not and will not contravene or violate or result in a material breach of (with or without the giving of notice or lapse of time, or both) or acceleration of any material obligations of Buyer under (i) any Law, (ii) any material agreement, instrument or document to which Buyer is a party or by which it is bound or (iii) the articles, bylaws or governing documents of Buyer.

Section 5.04. Consents and Approvals. Schedule 5.04, sets forth a list of each consent, waiver, authorization or approval of any Governmental Authority, or of any other Person, and each declaration to or filing or registration with any Governmental Authority required in connection with the execution and delivery of this Agreement by Buyer or the performance by Buyer of its obligations hereunder.

Section 5.05. Broker's and Finder's Fees. No broker, finder or third party is entitled to any commission or finder's fee in connection with this Agreement or the transactions contemplated by this Agreement.

Section 5.06. Financial Wherewithal. Upon Closing, and after giving effect to the consummation of the transactions contemplated hereby and the incurrence of any indebtedness in connection therewith, Buyer shall have the financial ability and will have sufficient working capital for its needs and anticipated needs to operate the System as a certificated public utility system regulated by the PaPUC, authorized, among things, to provide wastewater utility services to retail residential, commercial and industrial customers in the System.

Section 5.07. Sufficient Funds. Buyer shall have sufficient funds available at Closing to consummate the transactions contemplated by this Agreement, to pay the Purchase Price in accordance with Article III and expenses related to the transactions contemplated by this Agreement, and on and after Closing, to generally provide ownership, operation and capital for the operations and capital needs of the System following the Closing, and assuring that the customers of the System will receive safe, adequate and reliable wastewater service equal to or better than such customers would have received without the transactions contemplated by this Agreement and at all times consistent with the provisions of the Pennsylvania Public Utility Code, 66 Pa. C. S. § 101 *et seq.*, and Law.

Section 5.08. Independent Decision. Except as expressly set forth in this Agreement, or any of the related agreements, Buyer acknowledges that (a) neither Seller nor any other Person has made any representation or warranty, express or implied, as to the accuracy or completeness of the System or information provided to Buyer, and (b) neither Seller nor any other Person shall have or be subject to any liability to Buyer or any other Person resulting from the distribution to Buyer, or Buyer use of, any information regarding the System or Acquired Assets that has been furnished or made available to Buyer and its Representatives. Buyer acknowledges that other than as expressly set forth in this Agreement or any related agreement, Seller expressly disclaims any warranty of income potential, operating expenses or costs of operation of the System.

Section 5.09. Scheduled Matters. Buyer acknowledges that: (a) the inclusion of any matter on any Schedule shall not be deemed an admission by Seller that such listed matter is material or that such listed matter has or could have a material adverse effect or constitutes a material liability with respect to the Acquired Assets; (b) matters reflected in the Schedules are not necessarily limited to matters required by this Agreement to be reflected in such Schedules; and (c) such additional matters are set forth for informational purposes only and do not necessarily include other matters of a similar nature.

Section 5.10. Independent Investigation. Buyer acknowledges that it has conducted an independent investigation of the financial condition, assets, liabilities, properties and projected capital needs and operations of the System in making its determination as to the propriety of the transaction contemplated by this Agreement and, in entering into this Agreement and related agreements, has relied solely on the results of its investigation and on the representations and warranties of Seller expressly contained in Article IV of this Agreement.

Section 5.11. Litigation. Buyer is not in breach of any Law that could have a material adverse effect on the operations of the System or Buyer. Neither Buyer nor any Affiliate of Buyer is listed on any of the following lists maintained by the Office of Foreign Assets Control of the United States Department of the Treasury, the Bureau of Industry and Security of the United States Department of Commerce or their successors, or on any other list of Persons with which Seller may not do business under Law: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List and the Debarred List. Except as set forth on Schedule 5.11, no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, is pending nor, to the Knowledge of Buyer, threatened against Buyer before or at the time of Closing, which will have a material adverse effect on (i) the transactions contemplated by this Agreement or (ii) the validity or enforceability of this Agreement.

ARTICLE VI.

TITLE TO REAL PROPERTY; EASEMENTS

Section 6.01. Evidence of Title. Subject to Section 6.06, with respect to all Real Property, Buyer shall obtain at its sole cost and expense a commitment for a Title Policy (the “Title Commitment”), issued by a title insurance company selected by Buyer and licensed to insure title to real property by the Commonwealth of Pennsylvania (the “Title Company”). Promptly following the Effective Date, Buyer shall order the Title Commitment from the Title Company and shall provide Seller evidence of the order. Notwithstanding anything to the contrary in Section 6.02(a), a purported Objection Notice is void with respect to any parcel of Real Property if, within thirty (30) Business Days after the Effective Date, Buyer has not ordered the Title Commitment from the Title Company for such parcel of Real Property and provided Seller with evidence of the order.

Section 6.02. Objections to Title.

(a) Notice of Objections. Within thirty (30) Business Days of Buyer’s receipt of the Title Commitment for any of the parcels of Real Property, Buyer shall deliver to Seller a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of all exception documents listed in the Title Commitment, along with Buyer’s notice to Seller of any exceptions to title set forth on Schedule B of the Title Commitment to which Buyer objects (the “Objection Notice”). The exceptions listed in the Title Objection Notice are referred to as the “Title Objection Items.” None of the following are Title Objection Items: (a) Permitted Liens, (b) items that pertain to Buyer or any requirements, conditions or obligations of Buyer, (c) matters of record that are set forth in the Title Commitment and adversely restrict or prevent the use of the Real Property in the operation of the System and (d) standard Title Company exceptions (such as the “survey” exception). Any Objection Notice which does not include a true, correct and complete copy of the Title Commitment and true, correct, complete and legible copies of any and all exception documents listed in the Title Commitment is void. If Buyer provides Seller with an Objection Notice, Seller shall use its commercially reasonable efforts to have all of the Title Objection Items cured, satisfied or released of record, or insured over, by the Title Company (“Cure” or “Cured”) before or as of the Closing. At or before the Closing, Seller shall deliver written evidence to Buyer, in form and substance reasonably satisfactory to Buyer and at Seller’s cost and expense, evidencing that Seller has Cured all Title Objection Items.

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(b) Liens. Without limiting Seller's obligations pursuant to Section 6.02(a), before or as of the Closing, Seller shall, at its sole cost and expense, Cure any Lien encumbering the Real Property which can be Cured by the payment of money (other than Permitted Liens).

(c) Title Endorsements/Survey. Buyer shall pay for any endorsements required by Buyer or any mortgagee of Buyer to Buyer's Title Policy. If any survey is required by Buyer or its mortgagee, either as a condition to any endorsement or otherwise, Buyer shall pay to obtain the survey and all related costs and expenses. If Buyer obtains a survey of any Real Property and wants the deed to contain the legal description based on a survey, if the same is not identical to the legal description contained in Seller's deed of record, Seller is not obligated to include the same in the deed to Buyer unless the survey is certified to Seller and such description is included in the deed on a "quitclaim" basis only and without warranty of title.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Real Property in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Real Property as provided for in this Agreement. For the avoidance of doubt, Seller shall provide such title as soon as reasonably practicable in accordance with Section 6.01.

(e) Insurable Claims. To the extent any Claim for Losses under Article VIII is an Insurable Claim, Buyer shall assert and pursue with reasonable diligence the Insurable Claim against the Title Company (which includes commencing litigation and diligently prosecuting the Insurable Claim to a Final Order) before pursuing a Claim for Losses under Article VIII. Following a non-favorable Final Order that substantially denies the relief sought by Buyer from the Title Company in connection with the Insurable Claim (each a "Non-Favorable Judgment"), Buyer may, following such Non-Favorable Judgment, pursue Seller with a Claim for Losses under Article VIII (any Claim against Seller following an attempted Insurable Claim against the Title Company is a "Residual Title Claim"). Notwithstanding anything to the contrary in Article VIII, Buyer must assert a Claim for Losses based upon a Residual Title Claim within sixty (60) day of the Non-Favorable Judgment. For purposes of this Section 6.02(e), an "Insurable Claim" means a Claim that: (i) arises out of Buyer's discovery of a title defect or encumbrance with respect to any of the Real Property following the Closing Date that materially restricts or prevents the use of such Real Property in the operation of the System; and (ii) is a claim against the Title Company under the Title Policy. Buyer acknowledges that any Claims that it could otherwise bring as a breach of a covenant of title under the special warranty deed to the Real Property is included within the Claim for Losses under Article VIII and is subject to the terms of this Section 6.02(e) of first pursuing the same as an Insurable Claim.

Section 6.03. Title Expenses. Irrespective of whether Closing occurs, Buyer shall pay all costs and expenses for obtaining the Title Commitment, Title Policy and any survey. Seller shall pay for all expenses to release, satisfy or bond over any Liens, and to effect the Cure of any Title Objection Items that Seller undertakes to Cure, including the cost of any title endorsement to insure Buyer against any adverse effect of such Title Objection Items.

Section 6.04. UCC Search; Releases. Not later than ninety (90) Business Days after the Effective Date, Buyer shall obtain at its sole cost and expense a Uniform Commercial Code search against Seller covering any of the personal property or fixtures included among the Acquired

Assets from the Office of the Secretary of the Commonwealth of Pennsylvania and the Recorder of Allegheny County, Pennsylvania (the “UCC Search”). On or before the Closing, Seller shall obtain at its sole cost and expense releases of any and all Liens in any of the Acquired Assets which are not Permitted Liens. Seller shall provide the form of the releases of any Liens to Buyer on or before the Closing Date.

Section 6.05. Easements.

(a) Within sixty (60) Business Days after the Effective Date, Seller shall, at its sole cost and expense, cause an abstractor selected by Seller and reasonably acceptable to Buyer and the Title Company (the “Abstractor”), to perform a search of the public land records of Allegheny County, based on Seller’s records and plans of the System (and such other sources of information as are reasonably related thereto), by means of searching the grantee index in the names of Seller and such other searches as the Abstractor may reasonably make, to (i) identify and provide Buyer with title information on all recorded Easements, and (ii) together with Seller, identify all Missing Easements. During this process, as the Abstractor provides written search results to Seller (including updated versions of the Abstractor search result chart), Seller will promptly provide the same to Buyer for its review, and Seller shall, or shall cause the Abstractor to, provide Buyer with periodic updates (which shall occur no less frequently than bi-weekly) on the status of the activities set forth in the previous sentence. Within thirty (30) Business Days after the Effective Date, Seller shall develop a map of all collection pipes, services, pump stations, manholes of the System and identify each parcel within the Service Area that Seller’s sanitary wastewater conveyance facilities encroaches upon private property (“Easement Map”). The Easement Map will be used in connection with the Abstractor’s report to identify the Missing Easements Seller is obligated to obtain under Section 6.05.

(b) Notice of Objections. Within forty five (45) days of Buyer’s receipt from the Seller (or the Abstractor) of the information described in subsection (a) above, Buyer shall deliver to Seller written notice identifying the encumbrances on the Easements that, in Buyer’s reasonable opinion, could materially and adversely restrict or prevent the use of the Easements in the operation of the System, (an “Easement Objection Notice”). Buyer shall not be permitted to include in its Easement Objection Notice any encumbrances that: (a) are Permitted Liens, (b) pertain to the Buyer or any requirements, conditions or obligations of the Buyer, or (c) are matters of record and set forth in the Abstractor’s search results that do not, in Buyer’s reasonable opinion, materially and adversely restrict or prevent the use of the Easements in the operation of the System (specifically including mortgages or other instruments securing indebtedness incurred by the owner of the land burdened by the Easement) (such exceptions objected to in the Objection Notice, the “Easement Objection Items”). In the event that Buyer provides the Seller with an Easement Objection Notice, the Seller shall use commercially reasonable efforts to have the Easement Objection Items Cured, prior to or as of the Closing. At or prior to the Closing, the Seller shall deliver documentation to Buyer, in form and substance reasonably satisfactory to Buyer, evidencing that Seller has Cured all objections identified in the Easement Objection Notice. If Seller is unable to Cure any Objection Item pursuant to this Section 6.05(b), Seller shall: (i) grant Buyer a license pursuant to Section 6.05(d); and (ii) Seller’s obligation to assign such Easements to Buyer pursuant to Section 2.01(a) survives Closing.

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(c) If during the process of Abstractor's review and investigation of the Allegheny County land records, Seller determines, based on the Abstractor's investigation, that there is a Missing Easement, Seller shall take any and all actions (including the use of its power of condemnation) to obtain any Missing Easements so that the same may be sold, assigned, transferred and conveyed to Buyer at the Closing pursuant to the terms and conditions of this Agreement. All costs and expenses incurred in connection with obtaining each Missing Easement (including any payment to a landowner in connection with condemnation, in lieu of condemnation or otherwise) shall be paid by Seller and no additional consideration shall be payable by Buyer for any Missing Easement. If Seller has not obtained all Missing Easements by the date that is sixty (60) Business Days after the date that Abstractor has completed its review of the County land records and delivered the last results to Seller (the "Abstract Completion Date"), then, no later than thirty (30) Business Days after the Abstract Completion Date (but in any event no later than thirty (30) days before the Closing), Seller shall commence and file in the Court of Common Pleas, Allegheny County, a condemnation or eminent domain proceeding to obtain any and all such Missing Easements. For the purposes of clarity, upon obtaining each Missing Easement (including upon the final resolution of a condemnation proceeding), each Missing Easement that has been acquired or obtained by Seller will be considered an Easement.

(d) License at Closing. Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access Easements in order to permit Buyer to operate and maintain the System until such time as Buyer is provided title to the Easement.

(e) Escrow at Closing for Missing Easements. For all of the Missing Easements listed on attached Schedule 6.05(e) as of the Closing Date, Seller will have additional time following the Closing Date to secure and assign and transfer the Missing Easements to Buyer. Seller shall diligently pursue and deliver the Missing Easements on or before the third (3rd) anniversary of the Closing Date, subject to any extension as permitted by Escrow Agreement, in the form attached as Exhibit C, that will require, among other things, the funding of an escrow account in the amount of Two Thousand Dollars (\$2,000) for each Missing Easements set forth on Schedule 6.05(e) as of the Closing Date to secure the Seller's obligations under this Agreement and the Escrow Agreement.

Section 6.06. Unscheduled Property. The Parties acknowledge that Seller may own interests in or have the legal right to use or occupy the Real Property and Easements that is necessary or essential to the operation of the System and that is not specifically identified in Schedule 4.09 (the "Unscheduled Real Property"). If the Parties discover before or after the Closing Date, one or more parcels of Unscheduled Real Property, the discovering Party shall notify the non-discovering Party of the discovery. In addition to its obligations in Section 2.03, Seller shall convey, assign or otherwise transfer any rights to each parcel of Unscheduled Real Property, without additional consideration payable by Buyer, in such a manner as to provide Buyer with reasonable assurances that Buyer may use or occupy the Unscheduled Real Property as it was used by Seller as of the Effective Date.

ARTICLE VII.

OTHER AGREEMENTS

Section 7.01. Taxes. Seller shall pay any and all Taxes, if any, arising out of the ownership of the Acquired Assets and out of the operation of the System before the Closing.

Section 7.02. Cooperation on Tax Matters. Seller shall furnish or cause to be furnished to Buyer, as promptly as practicable, whether before or after the Closing Date, such information and assistance relating to the System as is reasonably necessary for the preparation and filing by Buyer of any filings relating to any Tax matters.

Section 7.03. Rates.

(a) **Rates.** Buyer shall implement the Seller's sanitary wastewater rates then in effect at Closing, as set forth on Schedule 7.03(a), and inclusive of any PaPUC permitted or required surcharges or pass-through costs (the "Base Rate") as Buyer's effective sanitary wastewater rates, provided that the rates reflected on Schedule 7.03(a) (at Closing) shall not be lower than those in effect on the date the Effective Date. The Base Rate shall not be increased until after the second anniversary of the Closing Date. Buyer intends to bill customers on a monthly basis.

(b) **PaPUC Approval.** The Buyer shall include the rate provisions of Sections 7.03(a) in its requested PaPUC Governmental Approval.

Section 7.04. Buyer Taxpayer. From and after the Closing Date, Buyer acknowledges that, upon conveyance of the Acquired Assets to Buyer, Buyer will be subject to, among other Taxes, real estate Taxes, which Buyer shall pay when due.

Section 7.05. PaPUC Approval.

(a) Promptly after the Effective Date, Buyer shall timely initiate and faithfully prosecute the necessary proceedings to obtain from the PaPUC (i) the issuance of certificates of public convenience to Buyer to provide wastewater services in the Service Area and (ii) the approval of the acquisition of the System by Buyer under terms and conditions that are reasonably acceptable to Seller and Buyer. Seller shall cooperate with and assist Buyer in proceedings before the PaPUC.

(b) Buyer and Seller hereby agree that the procedures for determining fair market value of the System and Acquired Assets outlined in subsection (a) of Section 1329 of Title 66 of the Pennsylvania Consolidated Statutes ("Section 1329") shall be utilized and filed with the PaPUC as contemplated by Section 1329.

(c) The fees and expenses related to engaging the licensed engineer for such Section 1329 determination shall be paid fifty percent (50%) by Buyer and fifty percent (50%) by Seller.

(d) To the extent requested by Buyer, Seller shall participate in any proceedings before the PaPUC as an intervenor and active party. Seller may be represented by the counsel of its choice in any such proceedings.

(e) Buyer, in Buyer's first base rate proceeding with respect to the System following the Closing, shall propose the use of statutory and regulatory mechanisms available to benefit the Buyer's acquired customers for ratemaking purposes.

Section 7.06. Remedies for Breach of Article VII Agreements. If Buyer breaches of any of the covenants and agreements set forth in this Article VII following Closing, in addition to all other rights and remedies available at law or in equity, including specific performance and/or injunctive relief, Seller may commence proceedings before the PaPUC seeking enforcement of such covenants and agreements.

Section 7.07. Utility Valuation Experts. Buyer and Seller shall each be responsible for the costs associated with their respective Utility Valuation Expert for the preparation and completion of their respective Utility Valuation Expert's appraisal report and any additional work by their respective Utility Valuation Expert necessary to assist in the processing and prosecution of the application to the PaPUC in regard to this transaction under Section 1329.

Section 7.08. Restoration of Property. Buyer shall at all times act in accordance with all requirements imposed by the PaPUC and with the terms of any permits or approvals issued by Seller with regard to restoration of property on which construction or repair and replacement work is undertaken.

Section 7.09. EDU Allocations. In connection with EDU allocations, Buyer shall at all times act in compliance with Seller's ordinances, including those with respect to zoning and land use, the Seller's Act 537 plan and the Seller's comprehensive plans.

Section 7.10. Covenant Survival. The covenants set forth in this Article survive Closing.

ARTICLE VIII.

INDEMNIFICATION

Section 8.01. Survival. All representations and warranties contained in this Agreement shall survive until twelve (12) months following the Closing Date, except that (a) the representations and warranties of Seller set forth in Section 4.01 (Organization), Section 4.02 (Power and Authority), Section 4.03 (Enforceability) and Section 4.15 (Brokers' and Finders' Fees) (collectively, the "Seller Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law, and (b) the representations and warranties of Buyer set forth in Section 5.01 (Organization), Section 5.02 (Authorization and Validity of Agreement), and Section 5.05 (Brokers' and Finders' Fees) (collectively, the "Buyer Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by Law. The covenants and agreements of the Parties contained in this Agreement survive the Closing indefinitely or for the shorter period explicitly specified therein, except that for those covenants and agreements that survive for a shorter period, breaches thereof survive indefinitely or until the latest date permitted by Law. Notwithstanding the preceding sentences, (x) any breach of representation, warranty, covenant or agreement in respect of which indemnity may be sought under this Agreement shall survive the time at which it would otherwise terminate pursuant to the preceding sentences, if notice of the inaccuracy or breach thereof giving rise to such right of

indemnity shall have been given to the Party against whom such indemnity may be sought before such time, and (y) nothing contained in this Section 8.01 shall limit in any way any rights a Party may have to bring claims grounded in fraud, intentional misrepresentation or willful misconduct, which rights shall survive the Closing indefinitely.

Section 8.02. Indemnification by Seller. To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Seller shall indemnify, defend and hold harmless, Buyer and its successors and Affiliates and their respective employees, officers, directors, trustees and agents (the “Buyer Indemnified Persons”), from and against any and all claims for Losses arising from or relating to: (a) any misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement (without regard to any materiality, Material Adverse Effect or related qualifications in the relevant representation or warranty (except where such provision requires disclosure of lists of items of a material nature or above a specified threshold)); (b) any breach or nonfulfillment of any of the covenants or agreements of Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Seller before the Closing pursuant to this Agreement; or (c) any Excluded Liability or Excluded Asset.

Section 8.03. Indemnification by Buyer. To the maximum extent permitted by Law and subject to the terms and conditions of this Article VIII, Buyer shall defend, indemnify and hold harmless Seller and its successors and Affiliates and each of their respective employees, officers, directors and agents (the “Seller Indemnified Persons”) from and against any and all claims for Losses arising from or relating to: (a) any material misrepresentation as to, or any material inaccuracy in, any of the representations and warranties of Buyer contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (b) any material breach of any of the covenants or agreements of Buyer contained in this Agreement or in any exhibit, schedule certificate or other instrument or document furnished or to be furnished by Buyer pursuant to this Agreement; (c) any Assumed Liability as and when payment and performance is due, including without limitation any liability related to any claims by any Governmental Authority; (d) Buyer’s actions involving Environmental Laws, Hazardous Materials or environmental claims from and after the Closing Date; or (e) the ownership, operation or control of the Acquired Assets or the System from and after the Closing Date.

Section 8.04. Indemnification Procedure.

(a) Third Party Claims. If any Indemnified Party receives notice of the assertion or commencement of any action, suit, claim or other legal proceeding made or brought by any Person who is not a party to this Agreement or an Affiliate of a party to this Agreement or a representative of the foregoing (a “Third Party Claim”) against such Indemnified Party with respect to which the Indemnifying Party may be obligated to provide indemnification under this Agreement, the Indemnified Party shall promptly notify the Indemnifying Party thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Third

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Party Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Loss that has been or may be sustained by the Indemnified Party. The Indemnifying Party may participate in, or by giving notice to the Indemnified Party (and subject to the other requirements herein) to assume the defense of any Third Party Claim at the Indemnifying Party's expense and by the Indemnifying Party's own counsel (which counsel shall be reasonably acceptable to the Indemnified Party), so long as (i) the Indemnifying Party notifies the Indemnified Party, within ten (10) Business Days after the Indemnified Party has given notice of the Third Party Claim to the Indemnifying Party (or by such earlier date as may be necessary under applicable procedural rules in order to file a timely appearance and response) that the Indemnifying Party is assuming the defense of such Third Party Claim, *provided*, that if the Indemnifying Party assumes control of such defense it must first agree and acknowledge in such notice that the Indemnifying Party is fully responsible (with no reservation of any rights other than the right to be subrogated to the rights of the Indemnified Party) for all Losses relating to such Third Party Claim, (ii) the Indemnifying Party conducts the defense of the Third Party Claim actively and diligently and at its own cost and expense, and (iii) the Third Party Claim (A) does not involve injunctive relief, specific performance or other similar equitable relief, any claim in respect of Taxes, any Governmental Authority, any criminal allegations, or any potential damage to the goodwill, reputation or overriding commercial interests of Buyer or its Affiliates, (B) is not one in which the Indemnifying Party is also a party and joint representation would be inappropriate or there may be legal defenses available to the Indemnified Party which are different from or additional to those available to the Indemnifying Party, or (C) does not involve a claim which, upon petition by the Indemnified Party, the appropriate court rules that the Indemnifying Party failed or is failing to vigorously prosecute or defend. The Indemnified Party shall reasonably cooperate in good faith in such defense. If the Indemnifying Party assumes the defense of any Third Party Claim, subject to Section 8.04(b), it may take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party may, at its own cost and expense, to participate in the defense of any Third Party Claim with counsel selected by it subject to the Indemnifying Party's right to control the defense thereof. If the Indemnifying Party elects not to compromise or defend such Third Party Claim or fails to promptly notify the Indemnified Party in writing of its election to defend as provided in this Agreement, the Indemnified Party may, subject to Section 8.04(b), pay, compromise, defend such Third Party Claim and seek indemnification for any and all Losses based upon, arising from or relating to such Third Party Claim. Seller and Buyer shall reasonably and in good faith cooperate with each other in all reasonable respects in connection with the defense of any Third Party Claim, including making available records relating to such Third Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party, management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third Party Claim.

(b) Settlement of Third Party Claims. Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into settlement of any Third Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld or delayed), except as provided in this Section 8.04(b). If a firm offer is made to settle a Third Party Claim without leading to liability or the creation of a financial or other obligation on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all liabilities and obligations in connection

with such Third Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall promptly notify the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within fifteen (15) days after its receipt of such notice, the Indemnified Party may continue to contest or defend such Third Party Claim and in such event, the maximum liability of the Indemnifying Party as to such Third Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third Party Claim, the Indemnifying Party may settle the Third Party Claim upon the terms set forth in such firm offer to settle such Third Party Claim. If the Indemnified Party has assumed the defense pursuant to Section 8.04(a), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld or delayed).

(c) **Direct Claims.** Any claim by an Indemnified Party with respect to any Loss which does not arise or result from a Third Party Claim (a “Direct Claim”) shall be asserted by the Indemnified Party giving the Indemnifying Party prompt notice thereof. The failure to give such prompt notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits material rights or material defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Direct Claim in reasonable detail and shall indicate the estimated amount, if reasonably practicable, of the Losses that have been or may be sustained by the Indemnified Party. The Indemnifying Party shall have thirty (30) days after its receipt of such notice to respond in writing to such Direct Claim. During such thirty (30) day period, the Indemnified Party shall reasonably cooperate and assist the Indemnifying Party in determining the validity and amount of such Direct Claim. If the Indemnifying Party does not so respond within such thirty (30) day period, by delivery of notice disputing the basis or amount of the Direct Claim, the Indemnifying Party shall be deemed to have rejected such claim, in which case the Indemnified Party shall be free to pursue such remedies as may be available to the Indemnified Party on the terms and subject to the provisions of this Agreement. If the Indemnifying Party has timely disputed its indemnity obligation for any Losses with respect to such Direct Claim, the Parties shall proceed in good faith to negotiate a resolution of such dispute and, if not resolved through negotiations, such dispute may be resolved by litigation in an appropriate court of jurisdiction determined pursuant to this Agreement.

Section 8.05. Limitations on Indemnification Obligations.

(a) Subject to the other limitations contained in this Section 8.05, neither Buyer nor Buyer Indemnified Persons shall seek indemnification pursuant to Section 8.02(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement or for breach of Seller’s Fundamental Representations) unless the aggregate amount of Losses incurred by Buyer and Buyer Indemnified Persons under this Agreement exceeds one (1) percent of Purchase Price in the aggregate (the “Threshold Amount”), in which case Seller will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(b) Subject to the other limitations contained in this Section 8.05 neither Seller nor the Seller Indemnified Persons shall seek indemnification pursuant to Section 8.03(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement) unless the

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aggregate amount of Losses incurred by Seller and Seller Indemnified Persons under this Agreement exceeds the Threshold Amount, in which case Buyer will then be liable only for Losses in excess of the Threshold Amount, except that the limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct.

(c) Except in the case of fraud, intentional misrepresentation or willful misconduct (for which all applicable legal and equitable remedies will be available to Buyer), the Buyer Indemnified Parties shall only be entitled to assert claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations, which shall not be limited by this Section 8.05(c)) up to the aggregate amount of five (5) percent of Purchase Price (the “Liability Cap”), which shall represent the sole and exclusive remedy of Buyer and the other Buyer Indemnified Parties for any such claims under Section 8.02(a) (other than claims with respect to breaches of any of the Seller Fundamental Representations or in the case of fraud, intentional misrepresentation or willful misconduct which shall not be subject to the Liability Cap, but shall be capped at the Purchase Price).

(d) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be limited to the amount of any liability or damage that remains after deducting therefrom any insurance proceeds actually received and any indemnity, contribution or other similar payment received or reasonably expected to be received by the Indemnified Party in respect of any such claim. The Indemnified Party shall use its commercially reasonable efforts to recover under insurance policies or indemnity, contribution or other similar agreements for any Losses before seeking indemnification under this Agreement.

(e) Payments by an Indemnifying Party pursuant to Section 8.02 or Section 8.03 in respect of any Loss shall be reduced by an amount equal to any Tax benefit realized or reasonably expected to be realized as a result of such Loss by the Indemnified Party.

(f) Each Indemnified Party shall take, and cause its Affiliates to take, all reasonable steps to mitigate any Loss upon becoming aware of any event or circumstance that would be reasonably expected to, or does, give rise thereto, including incurring costs only to the minimum extent necessary to remedy the breach that gives rise to such Loss.

(g) Subject to the provisions of Sections 3.01, 7.06, 15.11 and any other provisions for equitable relief and/or specific performance, the Parties’ sole and exclusive remedy with respect to any and all claims for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article VIII. Each Party hereby waives, to the fullest extent permitted under Law, any and all rights, claims and causes of action for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement it may have against the other Party and their Affiliates and each of their respective representatives arising under or based upon any Law, except pursuant to the indemnification provisions set forth in this Article VIII. Nothing in this Section 8.05(g) shall limit any Party’s right to seek and obtain any equitable relief and/or specific performance pursuant to this Agreement.

Section 8.06. Knowledge of Breach. Neither Party shall be liable for any Losses based upon or arising out of any inaccuracy in or breach of any representations or warranties of such Party contained in this Agreement if the Party claiming such Losses had Knowledge of such inaccuracy or breach before the Closing.

ARTICLE IX.

PRE-CLOSING COVENANTS OF SELLER

Section 9.01. Operation of the System. Except as otherwise expressly permitted by this Agreement, as required by Law or with the prior written consent of Buyer (which consent shall not be unreasonably withheld, delayed or conditioned), from the Effective Date until the Closing, Seller shall (i) operate and manage the System only in the ordinary course of business in accordance with past practices and procedures, (ii) collect accounts receivable and pay accounts payable in the ordinary course and in a manner consistent with its past practices, (iii) comply in all material respects with all Laws and Authorizations and Permits, (iv) use its commercially reasonable efforts to maintain and preserve intact the business and assets of the System and preserve the rights, franchises, goodwill and relationships of Seller and the System and its customers, lenders, suppliers, regulators, the Authority and others having business relationships with Seller and the System, (iv) continue to collect accounts receivable, EDU Fees, and sewer rents in a manner consistent with past practice, without discounting such accounts receivable, EDU Fees, and sewer rents; (v) perform all of its obligations under all Assigned Contracts; and (vi) not take any action, or omit to take any action, that would cause to occur a fact, circumstance, condition or occurrence regarding the System or any of the Acquired Assets that could reasonably be expected to have a Material Adverse Effect.

Section 9.02. Cooperation. Seller shall reasonably cooperate with Buyer and its employees, attorneys, accountants and other agents and, generally, act in reasonably good faith to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated by this Agreement.

Section 9.03. Supplements and Updates. Seller shall promptly deliver to Buyer any supplemental information updating the information set forth in the representations and warranties set forth in Article IV of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as provided in such representations and warranties) as if then made. Following the Effective Date, Seller shall promptly advise Buyer of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

Section 9.04. Consents and Approvals. Promptly after the execution of this Agreement, or as required by Law, except as otherwise expressly provided herein, Seller shall file all applications and reports that are required to be filed by Seller with any Governmental Authority as set forth on Schedule 4.05. Seller shall also promptly provide all information that any Governmental Authority may require in connection with any such application or report. Seller shall use its commercially reasonable efforts to obtain each consent, waiver, authorization or approval of any kind from any Person in connection with the transactions contemplated by this Agreement. All authorizations of any Governmental Authority necessary to consummate the

transactions contemplated by this Agreement will be in form and content reasonably satisfactory to Buyer and Seller before Closing and shall be final and non-appealable. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 9.05. Pending Development Plan Agreements / Future Developments. Seller shall enforce all of its rights and the counterparties' obligations under any agreements relating to Pending Development Plans in existence as of the Effective Date, which shall not be amended without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide or withhold such consent to Seller within fifteen (15) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. After the Effective Date, Seller shall not enter into any new agreements (including Land Development Agreements and Financial Security Agreements) with landowners regarding the construction of any sewer facilities which, upon completion of construction, will be transferred to Buyer pursuant to Section 2.01 hereof without notice to and the consent of Buyer, which consent shall not be unreasonably withheld and Buyer shall provide such consent to Seller within seven (7) days of notice from Seller or this consent requirement is deemed waived by Buyer after such date. For the avoidance of doubt, any attempt by Buyer to withhold consent for entry into any amendment or new agreement by Seller pursuant to this Section 9.05 that is, in the opinion of Seller's solicitor, required pursuant to the Pennsylvania Municipal Planning Code is deemed unreasonable.

ARTICLE X.

PRE-CLOSING COVENANTS OF BUYER

Section 10.01. Actions Before the Closing Date. Buyer shall not take any action which shall cause it to be in breach of any representation, warranty, covenant or agreement contained in this Agreement or cause it to be unable to perform in any material respect its obligations hereunder, and Buyer shall use its commercially reasonable efforts (subject to any conditions set forth in this Agreement) to perform and satisfy all conditions to Closing to be performed or satisfied by Buyer under this Agreement, including action necessary to obtain all consents and approvals from any Person required to be obtained by Buyer to effect the transactions contemplated by this Agreement.

Section 10.02. Consents and Approvals. Promptly after the execution of this Agreement, or as required by Law, except as otherwise expressly provided herein, Buyer shall file all applications and reports that are required to be filed by Buyer with any Governmental Authority as set forth on Schedule 5.04. Buyer shall also promptly provide all information that any Governmental Authority may reasonably require in connection with any such application or report.

Section 10.03. Cooperation. Buyer shall reasonably cooperate with Seller and their employees, attorneys, accountants and other agents and, generally, do such other acts and things in good faith as may be reasonable to timely effectuate the purposes of this Agreement and the consummation of the transactions contemplated in accordance with the provisions of this Agreement.

Section 10.04. Supplements and Updates. Buyer shall promptly deliver to Seller any supplemental information updating the information set forth in the representations and warranties

set forth in Article V of this Agreement so that such representations and warranties as supplemented by such information will be true and correct as of the Closing Date (or such other date as provided in such representations and warranties) as if then made. At least three (3) Business Days before the Closing Date, Buyer shall advise Seller of any facts which would be a breach of a representation or warranty as of the date made or a default in a covenant contained herein.

ARTICLE XI.

CONDITIONS PRECEDENT TO OBLIGATIONS OF SELLER

The obligation of Seller to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Seller in its sole discretion:

Section 11.01. Consents and Approvals. Receipt of all required material, consents, waiver, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 5.04, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired).

Section 11.02. Representations and Warranties of Buyer. The representations and warranties made by Buyer in Article V which are (a) not qualified by materiality must be true and correct in all material respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all material respects as of such specified date) and (b) qualified by materiality must be true and correct in all respects on and as of the Closing Date (except for representations or warranties that speak of a specific date or time other than the Closing Date which must be true and correct in all respects as of such specified date), and Seller must have received a certificate to that effect from a duly authorized officer of Buyer dated as of the Closing Date.

Section 11.03. PaPUC Approval. PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals or files a petition for reconsideration of PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 11.04. No Injunctions. Neither Seller nor Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 11.05. Performance of the Obligations of Buyer. Buyer must have performed in all material respects all obligations required under this Agreement to be performed by Buyer on or before the Closing Date, and Seller must have received a certificate to that effect from Buyer dated the Closing Date.

Section 11.06. Deliveries by Buyer. Buyer must have made delivery to Seller of the documents and items specified in Section 13.03 herein.

Section 11.07. No Material Adverse Effect. There shall not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

ARTICLE XII.

CONDITIONS PRECEDENT TO OBLIGATIONS OF BUYER

The obligation of Buyer to consummate the transactions provided for in this Agreement is subject to the satisfaction, at or before the Closing, of the following conditions, any one or more of which may be waived in writing by Buyer in its sole discretion:

Section 12.01. Consents and Approvals.

(a) Receipt of all required material, consents, waivers, authorizations or approvals of any Governmental Authority, or of any other Person and any other approvals necessary to consummate the transactions contemplated by this Agreement set forth in Schedule 4.05, including without limitation all required EPA and PaDEP approvals and all such Authorizations and Permits and Governmental Approvals must be final (and not subject to any appeal and any applicable appeal period having expired); and

(b) Approval by the Seller for: (i)(A) defeasance and redemption of any outstanding bonds issued by the Seller on the System included in the Outstanding Indebtedness and (B) discharge of any other outstanding debt issued to the Seller and payable to any current lender and (ii) applying any funds related to funds held in any construction fund or account under any indenture(s) being held by the Seller or any lender to the Seller on any outstanding debt (it being understood that any debt service funds or debt service reserve funds will be applied to the defeasance, redemption and discharge of outstanding debt).

Section 12.02. Representations and Warranties of Seller. The representations and warranties made by Seller in Article IV this Agreement (disregarding all “materiality” and “Material Adverse Effect” or similar qualifications contained therein) must be true and correct on and as of the Closing Date (except for representations and warranties expressly stated to relate to a specific date, in which case each such representation and warranty must be true and correct as of such earlier date), with only such exceptions as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect, and Buyer must have received a certificate to that effect from Seller dated as of the Closing Date.

Section 12.03. PaPUC Approval. PaPUC must have issued a Final Order approving the acquisition of the System under terms and conditions that are reasonably acceptable to Seller and Buyer. If a party to the PaPUC proceeding appeals or files a petition for reconsideration of PaPUC authorization of the transaction, Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 12.04. No Injunctions. Neither Seller or Buyer are subject to any injunction, preliminary restraining order or other similar decree of a court of competent jurisdiction prohibiting the consummation of the transactions contemplated by this Agreement.

Section 12.05. No Material Adverse Effect. There shall not have occurred any event or condition which gives rise to a Material Adverse Effect with respect to the Acquired Assets or the System.

Section 12.06. Deliveries by Seller. Seller must have made delivery to Buyer of the documents and items specified in Section 13.02 herein.

Section 12.07. Performance of the Obligations of Seller. Seller must have performed in all material respects all obligations required under this Agreement to be performed by Seller on or before the Closing Date, and Buyer must have received a certificate to that effect from Seller dated the Closing Date.

ARTICLE XIII.

CLOSING

Section 13.01. Closing Date. The Closing shall take place at a place in Pennsylvania that is mutually agreed upon by the Parties, at 10:00 a.m. Eastern Standard Time on the earliest agreed upon date or within twenty (20) Business Days after the date upon which all the conditions precedent to Closing described in this Agreement have been fulfilled or waived and Buyer and Seller receive the last of the required consents, waivers, authorizations and approvals from the Governmental Authorities, in each case, for the transactions contemplated by this Agreement, or at such other place and time, by such other method, or on such other date, as may be mutually agreed to by the Parties (the "Closing Date"). The Closing will be effective at 12:01 a.m., Brentwood Borough, PA time, on the Closing Date (the "Closing Effective Time").

Section 13.02. Deliveries by Seller. At the Closing, Seller shall deliver or cause to be delivered to Buyer executed copies of the following agreements, documents and other items:

(a) A Bill of Sale transferring all of the Acquired Assets comprising personal property, in the form attached as Exhibit A;

(b) Possession of the Acquired Assets, including without limitation, the Real Property, the Easements and an interest in the Missing Easements, including a license from Seller to Buyer;

(c) A duly executed counterpart to an Assignment and Assumption Agreement with respect to the Assumed Liabilities (the "Assignment and Assumption Agreement"), in the form attached as Exhibit B;

(d) The consents to transfer all of the Assigned Contracts and Authorizations and Permits (including environmental Authorizations and Permits), to the extent required hereunder;

(e) One or more special warranty or other deeds in recordable form reasonably acceptable to Buyer transferring fee simple title of Real Property;

- (f) Copies or originals of all Files and Records, materials, documents and records in possession of Seller relating to the Real Property or the Assigned Contracts;
- (g) Certificate of Seller pursuant to Section 12.02 of this Agreement;
- (h) Certificate of Seller pursuant to Section 12.07 of this Agreement;
- (i) Any documents duly executed by Seller required by the Title Company to issue final owner's title policies in accordance with the provisions of Article VI;
- (j) A duly executed counterpart to the Escrow Agreement; and
- (k) All such other instruments of conveyance or other documents as shall, in the reasonable opinion of Buyer and its counsel, be necessary to transfer to Buyer the Acquired Assets in accordance with this Agreement or to carry out the terms of this Agreement, duly executed and acknowledged by Seller, if necessary, and in a recordable form.

Section 13.03. Deliveries by Buyer. At the Closing, Buyer shall deliver or caused to be delivered to Seller the following agreements, documents and other items:

- (a) Payment in full of the Purchase Price;
- (b) A duly executed counterpart to the Assignment and Assumption Agreement;
- (c) Certificate of Buyer pursuant to Section 11.02 of this Agreement;
- (d) Certificate of Buyer pursuant to Section 11.05 of this Agreement;
- (e) Evidence of PaPUC approval as provided in Section 12.03;
- (f) A duly executed counterpart to the Escrow Agreement; and
- (g) All such other instruments of assumption as shall, in the reasonable opinion of Seller and its counsel, be necessary for Buyer to assume the Assumed Liabilities in accordance with this Agreement.

ARTICLE XIV.

TERMINATION

Section 14.01. Events of Termination. This Agreement may be terminated and abandoned at any time before the Closing:

- (a) By the mutual consent of Seller and Buyer;
- (b) By either Seller or Buyer, upon notice, if:
 - (i) the Closing does not occurred on or before the Outside Date, except Buyer has the one-time right, upon notice to Seller, to extend the Outside Date for up to

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ninety (90) days if, in the Buyer's sole discretion, any such amount of time up to ninety (90) days is necessary to obtain a required Governmental Approval; or

(ii) any Governmental Authority issues an order, decree or ruling or taken any other action, in each case permanently restraining, enjoining or otherwise prohibiting the material transactions contemplated by this Agreement and such order, decree, ruling or other action becomes final and non-appealable, if the Party seeking termination pursuant to this clause (b)(ii) is not then in material breach of any of its representations, warranties, covenants or agreements contained in this Agreement;

(c) By Seller (if Seller is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Buyer pursuant to the terms of this Agreement or of any representation or warranty of Buyer contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Seller to Buyer or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XI of this Agreement not being satisfied (which condition has not been waived by Seller in writing); or

(d) By Buyer (if Buyer is not then in material breach of any provision of this Agreement) if a material breach of any covenant or agreement to be performed or complied with by Seller pursuant to the terms of this Agreement or of any representation or warranty of Seller contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following notice thereof by Buyer to Seller or if such breach cannot be cured and (ii) would result in a condition to Closing set forth in Article XII of this Agreement not being satisfied (which condition has not been waived by Buyer in writing).

This Agreement may not be terminated after the Closing.

Section 14.02. Effect of Termination. If this Agreement is terminated by Seller or Buyer pursuant to Section 14.01, notice thereof will be given promptly to the other and all further obligations of the Parties terminate without further action by either Party and without liability or other obligation of either Party to the other Party hereunder, except that no Party will be released from liability hereunder if this Agreement is terminated and the transactions abandoned by reason of any willful breach of this Agreement.

Section 14.03. Damages for Willful Breach. If this Agreement is terminated as a result of willful breach by either Party as described in Section 14.02, the Party who willfully breached the Agreement is liable for Losses incurred by the non-breaching Party as a result of the breach in accordance with Article VIII hereof.

ARTICLE XV.

MISCELLANEOUS

Section 15.01. Confidentiality. Except as and to the extent required by Law (including but not limited to the Pennsylvania Right-To-Know Act at 65 Pa § 67.101) or pursuant to an order of a court of competent jurisdiction and as required hereunder to obtain any and all required

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Governmental Approvals, neither Party shall, directly or indirectly, disclose or use (and no Party shall permit its Representatives to disclose or use) any Confidential Information with respect to the other Party furnished, or to be furnished, by such other Party or its shareholders, directors, officers, agents, or representatives to the other Party or its employees, directors, officers, agents or representatives in connection herewith at any time or in any manner other than in connection with the completion of the transactions contemplated by this Agreement and related transactions.

Section 15.02. Public Announcements. Subject to Law or listing rules of an exchange on which Buyer's parent corporation's stock is listed, and except as otherwise set forth herein, the initial public announcement relating to the transactions contemplated herein will be mutually agreed upon and jointly made by the Parties. Subsequent public announcements related to the sale of the System by one Party shall be provided to the other Party as soon as reasonably practicable before issuance.

Section 15.03. Notices. All notices, other communications and approvals required or permitted by this Agreement shall be in writing, shall state specifically that they are being given pursuant to this Agreement and shall be addressed as follows:

in the case of Seller:

Brentwood Borough
3624 Brownsville Road
Brentwood, PA 15227
Attention: Borough Manager

with a copy to:

Brentwood Borough
3624 Brownsville Road
Brentwood, PA 15227
Attention: Solicitor

in the case of Buyer:

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
Attention: President

with a copy to:

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
Attention: General Counsel

or such other persons or addresses as a Party may from time to time designate by notice to the other Party. A notice, other communication or approval is deemed to have been sent and received (i) on the day it is delivered, or if such day is not a Business Day or if the notice is received after ordinary office hours (time or place of receipt), the notice, other communication or approval is deemed to have been sent and received on the next Business Day, or (ii) on the fourth Business Day after mailing if sent by United States registered or certified mail.

Section 15.04. Headings. The article, section and paragraph headings in this Agreement are for reference purposes only and do not affect the meaning or interpretation of this Agreement.

Section 15.05. Severability. If any term, provision, covenant or restriction contained in this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions contained in this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

Section 15.06. Entire Agreement. This Agreement is the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, negotiations, discussions and understandings, written or oral, between the Parties. There are no representations, warranties, conditions or other agreements, whether direct or collateral, or express or implied, that form part of or affect this Agreement, or that induced any Party to enter into this Agreement or on which reliance is placed by any Party, except as specifically set forth in this Agreement. The Parties acknowledge and agree that (i) each has substantial business experience and is fully acquainted with the provisions of this Agreement, (ii) the provisions and language of this Agreement have been fully negotiated and (iii) no provision of this Agreement shall be construed in favor of any Party or against any Party by reason of such provision of this Agreement having been drafted on behalf of one Party rather than the other Party.

Section 15.07. Amendments; Waivers. The Parties may amend this Agreement only by the Parties' written agreement that identifies itself as an amendment to this Agreement. Any waiver of, or consent to depart from, the requirements of any provision of this Agreement will be effective only if it is in writing and signed by the Party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Agreement will operate as a waiver of such right. No single or partial exercise of any such right will preclude any other or further exercise of such right or the exercise of any other right.

Section 15.08. Parties in Interest; Third Party Beneficiary. Except as hereinafter provided, this Agreement is not intended to and shall not be construed to create upon any Person other than the Parties any rights or remedies hereunder.

Section 15.09. Anti-Assignment; Successors and Assigns. Neither Party to this Agreement may assign any right or delegate any performance under this Agreement without the prior written consent of the other Party. A purported assignment or purported delegation without prior written consent is void. This agreement is binding upon, and inures to the benefit of, the Parties and their permitted respective successors and assigns.

Section 15.10. Governing Law; Jurisdiction. The laws of the Commonwealth of Pennsylvania (without giving effect to its conflicts of law principles) govern all matters arising and relating to this Agreement, including torts. The Parties irrevocably agree and consent to the jurisdiction of the United States District Court for the Western District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Western District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, and each Party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS AGREEMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

Section 15.11. Specific Performance. Irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof and that the Parties may seek specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity if the other Party has performed in accordance with the terms hereof.

Section 15.12. Counterparts; Electronic Mail; Facsimile Execution. This Agreement may be executed in any number of counterparts which, taken together, is one and the same agreement. This Agreement becomes effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this Agreement, a Party may send a copy of its executed counterpart to the other Party by electronic mail or facsimile transmission. Such Party is deemed to have executed and delivered this Agreement on the date it sent such electronic mail or facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Agreement executed by such Party.

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SIGNATURES NEXT PAGE]

Appendix A-5.1 (WAD)

IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

BRENTWOOD BOROUGH,
ALLEGHENY COUNTY

PENNSYLVANIA-AMERICAN WATER
COMPANY

By: Harold Smith

By: _____

Printed: Harold Smith

Printed: _____

Its: Borough Council President

Its: _____

ATTEST:

ATTEST:

By: George Zboyovsky

By: _____

Printed: GEORGE ZBOYOVSKY

Printed: _____

Title: BOROUGH MANAGER

Title: _____

Appendix A-5.1 (WAD)

IN WITNESS WHEREOF, the Parties have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

BRENTWOOD BOROUGH,
ALLEGHENY COUNTY

PENNSYLVANIA-AMERICAN WATER
COMPANY

By: _____

Printed: Harold Smith

Its: Borough Council President

By: 

Printed: E. Michael Doran

Its: President

ATTEST:

ATTEST:

By: _____

Printed: _____

Title: _____

By: 

Printed: Andrew L. Swape

Title: General Counsel

EXECUTION VERSION

ASSET PURCHASE AGREEMENT

By and Between

Brentwood Borough, Allegheny County

As Seller

and

Pennsylvania-American Water Company

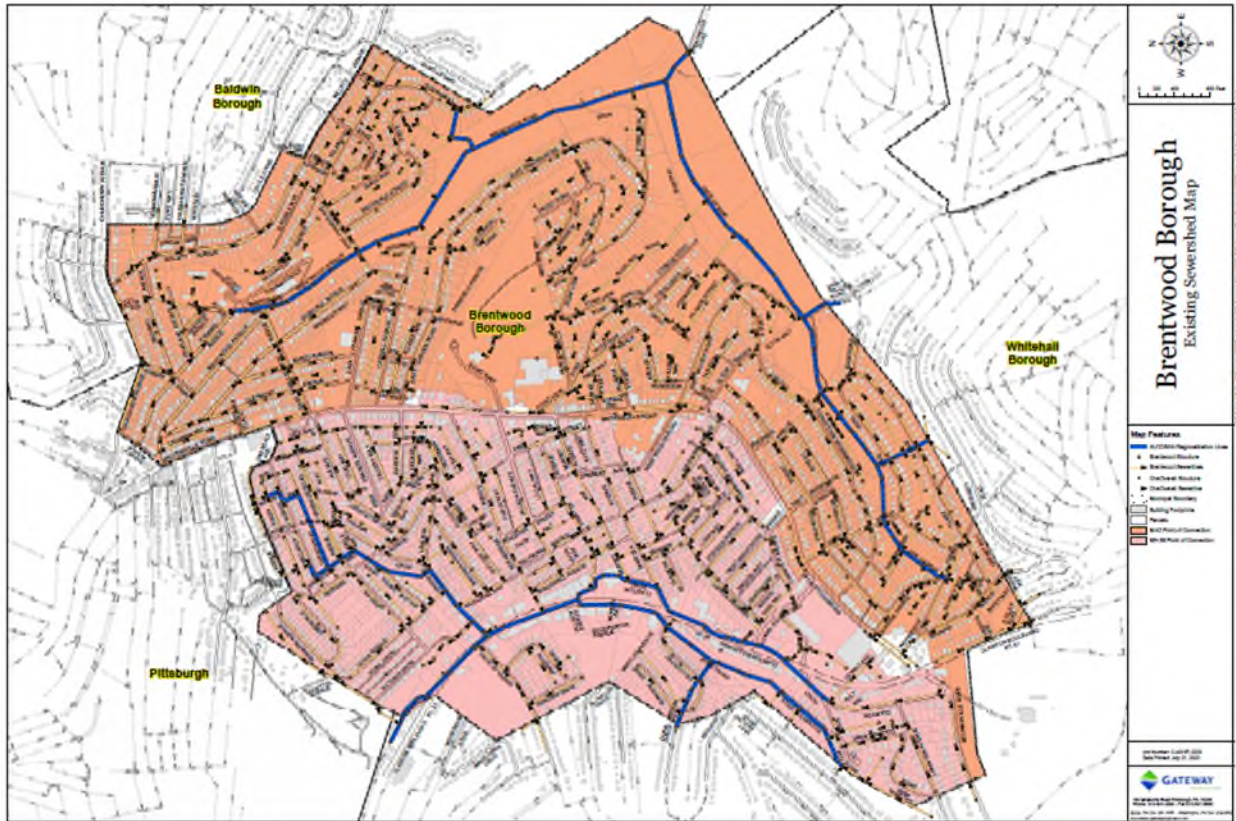
As Buyer

SCHEDULES AND EXHIBITS

Capitalized terms used in the Schedules which are not otherwise defined herein shall have the respective meanings ascribed to such terms in the Agreement. The Schedules are to be read in their entirety. Nothing in the Schedules is intended to broaden the scope of any representation or warranty in the Agreement. The disclosure of any item, explanation, exception or qualification in any Schedule is disclosure of that item for all purposes for which disclosure is required under the Agreement when it is reasonably apparent from the context that such item, explanation, exception or qualification also relates to another Schedule irrespective of whether any cross reference is made or no Schedule is provided with respect to a representation. Other than as expressly set forth herein or when the Schedules reference agreements or other matters not documented in a separate writing, all descriptions of agreements, written materials or other matters appearing herein, are summary in nature and are qualified by reference to the complete documents, which have been supplied to the Buyer or its counsel.

Schedule A

Service Area



Appendix A-5.1 (WAD)

Schedule B

Outstanding Indebtedness

Loan with Pittsburgh Water & Sewer Authority (PWSA) from 2005. Amortization table is below:

		Loan Payble		
		2005 PWSA LOAN		
		Principal	Interest	Total
2020		\$ 23,298.58	\$ 1,837.34	\$ 25,135.92
2021		\$ 23,531.57	\$ 1,604.35	\$ 25,135.92
2022		\$ 23,766.89	\$ 1,369.03	\$ 25,135.92
2023		\$ 23,764.51	\$ 1,371.41	\$ 25,135.92
2024			\$ 2,095.00	\$ 2,095.00
		\$ 94,361.55	\$ 8,277.13	\$ 102,638.68

Schedule 2.02(g)

Excluded Assets

1. Any backflow preventers that the Borough may have installed on private property will continue to be the responsibility of the property owner.

Schedule 4.05

Required Governmental Consents

1. Pennsylvania Public Utility Commission (“PaPUC”) Approval of Transaction
2. PaPUC Approval of Consent to Assignment and Amendment to Sewer Service Agreements and Related Amendments
3. Pennsylvania Department of Environmental Protection (“PaDEP”) Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer
4. Allegheny County Sanitary Authority approvals to the extent necessary
5. Allegheny County Health Department approval of transaction and/or any other necessary regulatory approval
6. EPA approval of transaction and/or any other necessary regulatory approvals

Schedule 4.06

Seller Liabilities

None.

Appendix A-5.1 (WAD)

Schedule 4.07

Events Having a Material Adverse Effect

None.

Schedule 4.08

Tax Matters

None.

Schedule 4.09

Real Property and Easements; Liens

Sewer Easements:

Manhole A	Manhole B	Properties Traversed
		2815 Willett
18	22	3022-3032 Churchview
29	32	2948-2960 Brevard
37	41	Grayson Court apartments
65	67	Brentshire Garden apartments
75	89	3217-3245 Villawood
82	85	3106-3128 Villawood
91	93	3220-3244 Villawood
94	119	3302-3420 Willett
		334 E Francis
		3210-3256 Shadyway
		3281 Beechdale
101	161	3280 Beechdale
114	116	436-442 Fairway
121	122	3416-3422 Villawood
125	136	3249-3341 Shadyway
		3340-3350 Shadyway
127	146	313-315 Lawnwood
		3280-3288 Beechdale
138	144	3300-3334 Shadyway
147	151	311 Lawnwood
148	149	3256-3264 Shadyway
159	163	3262 Beechdale
172	186	102-148 Catskill
		3234 Brentwood
198	242	403-461 E Garden
205	207	419-441 Jacobson
227	229	3101-3127 Clermont
244	247	440-480 Dailey
		475 Dailey
249	251	321 Radisson
		300-336 Radisson
255	260	197 Dailey
		312 Radisson
256	259	331 Dailey
265	819	Brentwood Park
267	275	Brentwood Park

Appendix A-5.1 (WAD)

267	279	Brentwood Park
		54-120 Windsor
270	289	56 Pointview
		3727-3753 Woodrow
298	302	3700 Oakton
		3799 Woodrow
313	322	101-203 E Willock
315	317	3775 Woodrow
336	338	209-247 Kaplan
		212-238 Greenlee
		277 Greenlee
353	518	326 Bracken
354	362	314-366 Bracken
		317 Bracken
357	366	116-124 Sceneridge
365	367	132-138 Sceneridge
		330 Greenlee
		99 Victoria
369	375	Pine Tree Gardens apartments
387	388	238 Tyrol
398	401	400-422 Dailey
400	405	445 Dailey
407	849	4120 Rockwood
412	416	543 Pointview
		3892-4080 Edge
447	920	undeveloped PA Nature Conservancy property
		47 Owendale
455	1060	48 Bellanca
483	484	77 Greenlee
		120 Bellanca
504	1059	127 Owendale
510	561	209-223 Owendale
531	532	15-23 W Garden
		3310 Brownsville
533	539	3313 Bookman
549	550	227 Laveton
		2919 Saw Mill Run in Whitehall
565	569	2929 Saw Mill Run

Appendix A-5.1 (WAD)

566	571A	Pine Tree Gardens apartments 2929 Saw Mill Run
575	1074	25-41 Sceneridge
591	598	3336-3366 Jameson
594	595	3345 Sunview 3355 Jameson
618	619	4019-4035 Dalewood
636	997	4049-4061 Dalewood
657	661	3600-3612 Kaufmann
681	687	3500-3528 Brownsville
685	686	21-25 Hillson 3513 Pary
695	707	27-49 W Willock 210 Kaufmann
696	698	217-233 Kaufmann 210 Mira
728	736	3801-3853 Sunview 3884 Delco
734	743	3853 Sunview 3864-3884 Delco 3855 Delco
773	776	3912-3930 Brownsville
786	791	3924 Edge
800	1085	3901-4011 Meadowbrook 3966-3990 Tuxey
803	805	3903 Edge
811	846	3994-4100 Tuxey
824	896	Brentwood Towne Square shopping plaza
828	829	Brentwood Towne Square shopping plaza
842	843	1145-1177 Prospect in Whitehall 4025 Tuxey
851	872A	4164 Rockwood 4220-4258 White Oak 4360-4394 Colonial Park

Appendix A-5.1 (WAD)

854	1070	4223 Colonial Park
858	859	4220-4242 Old Clairton
		4237 Colonial Park
		4300 Lawnview
861	1047	4269-4273 Colonial Park
		4344-4356 Colonial Park
874	875	4263 White Oak
896	899	50 Towne Square
		4061 Meadowbrook
919	921	4103-09 Cloverlea
922	950	217 Burdine
926	298	4050-4080 Edge
931	933	4108-4140 Tuxey
		4230 Tuxey
939	940	241-245 Bauman
941	963	237 Bauman
942	965	232 Wainwright
		114-214 Burdine
946	949	4201 Brownsville rear building
984	985	3406-3420 Kaufmann
1031	1062	4146 Rockwood
1056	1066	200-228 Newburn
1086	1088	3313 Brownsville

Other than noted as above, the Borough's engineer does not currently have any easements on file specifically to sanitary sewers.

Schedule 4.10

Equipment and Machinery

None.

Schedule 4.11

Environmental Compliance

Consent Order and Agreement dated February 18, 2016 between the Borough of Brentwood and the Allegheny County Health Department implemented in order to eliminate sanitary sewer overflows and comply with the Clean Streams Law

Schedule 4.12

Authorizations and Permits

None. There are presently no permits for the gravity flow of the sanitary sewer system.

Appendix A-5.1 (WAD)

Schedule 4.13

Assigned Contracts

Agreements			
Name of Contract	Parties to Contract	Date of Contract	Subject
Agreement – Sewage Treatment Plant Design, Construction and Operation	Allegheny County Sanitary Authority City of Pittsburgh Borough of Brentwood	December 1, 1949	For the preparation of construction of a Sewage Disposal System to meet the needs of the city and surrounding 58 municipalities, including the Borough
Agreement	Brentwood Borough City of Pittsburgh	October 14, 1936	Construction of a truck sanitary sewer along Streets Run and the Borough's connection thereto.
Streets Run Sewer Joint Management Agreement	Borough of Brentwood Borough of Baldwin Borough of Whitehall West Mifflin Sanitary Sewer Municipal Authority	July 19, 2000	The parties each use a common sanitary sewer trunk line (the "Streets Run Sewer") and wanted to enter into a collective agreement to formalize its intention to participate jointly in the substantial improvements of the Street Run Sewer

Schedule 4.14

Litigation

- A. Leventon v. Borough of Brentwood, Borough of Whitehall and the Pittsburgh Water & Sewer Authority, GD-19-2238 (Allegheny County Court of Common Pleas). A Petition for the Appointment of a Board of Viewers has been filed, alleging that Respondents Whitehall, Brentwood and PWSA effected a de facto taking of Petitioner's property without the filing of a declaration of taking. The parties have reached a settlement in principle and are in the process of finalizing the terms of a settlement agreement.
- B. Robert G. Ganther, Jr. and Deidra A. Ganther, 473 Brentwood Road. The Ganthers allege that they have sustained property damage due to sanitary sewer backups as a result of the failure by the Borough of Brentwood and the Borough of Baldwin to maintain their sanitary sewer systems. The subject property is located in the Borough Baldwin but the Borough of Brentwood contributes flow to the sewer line serving the Ganther property. The parties are currently discussing a proposal to resolve this matter in which the Boroughs would, among other things, install a grinder pump and reimburse the Ganthers for the cost of installing a sewer lateral connection to address the sewer backup issues.

Schedule 4.16(a)

Exception to Title to Acquired Assets

Title to the Acquired Assets shall be under and subject to any Missing Easements or exceptions identified on any title reports or surveys obtained by Buyer with respect to conveyance of Seller's property. Seller, does not, and will not make any representation or warranty with respect to any Missing Easements or title exceptions, but shall use commercially reasonable efforts to work with Buyer to address the same.

Schedule 4.16(b)

Sufficiency

Sufficiency of the Acquired Assets shall be under and subject to any Missing Easements or exceptions identified on any title reports or surveys obtained by Buyer with respect to conveyance of Seller's property. Seller, does not, and will not make any representation or warranty with respect to any Missing Easements or title exceptions, but shall use commercially reasonable efforts to work with Buyer to address the same.

Schedule 4.17

Pending Development Plans

None.

Schedule 5.04

Buyer Consents and Approvals

1. Pennsylvania Public Utility Commission (the “PaPUC”) Approval of Transaction
2. PaPUC Approval of Consent to Assignment and Amendment to Sewage Treatment Agreements and Related Amendments
3. Pennsylvania Department of Environmental Protection (the “PaDEP”) Approval of Sanitary Sewer Collection and Conveyance System Act 537 Plan recognizing transfer of wastewater collection system from Seller to Buyer
4. Allegheny County Sanitary Authority approval of new wastewater treatment agreement
5. Allegheny County Health Department approval of transaction and/or any other necessary regulatory or permit approvals.
6. EPA approval of any modified consent decree and/or any other necessary regulatory approvals.

Schedule 5.11

Buyer Litigation

None.

Appendix A-5.1 (WAD)

Schedule 7.03(a)

Rates

Ordinance No. 2019-1285: Rates and charges effective January 1, 2020 and continuing on a calendar year basis:

Monthly Service Fee	Borough to assess \$4.57 per household Borough to collect \$5.95 per house fee on behalf of ALCOSAN Total Service Fee: \$10.52 per thousand gallons of water used.
Consumption Fee	Borough to assess \$8.91 per thousand gallons of water used Borough to collect \$8.50 per thousand gallons fee on behalf of ALCOSAN Total Consumption Fee: \$17.41 per thousand gallons of water used.

Exhibit A

Bill of Sale

BILL OF SALE

THIS BILL OF SALE is made as of this ___ day of _____, 2020, by and between Brentwood Borough (the “Seller”) and Pennsylvania-American Water Company (the “Buyer”).

BACKGROUND:

A. Seller and Buyer entered into that certain Asset Purchase Agreement dated _____ (the “Agreement”), pursuant to which Seller has agreed, among other things, to sell, transfer, convey, assign and deliver to Buyer and Buyer has agreed to purchase from Seller the Acquired Assets, including, without limitation, all of its personal property and fixed assets including equipment, machinery, vehicles, and auxiliary equipment as more thoroughly described on Exhibit “A” attached hereto and incorporated herein by reference (“Personal Property”).

B. Seller desires hereunder to transfer and assign to Buyer the Personal Property pursuant to the Agreement and Buyer desires to accept the sale, transfer, conveyance, assignment and delivery thereof.

C. All capitalized terms not defined herein shall have the meaning ascribed to such term in the Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained in the Agreement and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Transfer and Assignment. Seller hereby sells, transfers, assigns, delivers and conveys to Buyer, its successors and assigns, all of Seller's right, title and interest in, to and under the Personal Property.

2. Acceptance of Transfer and Assignment. Buyer hereby accepts the transfer, conveyance, assignment and delivery of the Personal Property.

3. Absolute Transfer. It is the intention of Seller to transfer absolute title of the Personal Property to Buyer.

4. Counterparts. This Bill of Sale may be executed in any number of counterparts, each of which shall be deemed to be an original, and all of which shall together constitute one and the same instrument. This Bill of Sale shall be binding when one or more counterparts hereof,

Appendix A-5.1 (WAD)

individually or taken together, shall bear the signatures of all of the parties reflected on this Bill of Sale as the signatories.

5. Governing Law. This Bill of Sale shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania without giving effect to the conflicts of laws principles thereof.

6. Binding Effect. This Bill of Sale shall be binding upon and inure to the benefit of Seller and Buyer and their respective successors and assigns.

[Remainder of Page Intentionally Blank; Signature Page Immediately Follows]

Appendix A-5.1 (WAD)

IN WITNESS WHEREOF, the undersigned have caused this Bill of Sale to be duly executed on the day and year first above written.

SELLER:

BRENTWOOD BOROUGH

By: _____

Name: _____

Title: _____

BUYER:

**PENNSYLVANIA-AMERICAN WATER
COMPANY**

By: _____

Name: _____

Title: _____

EXHIBIT A

Personal Property

Exhibit B

Assignment and Assumption Agreement

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT (this "Assignment") is entered into effective as of this __ day of _____, 2020, by and between Brentwood Borough (the "Assignor") and Pennsylvania-American Water Company (the "Assignee").

A. Assignor, as seller, and Assignee, as purchaser, are parties to that certain Asset Purchase Agreement dated _____ (the "Purchase Agreement"), pursuant to which Assignor has agreed, among other things, to sell, transfer, convey, assign and deliver to Assignee and Assignee has agreed to purchase from Assignor the Acquired Assets.

B. The Purchase Agreement contemplates that at Closing, Assignor will assign to Assignee and Assignee will accept and assume, all of Assignor's right, title and interest in and to any and all Assigned Contracts and Authorizations and Permits (the "Assigned Business Deliverables") necessary for the operation of the Acquired Assets.

C. Unless herein otherwise defined, all terms defined in the Purchase Agreement shall have the meanings ascribed to them in the Purchase Agreement when used in this Assignment.

NOW, THEREFORE, in consideration of mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. Assignment of Assigned Business Deliverables. To the extent assignable, Assignor hereby assigns, transfers, sets over, conveys and delivers to Assignee, and Assignee hereby accepts, all of Assignor's right, title and interest in and to all Assigned Business Deliverables, together with all rights and privileges of any nature thereunder accruing to Assignor on or after the date hereof.

2. Indemnification by Assignor. Assignor hereby agrees to indemnify, defend and hold harmless Assignee and the Buyer Indemnified Persons from and against any and all claims for Losses in accordance with Section 8.02 of the Purchase Agreement.

3. Indemnification by Assignee. Assignee hereby agrees to indemnify, defend and hold harmless Assignor and the Seller Indemnified Persons from and against any and all claims for Losses in accordance with Section 8.03 of the Purchase Agreement.

4. Counterparts. This Assignment may be executed in any number of identical counterparts, each of which may be executed by any one or more of the parties hereto, all of which shall together constitute one and the same instrument, and shall be binding and effective when each party hereto has executed and delivered to the other party at least one counterpart. Counterparts delivered via email (.pdf) or facsimile shall be deemed to be originals for all purposes.

Appendix A-5.1 (WAD)

5. Successors and Assigns. The terms and provisions of this Assignment shall be binding upon and inure to the benefit of the respective parties hereto, and their respective successors and assigns.

6. Governing Law. This Assignment shall be governed by, and construed and enforced in accordance with, the laws of the Commonwealth of Pennsylvania (without giving effect to Pennsylvania's principles of conflicts of law) and the applicable laws of the United States of America.

7. Further Assurances. Assignor acknowledges and agrees that it shall use commercially reasonable efforts to assist Assignee with notice to the other contract parties under the Assigned Contracts with respect to the execution and effect of this Assignment. Without limiting the foregoing, Assignor acknowledges and agrees that it shall use commercially reasonable efforts as requested to by Assignee to effectuate the assignment of any additional contracts, permits, authorizations, licenses and warranties not covered hereunder.

8. Absolute Assignment. It is the intention of Seller to transfer absolute title of the Assigned Business Deliverables to Buyer, its successors and assigns, free of any redemption by Seller or its successors and assigns.

**[REMAINDER OF PAGE INTENTIONALLY BLANK;
SIGNATURE PAGE IMMEDIATELY FOLLOWS]**

Appendix A-5.1 (WAD)

IN WITNESS WHEREOF, the parties hereto have caused this Assignment to be duly executed as of the day and year first written above.

ASSIGNOR:

BRENTWOOD BOROUGH

By: _____

Name: _____

Title: _____

ASSIGNEE:

**PENNSYLVANIA-AMERICAN WATER
COMPANY**

By: _____

Name: _____

Title: _____

Exhibit C

Escrow Agreement

ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Escrow Agreement") is made as of this _____ day of _____, 2020, by and among **PENNSYLVANIA-AMERICAN WATER COMPANY**, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania ("Buyer"), **BRENTWOOD BOROUGH** ("Seller"), and [_____] a [_____] (the "Escrow Agent"), as escrow agent. Each of the Buyer, Seller and the Escrow Agent shall be referred to herein as a "Party" and collectively, as the "Parties".

WHEREAS, Buyer and Seller are Parties to that certain Asset Purchase Agreement (the "Purchase Agreement") dated _____, 2020. Solely as between Buyer and Seller, terms not otherwise defined herein shall have the respective meanings ascribed to them in the Purchase Agreement.

WHEREAS, concurrently with the execution and delivery of this Escrow Agreement, the Buyer and Seller are closing on the transactions contemplated by the Purchase Agreement.

WHEREAS, the Purchase Agreement requires Seller to transfer or assign certain real property interests to Buyer for Acquired Assets situated upon lands owned by third parties, specifically including sewer lines encroaching upon land owned by third parties (collectively referred to herein as "Easements"). The Easements are identified on Schedule 4.09 of the Purchase Agreement, [as that Schedule was amended as an attachment to the Closing Certificate delivered by Seller to Buyer on the date hereof.]

WHEREAS, as of the date of this Escrow Agreement, Seller has not transferred or assigned [___] of the Easements (collectively, the "Missing Easements", the list of which is attached hereto as **Exhibit "A"** which therefore will not be transferred to Buyer at Closing. Seller and Buyer have agreed to permit Seller to assign and transfer the Missing Easements following Closing pursuant to the terms of this Escrow Agreement.

WHEREAS, Buyer has agreed to deposit **Two Thousand Dollars (\$2,000.00)** of the Purchase Price in escrow with the Escrow Agent (in accordance with Section 2 hereof) (the "Easement Escrow Fund" or the "Escrow Fund"), in order to secure Seller's obligations to assign and transfer all of the Missing Easements after the date hereof.

WHEREAS, the Parties are entering into this Escrow Agreement in furtherance of the Parties' agreement described in Section 6.05(e) of the Purchase Agreement between Seller and Buyer dated the date hereof.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the Parties hereto hereby agree as follows:

Appendix A-5.1 (WAD)

1. Escrow Fund. Buyer is delivering on the date hereof to the Escrow Agent an amount in cash equal to the Escrow Fund, which funds are to be held in escrow by the Escrow Agent pursuant hereto and released in accordance with the terms hereof.

2. Protection and Investment of Escrow Fund. The Escrow Agent shall separately hold and safeguard the Easement Escrow Fund for such period of time that any funds remain therein, shall treat the Escrow Fund as a separate escrow account in accordance with the terms of this Escrow Agreement and not as its property, and shall hold and dispose of the Escrow Fund only in accordance with the terms of this Escrow Agreement. The Escrow Fund shall be held in escrow in a separate account held in a national banking association regulated by the Office of the Comptroller of the Currency (OCC) and authorized to conduct business in Pennsylvania. The Escrow Agent shall deposit the Escrow Fund into an interest-bearing account.

3. Term. This Escrow Agreement shall be for a term ending on the third (3rd) anniversary of the date of this Escrow Agreement (the "Term"), subject to extension in the event that there are pending claims upon the expiration of the Term, or upon the Seller's delivery to Buyer of all Missing Easements, whichever is sooner.

4. Distributions from Easement Escrow Fund. The Easement Escrow Fund shall be distributed to Seller or Buyer (such Party in such capacity, the "Withdrawing Party") in accordance with the following terms:

(a) Subject to Section 4(c) below, the Easement Escrow Fund shall be distributed to Seller in accordance with the following terms:

(i) Seller shall be entitled to quarterly distributions from the Escrow Fund calculated as: the number of Missing Easements delivered to Buyer during the preceding calendar quarter which satisfy the criteria set forth herein (each, an "Easement Document"), multiplied by [\$ _____], subject to a maximum aggregate distribution under this subparagraph (i) during the Term of [_____ **Dollars** (\$ _____)]. In order for a Missing Easement to be included as an Easement Document for purposes of determining distributions under this subsection (a), the Easement Document must satisfy the following criteria:

(A) the Easement Document shall be in the form of (1) a recorded deed of easement or a recorded deed in lieu of condemnation, in each case duly executed by the third party granting the rights set forth therein, or (2) a final, unappealable order of court in a condemnation proceeding; and

(B) the Easement Document shall be perpetual in duration and shall adequately describe the area of land encumbered by such Easement Document which shall include adequate vehicular access to the Acquired Assets situated therein and adequate area for maintaining, repairing and replacing said Acquired Assets when necessary;

(C) the Easement Document shall satisfy all requirements for recording such Easement Document as imposed by the Allegheny County Recorder of Deeds;

(D) any Easement Document in the form attached hereto as **Exhibit "B"** which, upon delivery to Buyer, complies with subparagraphs (A) through (C)

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above, shall be deemed to satisfy all requirements upon which a release from the Escrow Fund is conditioned.

(ii) Subject to subparagraph (iii) below, the remaining [_____]
Dollars (\$_____)] shall be distributed to Seller upon Seller's delivery of the last of the [_____] Missing Easement Documents (satisfying all criteria set forth in subparagraph (i) above) to Buyer in accordance with the terms hereof.

(b) All disbursements made under subparagraphs (a)(i) and (a)(ii) above shall occur within ten (10) days after the Escrow Agent has received a Withdrawal Request as set forth in Section 4(d) hereof.

(c) The balance in the Escrow Fund, if any, existing upon expiration of the Term following any distribution owed to Seller resulting from delivery of Easement Documents during the quarter in which the Term expires, shall be distributed to Buyer.

(d) Within ten (10) days following the end of each calendar quarter during the Term (in which case only Seller shall be the Withdrawing Party) or, in the event that there is a balance in the Escrow Fund existing upon expiration of the Term, then within ten (10) days of the expiration of the Term (in which case either Seller or Buyer may be the Withdrawing Party) the Withdrawing Party shall request a disbursement from the Easement Escrow Fund (a "Withdrawal Request") by delivering to Escrow Agent and the other Party to this Escrow Agreement a written notice of such request (a "Withdrawal Request Notice"). The Withdrawal Request Notice shall describe the basis and amount of the Withdrawal Request, which, with respect to Seller, shall be calculated in accordance with Section 4(a)(i) above, and shall include any documentation (including Easement Documents delivered to Buyer) evidencing the basis for the amount of the Withdrawal Request, and a certification that a copy of the Withdrawal Request has been delivered to the other Party. The Escrow Agent shall release to the Withdrawing Party the amount of the Withdrawal Request from the Easement Escrow Fund on or before the tenth (10th) day after the date when the Escrow Agent receives the Withdrawal Request Notice, provided that, if the Escrow Agent, within such period of ten (10) days, receives from the other Party (in such capacity, an "Objecting Party") a written notice of dispute of the Withdrawal Request (which notice shall include a certification by the Objecting Party that it has delivered a copy of such notice to Withdrawing Party) then the Escrow Agent shall continue to hold the amount set forth in the Withdrawal Request in the Easement Escrow Fund pursuant to this Escrow Agreement until the Escrow Agent receives either written instructions signed by the Withdrawing Party and the Objecting Party directing a release from the Easement Escrow Fund, or a final order of a court of competent jurisdiction (from which there is no further appeal or for which the time to appeal has expired without such appeal having been taken) directing a release from the Easement Escrow Fund. The Escrow Agent shall make distributions from the Easement Escrow Fund in accordance with such instructions or order within two (2) business days after receipt of either.

(e) Should a dispute arise between the Parties as to whether an Easement Document satisfies the criteria for release under subparagraph (a)(i) above, the Parties shall jointly select a neutral attorney with expertise in real property transactions to serve as mediator of the dispute and both Parties shall diligently pursue a resolution of such dispute in good faith. In the event that the Parties are unable to resolve such dispute within sixty (60) days following

the delivery by the Objecting Party to the withdrawing of the notice of objection, either Party may pursue a claim in the Allegheny County Court of Common Pleas.

5. Default & Remedies.

(a) It shall be a default of this Escrow Agreement if Seller shall fail to diligently pursue the delivery of all Easement Documents using commercially reasonable efforts and to transfer such interests to Buyer on or before the expiration of the Term (“Default”).

(b) In the event of a Default, Buyer may, at Buyer’s sole discretion, after first providing written notice to Seller and a thirty (30) day cure period thereafter to Seller, undertake to obtain such easements on its own or file suit in a court of competent jurisdiction seeking specific performance in the form of an order requiring Seller to obtain all Easement Documents, including by way of the exercise of its power of eminent domain. Buyer and Seller acknowledge that the remedies at law for any breach or threatened breach, including monetary damages, may be inadequate compensation for any loss and that any defense in any action for specific performance that a remedy at law would be adequate is waived. Any requirements for the securing or posting of a bond with such remedy are waived by the Buyer and Seller.

(c) If Seller Defaults and Buyer elects to pursue a remedy under Paragraph 5(b) above, Buyer shall be entitled to recover from Seller all actual damages, including costs and reasonable attorneys’ fees incurred in obtaining the outstanding easements or in bringing an action seeking specific performance of the terms of this Escrow Agreement. In the event Seller incurs a liability to Buyer under this Section 5(c), any amount distributed to Buyer pursuant to Section 4(c) above shall be applied as a credit to such amount owed by Seller to Buyer under this Section 5(c). The establishment of the amount of the Escrow Fund shall not limit Buyer’s right to recovery hereunder or under the Purchase Agreement.

6. Limitation of Escrow Agent's Liability.

(a) Limitation on Liability. The Escrow Agent shall incur no liability with respect to any action taken or suffered by it in reliance upon any notice, direction, instruction, consent, statement or other documents believed by it to be genuine and duly authorized, nor for other action or inaction, except its own willful misconduct or gross negligence. If any controversy arises between the Parties to this Escrow Agreement, or with any other Party, concerning the subject matter of this Escrow Agreement, its terms or conditions, the Escrow Agent will not be required to resolve the controversy or to take any action regarding it. The Escrow Agent may hold all documents and funds and may wait for settlement of any such controversy by final appropriate legal proceedings or by written agreement of Buyer and Seller. The Escrow Agent shall not be responsible for the sufficiency of this Escrow Agreement or any other agreement referred to herein. The Escrow Agent is not responsible for determining and verifying the authority of any person acting or purporting to act on behalf of any Party to this Escrow Agreement; provided, however, Escrow Agent shall use commercially reasonable efforts to ascertain whether or not such person has the requisite authority required to act on behalf of a Party. In all questions arising under this Escrow Agreement, the Escrow Agent may rely on the advice of counsel, and the Escrow Agent shall not be liable to anyone and shall be fully indemnified for anything done, omitted or suffered in good faith by the Escrow Agent based on such advice. The Escrow Agent shall not be required to take any action hereunder involving any

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expense unless the payment of such expense is made or provided for in a manner satisfactory to it in its sole judgment. In no event shall the Escrow Agent be liable for indirect, punitive, special or consequential damages (including, but not limited to lost profits), even if Escrow Agent has been advised of the likelihood of such damages or penalty and regardless of the form of action. Escrow Agent undertakes to perform only such duties as are expressly set forth herein and no duties shall be implied. Escrow Agent's permissive rights shall not be construed as duties. Escrow Agent shall have no liability under and no duty to inquire as to the provisions of any document other than this Escrow Agreement, including without limitation any other agreement between any or all of the Parties hereto or any other persons even though reference thereto may be made herein and whether or not a copy of such document has been provided to Escrow Agent. Escrow Agent shall not be responsible for delays or failures in performance resulting from acts of God, strikes, lockouts, riots, acts of war or terror, epidemics, governmental regulations, fire, communication line failures, computer viruses, attacks or intrusions, power failures, earthquakes or any other circumstance beyond its control. Escrow Agent shall not be obligated to take any legal action in connection with the Escrow Fund, this Escrow Agreement or the Purchase Agreement or to appear in, prosecute or defend any such legal action. If any portion of the Escrow Fund is at any time attached, garnished or levied upon, or otherwise subject to any writ, order, decree or process of any court, or in case disbursement of the Escrow Fund is stayed or enjoined by any court order, Escrow Agent is authorized, in its sole discretion, to respond as it deems appropriate or to comply with all writs, orders, decrees or process so entered or issued, including but not limited to those which it is advised by legal counsel of its own choosing is binding upon it, whether with or without jurisdiction; and if Escrow Agent relies upon or complies with any such writ, order, decree or process, it shall not be liable to any of the parties hereto or to any other person or entity by reason of such compliance even if such order is reversed, modified, annulled, set aside or vacated. Notwithstanding the foregoing, Escrow Agent shall immediately provide written notice to Seller and Buyer if any portion of the Escrow Fund is at any time attached, garnished or levied upon, or otherwise subject to any writ, order, decree or process of any court, or, in case of disbursement of the Escrow Fund, is stayed or enjoined by any court order. Nothing herein shall preclude Escrow Agent from acting in any other capacity for any other Party hereto or for any other person or entity.

(b) Indemnification. Buyer and Seller agree jointly and severally to indemnify the Escrow Agent for, and hold it harmless against, any claim (whether asserted by Buyer, Seller or any other person or entity), loss, liability or expense incurred by the Escrow Agent except to the extent directly caused by gross negligence or willful misconduct on the part of the Escrow Agent (as determined by a court of competent jurisdiction), arising out of or in connection with its carrying out of its duties hereunder, and in connection therewith to indemnify the Escrow Agent, its directors, officers, partners, employees and agents against any and all expenses, including reasonable attorneys' fees and expenses and the cost of defending any action, suit or proceeding or resisting any claim or enforcing Buyer's or Seller's obligations under this Escrow Agreement. The obligations of Buyer and Seller under this Section shall survive any termination of this Escrow Agreement and the resignation or removal of Escrow Agent.

(c) Authority to Interplead. Buyer and Seller authorize the Escrow Agent, if a dispute exists with respect to any obligation of Escrow Agent hereunder or the Escrow Agent is threatened with litigation or is sued, to interplead all interested parties in any court located in Allegheny County, Pennsylvania and to deposit the Escrow Fund with the clerk of that court after deduction and payment to the Escrow Agent of all its unpaid reasonable and actual

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expenses. In the event of any dispute, the Escrow Agent shall be entitled to petition a court of competent jurisdiction and shall perform any acts ordered by such court.

7. Successor Escrow Agents. The Escrow Agent may resign at any time upon giving at least thirty (30) days' written notice to Seller and Buyer and, after the date of such resignation notice, notwithstanding any other provision of this Escrow Agreement, Escrow Agent's sole obligation will be to hold the Escrow Fund pending appointment of a successor Escrow Agent. Similarly, Escrow Agent may be removed at any time by Buyer and Seller giving at least thirty (30) days' prior written notice to Escrow Agent specifying the date when such removal shall take effect. No such resignation or removal shall become effective until the appointment of a successor escrow agent, which shall be accomplished as follows: Buyer and the Seller shall use their commercially reasonable efforts to mutually agree on a successor escrow agent within thirty (30) days after receiving such notice. If the parties fail to agree upon a successor escrow agent within such time, the Escrow Agent may petition a court of competent jurisdiction to appoint a successor escrow agent, and all costs and expenses related to such petition shall be paid jointly and severally by Buyer and Seller. The successor escrow agent shall execute and deliver an instrument accepting such appointment and it shall, without further acts, be vested with all the estates, properties, rights, powers, and duties of the predecessor escrow agent as if originally named as escrow agent. Upon appointment of a successor escrow agent, and payment of the Escrow Fund to the successor escrow agent, after deduction and payment to the retiring Escrow Agent of all reasonable and actual expenses payable to, incurred by, or expected to be incurred by the retiring Escrow Agent in connection with the performance of its duties and the exercise of its rights hereunder, the Escrow Agent shall be discharged from any further duties and liability under this Escrow Agreement. After Escrow Agent's resignation or removal, the provisions of this Escrow Agreement shall inure to its benefit as to any actions taken or omitted to be taken by it while it was Escrow Agent under this Escrow Agreement.

8. Further Instruments. If the Escrow Agent reasonably requires other or further instruments in connection with its performance of its duties, the necessary parties hereto shall join in furnishing such instruments.

9. Termination. This Escrow Agreement shall terminate upon the earlier of expiration of the Term or such time as no funds remain in the Easement Escrow Fund due to distribution in accordance with Section 4 of this Escrow Agreement.

10. Waiver & Other Remedies. The rights and remedies herein reserved to Buyer or Seller are cumulative and not alternative.

11. Compensation of Escrow Agent. The Escrow Agent shall not be compensated or charge fees for acting as Escrow Agent, but shall be reimbursed by the Parties for reasonable expenses actually paid to third parties and incurred for service as Escrow Agent only, subject to reasonable substantiation of such expenses.

12. General.

(a) Notices. All notices, requests, claims and other communications under this Escrow Agreement shall be in writing, shall state specifically that they are being given pursuant to this Escrow Agreement and shall be addressed as follows:

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if to the Buyer, to:

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
Attention: President

with a copy to:

Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
Attention: General Counsel

if to the Seller, to:

Brentwood Borough
3624 Brownsville Road
Brentwood, PA 15227
Attention: Borough Manager

with copies to:

Obermayer Rebmann Maxwell & Hippel LLP
Attention: Thomas Wyatt, Esq.
Centre Square West
1500 Market Street, Suite 3400
Philadelphia, PA 19102-2101
215.665.3200
Thomas.Wyatt@obermayer.com

and

Brentwood Borough
3624 Brownsville Road
Brentwood, PA 15227
Attention: Solicitor

if to the Escrow Agent, to:

[ESCROW AGENT AND ESCROW AGENT ADDRESS]

or such other person as a Party may from time to time designate by notice to the other Parties. A notice or other communication or approval is deemed to have been sent and received after ordinary business hours (time or place of receipt), the notice, other communication or approval is deemed to have been sent and received on the next business day or (ii) on the fourth business day after mailing if sent by United States registered or certified mail. Any notice addressed to the Escrow Agent shall be effective only upon receipt.

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(b) Headings. The article, section and paragraph headings in this Escrow Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Escrow Agreement.

(c) Severability. If any term, provision, covenant or restriction contained in this Escrow Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions contained in this Escrow Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

(d) Entire Agreement. This Escrow Agreement, including the relevant provisions of the Purchase Agreement pertaining to the parties' rights and obligations regarding the Missing Easements, constitutes the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, negotiations, discussions and understandings, written or oral, between the Parties. There are no representations, warranties, conditions or other agreements, whether direct or collateral, or express or implied, that form part of or affect this Agreement, or that induced any Party to enter into this Escrow Agreement or on which reliance is placed by any Party, except as specifically set forth in this Escrow Agreement. The Parties acknowledge and agree that (i) each has substantial business experience and is fully acquainted with the provisions of this Escrow Agreement, (ii) the provisions and language of this Escrow Agreement have been fully negotiated and (iii) no provision of this Escrow Agreement shall be construed in favor of any Party or against any Party by reason of such provision of this Escrow Agreement having been drafted on behalf of one Party rather than the other Party.

(e) Amendments; Waivers. This Escrow Agreement may be amended, changed or supplemented only by a written agreement signed by the Parties. Any waiver of, or consent to depart from, the requirements of any provision of this Escrow Agreement shall be effective only if it is in writing and signed by the Party giving it, and only in the specific instance and for the specific purpose for which it has been given. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Escrow Agreement shall operate as a waiver of such right. No single or partial exercise of any such right shall preclude any other or further exercise of such right or the exercise of any other right.

(f) Parties in Interest; Third Party Beneficiary. Except as hereinafter provided, this Escrow Agreement is not intended to and shall not be construed to create upon any Person other than the Parties any rights or remedies hereunder.

(g) Anti-Assignment; Successors and Assigns. This Escrow Agreement shall be binding upon, and inure to the benefit of, the Parties hereto and their respective successors and assigns; provided, however, that no Party may assign any of its rights or delegate any of its duties under this Escrow Agreement without the prior written consent of the other Party hereto and any attempted assignment or delegation without prior written consent shall be void and of no force or effect.

(h) Governing Law and Jurisdiction. This Escrow Agreement shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Pennsylvania (without giving effect to the principles of conflicts of laws thereof). The Parties hereto irrevocably agree and consent to the jurisdiction of the United States District Court for the

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Eastern District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, for the adjudication of any matters arising under or in connection with this Agreement. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Eastern District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, and each party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS ESCROW AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS ESCROW AGREEMENT, THE PURCHASE AGREEMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS ESCROW AGREEMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS ESCROW AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

(i) Specific Performance. The Parties agree that irreparable damage would occur if any provision of this Escrow Agreement were not performed in accordance with the terms hereof and that the Parties shall be entitled to specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity if the other Party has performed in accordance with the terms hereof.

(j) Counterparts; Facsimile; Execution. This Escrow Agreement may be executed in any number of counterparts which, taken together, shall constitute one and the same agreement. This Escrow Agreement shall be effective when it has been executed by each Party and delivered to all Parties. To evidence the fact that it has executed this Escrow Agreement, a Party may send a copy of its executed counterpart to the other Party by electronic mail or facsimile transmission. Such Party shall be deemed to have executed and delivered this Escrow Agreement on the date it sent such electronic mail or facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this Escrow Agreement executed by such Party.

(k) To help the government fight the funding of terrorism and money laundering activities, federal law requires all financial institutions to obtain, verify and record information that identifies each person who opens an account. For a non-individual person such as a business entity, a charity, a trust or other legal entity, Escrow Agent requires documentation to verify its formation and existence as a legal entity. Escrow Agent may require financial statements, licenses or identification and authorization documents from individuals claiming authority to represent the entity or other relevant documentation. Buyer and Seller agree to

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provide all information requested by Escrow Agent in connection with any legislation or regulation to which Escrow Agent is subject, in a timely manner. Escrow Agent's appointment and acceptance of its duties under this Escrow Agreement is contingent upon verification of all regulatory requirements applicable to Buyer, Seller and any of their permitted assigns, including successful completion of a final background check. These conditions include, without limitation, requirements under the USA Patriot Act, the USA FREEDOM Act, the Bank Secrecy Act, and the U.S. Department of the Treasury Office of Foreign Assets Control. If these conditions are not met, Escrow Agent may at its option promptly terminate this Escrow Agreement in whole or in part, and refuse any otherwise permitted assignment by Buyer or Seller, without any liability or incurring any additional costs.

13. Representations and Warranties. Buyer and Seller each respectively make the following representations and warranties to Escrow Agent:

(a) it has full power and authority to execute and deliver this Escrow Agreement and to perform its obligations hereunder; and this Escrow Agreement has been duly approved by all necessary action and constitutes its valid and binding agreement enforceable in accordance with its terms.

(b) each of the applicable persons designated on Exhibit "C" attached hereto has been duly appointed to act as its authorized representative hereunder and individually has full power and authority on its behalf to execute and deliver any instruction or direction, to amend, modify or waive any provision of this Escrow Agreement and to take any and all other actions as its authorized representative under this Escrow Agreement and no change in designation of such authorized representatives shall be effective until written notice of such change is delivered to each other Party to this Escrow Agreement pursuant to Section 13(b) and Escrow Agent has had reasonable time to act upon it.

(c) the execution, delivery and performance of this Escrow Agreement by Escrow Agent does not and will not violate any applicable law or regulation and no printed or other material in any language, including any prospectus, notice, report, and promotional material or the rights, powers, or duties of Escrow Agent under this Escrow Agreement shall be issued by any other parties hereto, or on such Party's behalf, without the prior written consent of Escrow Agent.

(d) it will not claim any immunity from jurisdiction of any court, suit or legal process, whether from service of notice, injunction, attachment, execution or enforcement of any judgment or otherwise.

14. Security Procedures. In the event instructions, including funds transfer instructions, address change or change in contact information are given to Escrow Agent (other than in writing at the time of execution of this Escrow Agreement), whether in writing, by facsimile or otherwise, Escrow Agent is authorized but shall not be required to seek confirmation of such instructions by telephone call-back to any person designated by the instructing Party on "Exhibit C" hereto, and Escrow Agent may rely upon the confirmation of anyone purporting to be the person so designated. The persons and telephone numbers for call-backs may be changed only in writing actually received and acknowledged by Escrow Agent and shall be effective only after Escrow Agent has a reasonable opportunity to act on such changes. Buyer and Seller agree

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that Escrow Agent may at its option record any telephone calls made pursuant to this Section. Escrow Agent in any funds transfer may rely solely upon any account numbers or similar identifying numbers provided by Buyer or Seller to identify (i) the beneficiary, (ii) the beneficiary's bank, or (iii) an intermediary bank, even when its use may result in a person other than the beneficiary being paid, or the transfer of funds to a bank other than the beneficiary's bank or an intermediary bank so designated. Buyer and Seller acknowledge that these optional security procedures are commercially reasonable.

15. Tax Reporting. Escrow Agent shall have no responsibility for the tax consequences of this Escrow Agreement and Buyer and Seller shall consult with independent counsel concerning any and all tax matters. Buyer and Seller jointly and severally agree to (a) assume all obligations imposed now or hereafter by any applicable tax law or regulation with respect to payments or performance under this Escrow Agreement and (b) request and direct the Escrow Agent in writing with respect to withholding and other taxes, assessments or other governmental charges, and advise the Escrow Agent in writing with respect to any certifications and governmental reporting that may be required under any applicable laws or regulations. Except as otherwise agreed by Escrow Agent in writing, Escrow Agent has no tax reporting or withholding obligation except with respect to Form 1099-B reporting on payments of gross proceeds under Internal Revenue Code Section 6045 and Form 1099 and Form 1042-S reporting with respect to investment income earned on the Escrow Fund, if any. To the extent that U.S. federal imputed interest regulations apply, Buyer and Seller shall, no later than 5 Business Days after the effective date of this Escrow Agreement, so inform the Escrow Agent, provide the Escrow Agent with all imputed interest calculations and direct the Escrow Agent to disburse imputed interest amounts as Buyer and Seller deem appropriate. The Escrow Agent shall rely solely on such provided calculations and information and shall have no responsibility for the accuracy or completeness of any such calculations or information. Buyer and Seller shall provide Escrow Agent a properly completed IRS Form W-9 or Form W-8, as applicable, for each payee. If requested tax documentation is not so provided, Escrow Agent is authorized to withhold taxes as required by the United States Internal Revenue Code and related regulations. Buyer and Seller have determined that any interest or income on the Escrow Fund shall be reported on an accrual basis and deemed to be for the account of Seller.

Signature page follows.

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IN WITNESS WHEREOF, each of the parties hereto has executed this Escrow Agreement as of the date first above written.

BUYER:

**PENNSYLVANIA-AMERICAN
WATER COMPANY**

Name:
Title:

SELLER:

BRENTWOOD BOROUGH

Name:
Title:

ESCROW AGENT:

[_____]

Name:
Title:

Exhibit A

MISSING EASEMENTS

Exhibit B

FORM OF EASEMENT TEMPLATE

Prepared By & Return To:

[]

Allegheny County Tax Parcel Number:

DEED OF EASEMENT

THIS DEED OF EASEMENT is made this [] day of [], 20[] by and between [Grantor], having a mailing address of [address] (the "Grantor"), and PENNSYLVANIA-AMERICAN WATER COMPANY, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, having a business address of 852 Wesley Drive, Mechanicsburg, Pennsylvania 17055(the "Grantee").

RECITALS

WHEREAS, Grantee owns and operates the sanitary wastewater collection system (the "System"), which provides sanitary wastewater service to various customers in Brentwood Borough, Pennsylvania.

WHEREAS, certain underground sanitary sewer lines owned by Grantee (the "Sewer Lines") are situated within the real property owned by the Grantor described on Exhibit "A" attached hereto (the "Property") which were never the subject of an instrument that was recorded in the Allegheny County Recorder of Deeds office.

WHEREAS, the parties wish to document Grantee's rights to own, operate, maintain and replace the Sewer Lines with the boundaries of the Property.

NOW, THEREFORE, the said Grantor, for and in consideration of the sum of Ten and 00/100 Dollars (\$10.00), lawful money of the United States of America, unto it well and truly paid by Brentwood Borough (as predecessor to Grantee as owner of the Sewer Lines) on behalf of the said Grantee, at or before the sealing and delivery hereof, the receipt of whereof is hereby acknowledged, by these presents hereby does grant, convey, bargain and sell, alien, enfeoff, release and confirm unto the said Grantee, its respective successors, and assigns forever, a permanent and perpetual, non-exclusive easement for

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access, ingress, egress and regress to the Sewer Lines, and for using, operating, altering, inspecting, repairing, removing, improving, replacing, maintaining and installing the Sewer Lines, as they exist or may be installed and exist in the future on the real estate described on Exhibit "B" (the "Easement Area").

TOGETHER WITH the right to use, repair, remove, reconstruct and reinstall the Sewer Lines, the right to access such facilities, and the right to make excavations and trim or remove trees, brush, undergrowth, landscaping and other obstructions in the exercise of the foregoing rights.

THE EASEMENT GRANTED HEREIN are permanent and perpetual and are covenants running with the lands burdened by the easement described in this Deed of Easements.

TO HAVE AND TO HOLD this Deed of Easement with the wastewater system improvements thereon installed and erected, hereditaments and premises hereby granted, or mentioned and intended so to be, with appurtenances, all and singular and the rights, liberties, privileges, above-described, unto the said Grantee, its successors and assigns forever.

AND THE SAID GRANTOR, for itself, its successor and assigns, does by these presents covenant, promise, grant and agree, to and with the Grantee, its successors and assigns, by these presents, that it, the said Grantor and its successors and assigns, all and singular the hereditaments, premises, and land hereby described and granted, or mentioned and intended so to be, with the appurtenances, unto the said Grantee, its successors and assigns, against them the said Grantor and its successors and assigns, and against all and every person and persons whomsoever lawfully claiming or to claim the same or any part thereof, by, from or under it, them or any of them, shall and will WARRANT and forever DEFEND.

This Deed of Easement and all of the covenants herein contained shall inure to the benefit of, and shall be binding upon the Grantor, its successors and assigns, and Grantee, its successors and assigns.

[Signature page to follow]

IN WITNESS WHEREOF, Grantor has duly executed this instrument as of the above written date.

GRANTOR:

By: _____

**I hereby certify that the address of
the within named Grantee is:**

**Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055**

On behalf of said Grantee

SIGNATURE PAGE FOR DEED OF EASEMENT

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COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF ALLEGHENY :

On this day of , 20__, before me, the undersigned officer, personally appeared [**Grantor**], who, known to me or satisfactorily proven, acknowledged himself to be the person who executed the foregoing instrument for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Notary Public

My commission expires on:

Exhibit A: Legal description for fee interest in Property

Exhibit B: Legal description of Easement Area

Exhibit C

AUTHORIZED PERSONS

FIRST AMENDMENT TO ASSET PURCHASE AGREEMENT

DATED _____, 2023

THIS FIRST AMENDMENT TO ASSET PURCHASE AGREEMENT (“First Amendment”) is made as of the ___ day of _____, 2023, by and between, Brentwood Borough, Allegheny County, a body corporate and politic, organized and existing under the laws of the Commonwealth of Pennsylvania (the “Seller”), and Pennsylvania-American Water Company, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania (the “Buyer”).

RECITALS:

WHEREAS, Seller and Buyer entered into that certain Asset Purchase Agreement dated December 22, 2020 (the “Agreement”); and

WHEREAS, because Seller made capital expenditures in a prudent manner in the System since the Effective Date, Seller and Buyer desire to amend a certain provision of the Agreement to become effective upon the date of this First Amendment; and

WHEREAS, the Seller and Buyer desire to reaffirm all other provisions of the Agreement not specifically amended by this First Amendment; and

WHEREAS, capitalized terms not otherwise defined in this First Amendment have the meaning ascribed to such terms in the Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties to this First Amendment, intending to be legally bound, agree as follows:

1. The amount of Purchase Price in Section 3.01 of the Agreement is hereby amended as set forth below:

“Purchase Price. The purchase price for the Acquired Assets is Nineteen Million Three Hundred Sixty-Four Thousand Four Hundred Forty-Three Dollars (\$19,364,443) (the “Purchase Price”) which Buyer shall pay as follows at Closing:”

2. All other provisions, terms, and conditions of the Agreement not specifically amended by this First Amendment, including the remaining provisions of Section 3.01 of the Agreement, remain in full force and effect. Seller and Buyer reaffirm the Agreement as amended by this First Amendment.
3. Neither Party to this First Amendment may assign any right or delegate any performance under this First Amendment without the prior written consent of the other Party. A purported assignment or purported delegation without prior written consent is void.

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4. The laws of the Commonwealth of Pennsylvania (without giving effect to its conflicts of law principles) govern all matters arising and relating to this First Amendment, including torts. The Parties irrevocably agree and consent to the jurisdiction of the United States District Court for the Western District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, for the adjudication of any matters arising under or in connection with this First Amendment. Any action initiated in court shall be filed and litigated (including all discovery proceedings) exclusively in the United States District Court for the Western District of Pennsylvania and the Court of Common Pleas of Allegheny County, Pennsylvania, and each Party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action or proceeding. Service of process, summons, notice or other document by mail to such Party's address set forth herein shall be effective service of process for any suit, action or other proceeding brought in any such court. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY WHICH MAY ARISE UNDER THIS FIRST AMENDMENT OR THE OTHER TRANSACTION DOCUMENTS IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND, THEREFORE, EACH SUCH PARTY IRREVOCABLY AND UNCONDITIONALLY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LEGAL ACTION ARISING OUT OF OR RELATING TO THIS FIRST AMENDMENT, THE OTHER TRANSACTION DOCUMENTS OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY. EACH PARTY TO THIS FIRST AMENDMENT CERTIFIES AND ACKNOWLEDGES THAT (A) NO REPRESENTATIVE OF ANY OTHER PARTY HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PARTY WOULD NOT SEEK TO ENFORCE THE FOREGOING WAIVER IN THE EVENT OF A LEGAL ACTION, (B) SUCH PARTY HAS CONSIDERED THE IMPLICATIONS OF THIS WAIVER, (C) SUCH PARTY MAKES THIS WAIVER VOLUNTARILY, AND (D) SUCH PARTY HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.
5. This First Amendment may be executed in any number of counterparts which, taken together, is one and the same agreement. This First Amendment becomes effective when it has been executed by each Party and delivered to both Parties. To evidence the fact that it has executed this First Amendment, a Party may send a copy of its executed counterpart to the other Party by facsimile transmission. Such Party is deemed to have executed and delivered this First Amendment on the date it sent such facsimile transmission. In such event, such Party shall forthwith deliver to the other Party an original counterpart of this First Amendment executed by such Party.

[Remainder of Page Intentionally Blank; Signature Page Immediately Follows]

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IN WITNESS WHEREOF, the Parties have duly executed this First Amendment on the date first written above.

BRENTWOOD BOROUGH,
ALLEGHENY COUNTY

PENNSYLVANIA-AMERICAN WATER
COMPANY

By: _____

By: _____

Printed: _____

Printed: _____

Its: _____

Its: _____

ATTEST:

ATTEST:

By: _____

By: _____

Printed: _____

Printed: _____

Title: _____

Title: _____

Exhibit A

Cooperation Agreement

Agreement to Provide Valuation Consulting Services
Between

WAD Consultants

And

Pennsylvania America Water Company
For the Appraisal of the

Borough of Brentwood's Sanitary Sewer System

Agreement for Valuation Consulting Services

This Agreement for Valuation Consulting Services (“Agreement”) is by and between Weinert Appraisal and Depreciation Services, LLC (WAD Consultants), a Wisconsin Limited Liability Company (“Supplier”) and Pennsylvania-American Water Company, a Pennsylvania corporation (“PA-American”) and is entered into as of February 1, 2023. This Agreement relates to a continuation of the services that were described and initially performed pursuant to the AUS Consultants Agreement dated September 30, 2020, that was terminated on July 28, 2022.

In consideration of the covenants hereinafter contained, and intending to be legally bound, the Parties hereto agree to as follows:

Section 1. Description of Services:

Supplier is being engaged to act as a Utility Valuation Expert, as such term is defined in Pennsylvania Act 12 of 2016, amending Chapter 13 of the Pennsylvania Public Utility Code and the First and Second Implementation Orders entered by the Public Utility Commission at Docket No. M-2016-2543193 (collectively, “Act 12”). Supplier is being engaged with respect to the proposed acquisition by PA-American of the sanitary sewer system assets currently owned by the Borough of Brentwood (PA). Upon the issuance of a notice to proceed by PA-American, Supplier shall prepare and produce the following appraisals and/or studies suitable for the Project, including if requested (collectively, the “Services”):

1. An Appraisal (Valuation study) consistent with the 2020-2021 Uniform Standards of Appraisal Practices (USPAP) as of the date requested by PA-American and consistent with the requirements of Act 12.
2. If applicable, provide expert witness testimony and documentation for the Valuation studies as required by Act 12.
3. If requested by PA-American, updates to the Valuation studies as of the date requested by PA-American.
4. Provide the documentation required by Act 12 with respect to the Services and the fees charged by Supplier pursuant to this Agreement.
5. If requested by PA-American, perform such other services as are consistent with Supplier’s engagement as a Utility Valuation Expert.

Section 2. Duration:

Unless amended, the Project subject to this Agreement is anticipated to be approximately two years in duration and will be performed for the period beginning upon the issuance of a notice to proceed by PA-American and continuing through February 1, 2025. Supplier acknowledges and agrees that it shall not and shall have no obligation to provide the Services until such time as PA-American has issued a notice to proceed. To the extent Act 12 imposes any requirements with respect to the timing

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for the completion of the Services, the commencement date for such Services shall not be deemed to be any earlier than the date PA-American issues the notice to proceed.

Section 3. Effective & Expiration Dates:

This Agreement shall be effective as of the date set forth in the first paragraph hereof (“Effective Date”) and shall continue until the earlier to completion on the Project or February 1, 2025 (“Expiration Date”) unless earlier terminated as set forth in this Agreement.

Section 4. Personnel to Perform the Services:

Jerome C. Weinert, Director and Principal, shall be in charge of the Services on behalf of Supplier. Supplier shall call upon additional experienced professional staff as required. In the event that this Project or Agreement should not continue for any reason, or should PA-American replace the need for Supplier, PA-American shall give notice as soon as feasibly possible for Supplier to re-deploy their resources elsewhere without any penalty to PA-American.

Both parties recognize the importance of maintaining a continuity of Supplier’s personnel on this Project. Supplier agrees that any of its employees, staff, professionals, experts, partners, and/or other personnel: (a) identified as the “Project Team” identified in Section 6 of this Agreement, and/or (b) assigned to this Project subsequent to the execution of this Agreement, shall continue to be staffed on this Project throughout the entire length of time Project Services are provided under this Agreement. Further, said personnel shall be used in the same capacities in which they are initially intended as of the execution date of this Agreement, or as of the date they are assigned to the Project subsequent to execution date of this Agreement, so long as they continue to be employed by Supplier, or so long as PA-American continues to desire their services.

Should Supplier terminate its relationship and/or employment with said personnel, or if said personnel terminates the relationship with Supplier and/or resigns from employment with Supplier, to the extent that Supplier, for any reason, enters into non-compete or similar agreement(s) and/or arrangement (s) with any of its employees, staff, professionals, experts, partners, and/or other personnel, Supplier agrees to immediately release said personnel from non-compete or similar agreement(s) and/or arrangement(s) with respect to being able to work for PA-American in any capacity PA-American sees fit.

Should any or all of Suppliers employees, staff, professionals, experts, partners, and/or other personnel staffed on this Project leave the employ of Supplier during the terms of this Agreement, Supplier agrees to immediately notify PA-American and suggest alternative personnel to be staffed on the Project. In no event shall any Supplier employee, staff, professional, expert, partner, and/or other personnel be assigned to this Project (whether identified in this Section 4, or identified elsewhere subsequent to the execution of this Agreement) without the express written permission and approval by PA-American. Further, PA-American reserves the right to terminate the Services of any of Supplier employee, staff, professional, expert, partner, and/or other personnel working on this Project at any time, and for any reason, without penalty.

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Section 5. Location:

Supplier's office is located in Greendale, Wisconsin.

Section 6. Prices:

Supplier fees for the Services are as follows:

Appraisal Activity	Appraisal completion to a Section 1329 Compliant Appraisal Fees
UVE Appraisal Update	\$15,000
Updated Pre-filed Direct testimony & DR responses related to the above described Valuation studies	\$2,500

Valuation Activity performed by WAD Consultants staff following the filing of the PUC Application	Hourly Rates plus expenses
Jerome C. Weinert	\$250
Elizabeth A. Weinert	150

Supplier recognizes that its fees for the Project are subject to disclosure pursuant to Act 12 and so that Pa-American can include such fees as part of the transaction and closing costs associated with the proposed acquisition of the Project. Supplier further recognizes that its fees shall not exceed five percent (5%) of the fair market value of the assets to be acquired as part of the Project unless such fees are approved by the Pennsylvania Public Utility Commission ("PUC"). Supplier agrees that its fees shall comply with the requirements of Act 12.

Section 7. Payment:

Payment all undisputed amounts shall be made within 60 days upon PA-American being invoiced each month for all work completed during the prior month, or partial payment upon being invoiced should this appraisal engagement be suspended.

All payment terms are Net 60.

Section 8. Non-Disclosure:

A. The Parties agree as follows:

1. In connection with the Project, PA-American may find it beneficial to disclose to Supplier certain confidential or proprietary information in written, oral or other tangible or intangible forms, which may include, but is not limited to, discoveries, ideas, concepts, know-how, techniques, designs, specifications, drawings, blueprints, tracings, diagrams, models, samples, flow charts, data, computer programs, disks, diskettes, tapes, marketing plans,

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customer names and other technical, financial or business information (individually and collectively, "Information"). All Information which is disclosed by PA-American to Supplier, whether provided in tangible or intangible form, including, but not limited to, electronic mail or other electronic communications, shall be deemed to be confidential or proprietary. Further, if Information is provided orally, including Information conveyed to an answering machine, voice mail box or similar medium, it shall too be deemed to be confidential or proprietary.

2. Supplier shall:

- a. Hold such Information in confidence with the same degree of care with which Supplier protects its own confidential or proprietary Information, but no less than reasonably prudent care;
- b. Restrict disclosure of the Information solely to its employees, contractors and agents with a need to know such Information, advise those persons of their obligations hereunder with respect to such Information, and assure that such persons are bound by obligations of confidentiality no less stringent than those imposed in this Agreement;
- c. Use the Information only as needed for the purposes of the Project;
- d. Except for the purposes of the Project, not copy, distribute, or otherwise use such Information or knowingly allow anyone else to copy, distribute, or otherwise use such Information; any and all copies shall bear the same notices or legends, if any, as the originals; and,
- e. Upon request, promptly return to PA-American all Information that is in tangible form; as to Information that was disclosed or is stored in intangible form, including, but not limited to electronic mail or other electronic communications, upon request by the PA-American, Supplier shall certify in writing within five (5) business days to PA-American that all such Information has been destroyed or, if the Information was recorded on an erasable storage medium, that Supplier has used reasonable efforts to erase all such Intangible Information.

3. Except for customer Information, Supplier shall have no obligation to preserve the confidential or proprietary nature of any Information which:

- a. Was already known to the Supplier free of any obligation to keep it confidential at the time of its disclosure by PA-American as evidenced by Supplier's written records prepared prior to such disclosure; or
- b. is or becomes publicly known through no wrongful act of Supplier; or
- c. is rightfully received from a third person having no direct or indirect secrecy or confidentiality obligation to PA-American with respect to such Information; or
- d. is independently developed by an employee, contractor or agent of Supplier or a third party not associated with the Project and who did not have any direct or indirect access to the Information, as evidenced by the Supplier's written records; or
- e. is approved for release by written authorization by PA-American; or,

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- f. it is required to disclose pursuant to a written request or demand of a duly empowered government agency or a court of competent jurisdiction, provided due notice and an adequate opportunity to intervene is given to PA-American, unless such notice is prohibited by such written request or demand, in which case, the Supplier shall disclose only such Information as is required and shall use reasonable efforts to obtain confidential treatment for any Information that is so disclosed.
4. Any Information relating to the Project that is disclosed by PA-American to Supplier shall remain confidential for five (5) years from the date of termination of the Agreement. Notwithstanding anything to the contrary herein, Customer Information shall remain confidential indefinitely and shall never be disclosed or used without the prior written approval of an authorized representative of PA-American. "Customer Information" includes, but is not limited to, customer name, address, phone number, information concerning a customer's calling patterns, unlisted customer numbers, any other information associated with a customer or with persons in the household of a customer, and any information available to PA-American and/or its suppliers by virtue of PA-American's relationship with its customers as a provider of telecommunications, Internet, information or other services, including, but not limited to, the quantity, technical configuration, location, type, destination, amount of use of telecommunications or other services subscribed to, and information contained on the telephone bills of PA-American's customers pertaining to telephone exchange service, telephone toll service or other services received by a customer of PA-American.
5. Any disclosed Information by PA-American shall be deemed the property of PA-American, who shall retain exclusively rights to such Information. Nothing contained in this Agreement shall be construed as granting or conferring any patent, copyright, trademark or other proprietary rights by license or otherwise in any such Information to Supplier, except for the right to use such Information in accordance with this Agreement.
6. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, PA-AMERICAN MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY NATURE WHATSOEVER WITH RESPECT TO ANY INFORMATION FURNISHED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES AGAINST INFRINGEMENT.
7. In the event Supplier discloses, disseminates, or releases any confidential or proprietary Information received from PA-American, except as expressly permitted herein, such disclosure, dissemination, or release shall be deemed a material breach of this Agreement. In the event of such breach, PA-American may demand prompt return of all confidential and proprietary Information previously provided to Supplier and terminate this Agreement. The provisions of this Section are in addition to any other legal rights or remedies PA-American may have in law or in equity.
8. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, irrespective of its choice of law principles. Both Parties agree to comply with all laws, including, but not limited to, laws and regulations regarding

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the export of information outside the United States. Supplier shall not knowingly transmit, directly or indirectly, in whole or in part, any Information of PA-American or export, directly or indirectly, any product or Information in contravention of the laws of the United States or the laws of any other country governing the aforesaid activities. Supplier shall not transfer any Information received hereunder or any product made using such Information to any country prohibited from receiving such data or product by the U.S. Department of Commerce Export Administration Regulations without first obtaining a valid export license. In the event Supplier violates the foregoing, Supplier shall defend, indemnify, and hold harmless PA-American from and against any claim, loss, liability, expense or damage including fines or legal fees, incurred PA-American with respect to the export or re-export activities contrary to the foregoing. Notwithstanding any other provision of this Agreement, this Section shall survive any termination or expiration of this Agreement.

Section 9. Ownership of Paid-For Development, Use and Reservation of Rights:

PA-American shall be the exclusive owner of all right, title, and interest in and to all Paid-For Development (defined below), including, without limitation, all Intellectual Property Rights therein and thereto. Supplier shall assign or have assigned to PA-American and hereby assigns to PA-American all Intellectual Property Rights in and to the Paid-For Development. "Paid-For Development" shall mean any and all Items to the extent produced or developed by or on behalf of Supplier or its employees, agents, or direct or indirect contractors or suppliers (and whether completed or in-progress), or forming part of any deliverable, pursuant to this Agreement (including, without limitation under any statement of work, exhibit, order or other document under, subordinate to, or referencing this Agreement or the Project) (collectively "Agreements") for the development of which PA-American has been charged monies in one or more of the Agreements ("Development Fees"). Paid-For Development shall always exclude all Excluded Materials, but shall include (without limitation) any modifications, alterations or updates of any Excluded Materials ("Enhancements") that otherwise fall within the definition of Paid-For Development ("Paid-For Enhancements"). PA-American's ownership of Paid-For Enhancements shall be subject to Supplier's underlying rights and ownership in Supplier's Excluded Materials.

"**Items**" shall mean any or all inventions, discoveries, ideas, (whether patentable or not), and all works and materials, including but not limited to products, devices, computer programs, source codes, designs, files, specifications, texts, drawings, processes, data or other information or documentation in preliminary or final form, and all Intellectual Property rights in or to any of the foregoing.

"**Excluded Materials**" shall mean: i) Supplier's Pre-Existing Materials; ii) Supplier's Independently Developed Materials; and iii) Supplier's Mere Reconfigurations.

"**Supplier's Pre-Existing Materials**" shall mean those Items owned by Supplier to the extent and in the form that they both existed prior to the date Supplier began any work under this Agreement and were created without any use of any PA-American Items. Supplier's Pre-Existing Materials shall not, however, include Paid-For Enhancements thereto.

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“Supplier’s Independently Developed Materials” shall mean those Items that have been developed by Supplier, or on Supplier’s behalf, both i) without use of any PA-American Items; and ii) independently of any work performed under any Agreements.

“Supplier’s Mere Reconfigurations” means those specific reconfigurations of Supplier’s pre-existing software performed by Supplier, or on Supplier’s behalf, but only to the extent that such reconfiguration is an alteration to such software which is strictly required to permit Supplier's software to function on PA-American’s network or service platform. In no event shall Supplier’s Mere Reconfigurations include enhancements, modifications, or updates that are not contained in Supplier’s Pre-Existing Materials and that add any features, functionality, or capabilities.

“Intellectual Property Rights” means all patents (including all reissues, divisions, continuations, and extensions thereof) and patent applications, trade names, trademarks, service marks, logos, trade dress, copyrights, trade secrets, mask works, rights in technology, know-how, rights in content (including but not limited to performance and synchronization rights), or other intellectual property rights, protected under the laws of any governmental authority having jurisdiction.

Section 10. Right to Terminate:

PA-American has the right to terminate this Agreement, in its entirety or any portion thereof, at any time without penalty. Should PA-American terminate this Agreement at any time, Supplier shall be entitled to keep and collect all fees billed to PA-American prior to the termination date which are not the subject of a dispute between the parties. Further, Supplier shall be entitled to charge, and PA-American agrees to pay for all properly performed Services as of the termination date in accordance with the rates set forth in Section 6 or, in the case of a fixed fee, a prorata share of the monthly billing during the month in which the Agreement was terminated. Said prorata share shall be calculated by dividing the total number of days worked by Supplier during the month in which the Agreement is terminated, by the total number of calendar days in the month in which the Agreement was terminated.

Section 11. Mutual Limitation of Liability:

Appraiser and Client agree that the following mutual limitation of liability is agreed to in consideration of the fees to be charged and the nature of Appraiser’s services under this Agreement. Except as set forth below, Appraiser and Client agree that to the fullest extent permitted by applicable law, each party’s and its Personnel’s maximum aggregate and joint liability to the other party for claims and causes of action relating to this Agreement shall be limited to the higher of [\$50,000] or the total fees and costs charged by Appraiser for the services provided pursuant to this Agreement. Except as set forth below, this limitation of liability extends to all types of claims or causes of action, whether in breach of contract or tort, including without limitation claims/causes of action for negligence, professional negligence or negligent misrepresentation on the part of either party or its Personnel, but excluding claims/causes of action for grossly negligent conduct, intentionally fraudulent conduct, criminal conduct, intentionally caused injury or claims for

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indemnification. The Personnel of each party are intended third-party beneficiaries of this limitation of liability. "Personnel," as used in this paragraph, means the respective party's staff, employees, members, partners and shareholders, acting within the scope of their employment. Appraiser and Client agree that they each have been free to negotiate different terms than stated above or contract with other parties.

Section 12. Invoices/Billing Information:

The Supplier agrees to submit invoices in paper and or electronic form with appropriate references to the PA-American Point of Contact identified in Section 13.

Section 13. Project Manager/Point of Contact/Legal Counsel:

The project manager and/or point of contact of Supplier shall be:

Jerome C. Weinert, Principal
WAD Consultants
5880 Fenton Court
Greendale, Wisconsin 53129
E-Mail: weinertj@auswest.net
414-698-8371 (office)

The point of contact for PA-American shall be:

Scott D. Fogelsanger, Senior Business - Development Manager
Pennsylvania-American Water Company
852 Wesley Drive,
Mechanicsburg, PA 17055
717-550-1509 (office)
717-875-2282 (cell)
Email: Scott.Fogelsanger@amwater.com

The Legal Counsel contact for PA-American shall be:

Andrew L. Swope, Vice President, General Counsel
Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
717-550-1560 (office)
717-574-2691 (cell)
Email: Andrew.Swope@amwater.com

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Section 14. Signatures:

WAD Consultants (Supplier)

DocuSigned by:
Jerome Weinert
52D8D4D673CB44B

Jerome C. Weinert

February 1, 2023

2/3/2023

Pennsylvania American Water Company

DocuSigned by:
Bernard Grundusky
304149B93144451...

Bernard J. Grundusky

February 1, 2023

2/6/2023

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Agreement to Provide Valuation Consulting Services
Between

AUS Consultants

And

Pennsylvania America Water Company
For the Appraisal of the

Borough of Brentwood's Sanitary Sewer System

As of the most recent period (Third Quarter 2020)

Agreement for Valuation Consulting Services

This Agreement for Valuation Consulting Services (“Agreement”) is by and between AUS Consultants, a New Jersey corporation (“Supplier”) and Pennsylvania-American Water Company, a Pennsylvania corporation (“PA-American”) and is entered into as of September 30, 2020. In consideration of the covenants hereinafter contained, and intending to be legally bound, the Parties hereto agree to as follows:

Section 1. Description of Services:

Supplier is being engaged to act as a Utility Valuation Expert, as such term is defined in Pennsylvania Act 12 of 2016, amending Chapter 13 of the Pennsylvania Public Utility Code and the First and Second Implementation Orders entered by the Public Utility Commission at Docket No. M-2016-2543193 (collectively, “Act 12”). Supplier is being engaged with respect to the proposed acquisition by PA-American of the sanitary sewer system assets currently owned by the Borough of Brentwood (PA). Upon the issuance of a notice to proceed by PA-American for each appraisal phase, Supplier shall prepare and produce the following appraisals and/or studies suitable for the Project, including if requested (collectively, the “Services”):

1. An Appraisal (Valuation study) consistent with the 2020-2021 Uniform Standards of Appraisal Practices (USPAP) as of the date requested by PA-American and consistent with the requirements of Act 12.
2. If applicable, provide expert witness testimony and documentation for the Valuation studies as required by Act 12.
3. If requested by PA-American, updates to the Valuation studies as of the date requested by PA-American.
4. Provide the documentation required by Act 12 with respect to the Services and the fees charged by Supplier pursuant to this Agreement.
5. If requested by PA-American, perform such other services as are consistent with Supplier’s engagement as a Utility Valuation Expert.

Section 2. Duration:

Unless amended, the Project subject to this Agreement is anticipated to be approximately two years in duration and will be performed for the period beginning upon the issuance of a notice to proceed by PA-American and continuing through September 30, 2022. Supplier acknowledges and agrees that it shall not and shall have no obligation to provide the Services until such time as PA-American has issued a notice to proceed. To the extent Act 12 imposes any requirements with respect to the timing for the completion of the Services, the commencement date for such Services shall not be deemed to be any earlier than the date PA-American issues the notice to proceed.

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Section 3. Effective & Expiration Dates:

This Agreement shall be effective as of the date set forth in the first paragraph hereof (“Effective Date”) and shall continue until the earlier to completion on the Project or September 30, 2022 (“Expiration Date”) unless earlier terminated as set forth in this Agreement.

Section 4. Personnel to Perform the Services:

Jerome C. Weinert, Principal and Director, shall be in charge of the Services on behalf of Supplier. Supplier shall call upon additional experienced professional staff as required. In the event that this Project or Agreement should not continue for any reason, or should PA-American replace the need for Supplier, PA-American shall give notice as soon as feasibly possible for Supplier to re-deploy their resources elsewhere without any penalty to PA-American.

Both parties recognize the importance of maintaining a continuity of Supplier’s personnel on this Project. Supplier agrees that any of its employees, staff, professionals, experts, partners, and/or other personnel: (a) identified as the “Project Team” identified in Section 6 of this Agreement, and/or (b) assigned to this Project subsequent to the execution of this Agreement, shall continue to be staffed on this Project throughout the entire length of time Project Services are provided under this Agreement. Further, said personnel shall be used in the same capacities in which they are initially intended as of the execution date of this Agreement, or as of the date they are assigned to the Project subsequent to execution date of this Agreement, so long as they continue to be employed by Supplier, or so long as PA-American continues to desire their services.

Should Supplier terminate its relationship and/or employment with said personnel, or if said personnel terminates the relationship with Supplier and/or resigns from employment with Supplier, to the extent that Supplier, for any reason, enters into non-compete or similar agreement(s) and/or arrangement (s) with any of its employees, staff, professionals, experts, partners, and/or other personnel, Supplier agrees to immediately release said personnel from non-compete or similar agreement(s) and/or arrangement(s) with respect to being able to work for PA-American in any capacity PA-American sees fit.

Should any or all of Suppliers employees, staff, professionals, experts, partners, and/or other personnel staffed on this Project leave the employ of Supplier during the terms of this Agreement, Supplier agrees to immediately notify PA-American and suggest alternative personnel to be staffed on the Project. In no event shall any Supplier employee, staff, professional, expert, partner, and/or other personnel be assigned to this Project (whether identified in this Section 4, or identified elsewhere subsequent to the execution of this Agreement) without the express written permission and approval by PA-American. Further, PA-American reserves the right to terminate the Services of any of Supplier employee, staff, professional, expert, partner, and/or other personnel working on this Project at any time, and for any reason, without penalty.

Section 5. Location:

Supplier’s (AUS Consultants’) offices in Greenfield, Wisconsin and various PA-American Company’s sites as may be required.

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Appendix A-5.1 (WAD)

Section 6. Prices:

Supplier fees for the Services are as follows:

Appraisal Activity	Preliminary Appraisal	Appraisal completion to a Section 1329 Compliant Appraisal	Total Appraisal	Expenses (not to exceed)
	Fees	Fees	Fees	Expense
Appraisal				
Initial Appraisal	\$10,000	\$15,200	\$25,200	\$3,200
Appraisal updates		\$2,500	\$2,500	\$800
Pre-filed Direct testimony related to the above described Valuation studies		\$3,000	\$3,000	\$500

Valuation Activity performed by AUS Consultants staff following the filing of the PUC Application	Hourly Rates plus expenses
Jerome C. Weinert	\$250
Staff Consultants	175
Michael Diedrich	225
Elizabeth A. Weinert	150

The expenses in the above tables are for travel and living, report production and shipping.

Supplier recognizes that its fees for the Project are subject to disclosure pursuant to Act 12 and so that Pa-American can include such fees as part of the transaction and closing costs associated with the proposed acquisition of the Project. Supplier further recognizes that its fees shall not exceed five percent (5%) of the fair market value of the assets to be acquired as part of the Project unless such fees are approved by the Pennsylvania Public Utility Commission ("PUC"). Supplier agrees that its fees shall comply with the requirements of Act 12.

Section 7. Payment:

Payment all undisputed amounts shall be made within 60 days upon PA-American being invoiced each month for all work completed during the prior month, or partial payment upon being invoiced should this appraisal engagement be suspended.

All payment terms are Net 60.

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Section 8. Non-Disclosure:

A. The Parties agree as follows:

1. In connection with the Project, PA-American may find it beneficial to disclose to Supplier certain confidential or proprietary information in written, oral or other tangible or intangible forms, which may include, but is not limited to, discoveries, ideas, concepts, know-how, techniques, designs, specifications, drawings, blueprints, tracings, diagrams, models, samples, flow charts, data, computer programs, disks, diskettes, tapes, marketing plans, customer names and other technical, financial or business information (individually and collectively, "Information"). All Information which is disclosed by PA-American to Supplier, whether provided in tangible or intangible form, including, but not limited to, electronic mail or other electronic communications, shall be deemed to be confidential or proprietary. Further, if Information is provided orally, including Information conveyed to an answering machine, voice mail box or similar medium, it shall too be deemed to be confidential or proprietary.
2. Supplier shall:
 - a. Hold such Information in confidence with the same degree of care with which Supplier protects its own confidential or proprietary Information, but no less than reasonably prudent care;
 - b. Restrict disclosure of the Information solely to its employees, contractors and agents with a need to know such Information, advise those persons of their obligations hereunder with respect to such Information, and assure that such persons are bound by obligations of confidentiality no less stringent than those imposed in this Agreement;
 - c. Use the Information only as needed for the purposes of the Project;
 - d. Except for the purposes of the Project, not copy, distribute, or otherwise use such Information or knowingly allow anyone else to copy, distribute, or otherwise use such Information; any and all copies shall bear the same notices or legends, if any, as the originals; and,
 - e. Upon request, promptly return to PA-American all Information that is in tangible form; as to Information that was disclosed or is stored in intangible form, including, but not limited to electronic mail or other electronic communications, upon request by the PA-American, Supplier shall certify in writing within five (5) business days to PA-American that all such Information has been destroyed or, if the Information was recorded on an erasable storage medium, that Supplier has used reasonable efforts to erase all such Intangible Information.
3. Except for customer Information, Supplier shall have no obligation to preserve the confidential or proprietary nature of any Information which:
 - a. Was already known to the Supplier free of any obligation to keep it confidential at the time of its disclosure by PA-American as evidenced by Supplier's written records prepared prior to such disclosure; or
 - b. is or becomes publicly known through no wrongful act of Supplier; or

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Appendix A-5.1 (WAD)

- c. is rightfully received from a third person having no direct or indirect secrecy or confidentiality obligation to PA-American with respect to such Information; or
 - d. is independently developed by an employee, contractor or agent of Supplier or a third party not associated with the Project and who did not have any direct or indirect access to the Information, as evidenced by the Supplier's written records; or
 - e. is approved for release by written authorization by PA-American; or,
 - f. it is required to disclose pursuant to a written request or demand of a duly empowered government agency or a court of competent jurisdiction, provided due notice and an adequate opportunity to intervene is given to PA-American, unless such notice is prohibited by such written request or demand, in which case, the Supplier shall disclose only such Information as is required and shall use reasonable efforts to obtain confidential treatment for any Information that is so disclosed.
4. Any Information relating to the Project that is disclosed by PA-American to Supplier shall remain confidential for five (5) years from the date of termination of the Agreement. Notwithstanding anything to the contrary herein, Customer Information shall remain confidential indefinitely and shall never be disclosed or used without the prior written approval of an authorized representative of PA-American. "Customer Information" includes, but is not limited to, customer name, address, phone number, information concerning a customer's calling patterns, unlisted customer numbers, any other information associated with a customer or with persons in the household of a customer, and any information available to PA-American and/or its suppliers by virtue of PA-American's relationship with its customers as a provider of telecommunications, Internet, information or other services, including, but not limited to, the quantity, technical configuration, location, type, destination, amount of use of telecommunications or other services subscribed to, and information contained on the telephone bills of PA-American's customers pertaining to telephone exchange service, telephone toll service or other services received by a customer of PA-American.
 5. Any disclosed Information by PA-American shall be deemed the property of PA-American, who shall retain exclusively rights to such Information. Nothing contained in this Agreement shall be construed as granting or conferring any patent, copyright, trademark or other proprietary rights by license or otherwise in any such Information to Supplier, except for the right to use such Information in accordance with this Agreement.
 6. NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, PA-AMERICAN MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY NATURE WHATSOEVER WITH RESPECT TO ANY INFORMATION FURNISHED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR WARRANTIES AGAINST INFRINGEMENT.
 7. In the event Supplier discloses, disseminates, or releases any confidential or proprietary Information received from PA-American, except as expressly permitted herein, such

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disclosure, dissemination, or release shall be deemed a material breach of this Agreement. In the event of such breach, PA-American may demand prompt return of all confidential and proprietary Information previously provided to Supplier and terminate this Agreement. The provisions of this Section are in addition to any other legal rights or remedies PA-American may have in law or in equity.

8. This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania, irrespective of its choice of law principles. Both Parties agree to comply with all laws, including, but not limited to, laws and regulations regarding the export of information outside the United States. Supplier shall not knowingly transmit, directly or indirectly, in whole or in part, any Information of PA-American or export, directly or indirectly, any product or Information in contravention of the laws of the United States or the laws of any other country governing the aforesaid activities. Supplier shall not transfer any Information received hereunder or any product made using such Information to any country prohibited from receiving such data or product by the U.S. Department of Commerce Export Administration Regulations without first obtaining a valid export license. In the event Supplier violates the foregoing, Supplier shall defend, indemnify, and hold harmless PA-American from and against any claim, loss, liability, expense or damage including fines or legal fees, incurred PA-American with respect to the export or re-export activities contrary to the foregoing. Notwithstanding any other provision of this Agreement, this Section shall survive any termination or expiration of this Agreement.

Section 9. Ownership of Paid-For Development, Use and Reservation of Rights:

PA-American shall be the exclusive owner of all right, title, and interest in and to all Paid-For Development (defined below), including, without limitation, all Intellectual Property Rights therein and thereto. Supplier shall assign or have assigned to PA-American and hereby assigns to PA-American all Intellectual Property Rights in and to the Paid-For Development. "Paid-For Development" shall mean any and all Items to the extent produced or developed by or on behalf of Supplier or its employees, agents, or direct or indirect contractors or suppliers (and whether completed or in-progress), or forming part of any deliverable, pursuant to this Agreement (including, without limitation under any statement of work, exhibit, order or other document under, subordinate to, or referencing this Agreement or the Project) (collectively "Agreements") for the development of which PA-American has been charged monies in one or more of the Agreements ("Development Fees"). Paid-For Development shall always exclude all Excluded Materials, but shall include (without limitation) any modifications, alterations or updates of any Excluded Materials ("Enhancements") that otherwise fall within the definition of Paid-For Development ("Paid-For Enhancements"). PA-American's ownership of Paid-For Enhancements shall be subject to Supplier's underlying rights and ownership in Supplier's Excluded Materials.

"Items" shall mean any or all inventions, discoveries, ideas, (whether patentable or not), and all works and materials, including but not limited to products, devices, computer programs, source codes, designs, files, specifications, texts, drawings, processes, data or other

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information or documentation in preliminary or final form, and all Intellectual Property rights in or to any of the foregoing.

“Excluded Materials” shall mean: i) Supplier’s Pre-Existing Materials; ii) Supplier’s Independently Developed Materials; and iii) Supplier’s Mere Reconfigurations.

“Supplier’s Pre-Existing Materials” shall mean those Items owned by Supplier to the extent and in the form that they both existed prior to the date Supplier began any work under this Agreement and were created without any use of any PA-American Items. Supplier’s Pre-Existing Materials shall not, however, include Paid-For Enhancements thereto.

“Supplier’s Independently Developed Materials” shall mean those Items that have been developed by Supplier, or on Supplier’s behalf, both i) without use of any PA-American Items; and ii) independently of any work performed under any Agreements.

“Supplier’s Mere Reconfigurations” means those specific reconfigurations of Supplier’s pre-existing software performed by Supplier, or on Supplier’s behalf, but only to the extent that such reconfiguration is an alteration to such software which is strictly required to permit Supplier’s software to function on PA-American’s network or service platform. In no event shall Supplier’s Mere Reconfigurations include enhancements, modifications, or updates that are not contained in Supplier’s Pre-Existing Materials and that add any features, functionality, or capabilities.

“Intellectual Property Rights” means all patents (including all reissues, divisions, continuations, and extensions thereof) and patent applications, trade names, trademarks, service marks, logos, trade dress, copyrights, trade secrets, mask works, rights in technology, know-how, rights in content (including but not limited to performance and synchronization rights), or other intellectual property rights, protected under the laws of any governmental authority having jurisdiction.

Section 10. Right to Terminate:

PA-American has the right to terminate this Agreement, in its entirety or any portion thereof, at any time without penalty. Should PA-American terminate this Agreement at any time, Supplier shall be entitled to keep and collect all fees billed to PA-American prior to the termination date which are not the subject of a dispute between the parties. Further, Supplier shall be entitled to charge, and PA-American agrees to pay for all properly performed Services as of the termination date in accordance with the rates set forth in Section 6 or, in the case of a fixed fee, a prorata share of the monthly billing during the month in which the Agreement was terminated. Said prorata share shall be calculated by dividing the total number of days worked by Supplier during the month in which the Agreement is terminated, by the total number of calendar days in the month in which the Agreement was terminated.

Section 11. Invoices/Billing Information:

The Supplier agrees to submit invoices in paper and or electronic form with appropriate references to the PA-American Point of Contact identified in Section 12.

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Section 12. Project Manager/Point of Contact/Legal Counsel:

The project manager and/or point of contact of Supplier shall be:

Jerome C. Weinert
Principal and Director
AUS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
E-Mail: weinertj@auswest.net
414-529-5755 (office)
414-529-5750 (fax)
414-698-8371 (cell)

The point of contact for PA-American shall be:

Scott D. Fogelsanger, Senior Business - Development Manager
Pennsylvania-American Water Company
852 Wesley Drive,
Mechanicsburg, PA 17055
717-550-1509 (office)
717-875-2282 (cell)
Email: Scott.Fogelsanger@amwater.com

The Legal Counsel contact for PA-American shall be:

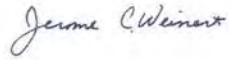
Andrew L. Swope, Vice President, General Counsel
Pennsylvania-American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055
717-550-1560 (office)
717-574-2691 (cell)
Email: Andrew.Swope@amwater.com

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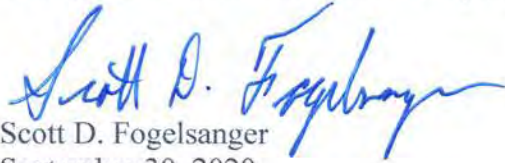
Section 13. Signatures:

AUS Consultants (Supplier)



Jerome C. Weinert
September 30, 2020

Pennsylvania American Water Company



Scott D. Fogelsanger
September 30, 2020

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BOROUGH OF BRENTWOOD
WASTEWATER SYSTEM ASSETS

FAIR MARKET VALUE APPRAISAL

AT

JANUARY 13, 2023

Prepared by:





March 1, 2023

Via email to gzboyovsky@brentwoodboro.com

George Zboyovsky, PE, ICMA-CM
Borough Manager
Brentwood Borough
3735 Brownsville Road
Pittsburgh, PA 15227

Dear Mr. Zboyovsky:

Fair Market Value Appraisal

In accordance with your request, we have prepared a fair market value appraisal of Borough of Brentwood's wastewater system assets ("Wastewater System") as of January 13, 2023.

Fair market value is defined 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 arm's 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." (The International Glossary of Business Valuation Standards)

Based on our analysis, as described in the attached appraisal report, the estimate of the fair market value of the Wastewater System, as of January 13, 2023, is \$20,934,000 (rounded).

Our appraisal was developed consistent with the Uniform Standards of Professional Appraisal Practices. Our fair market value appraisal of the Wastewater System was based on the Cost, Market, and Income Approaches to valuation. We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The attached narrative appraisal presents our findings and conclusions regarding the fair market value of the Wastewater System's assets of January 13, 2023. The report describes the valuation methodologies employed and the Exhibits that present the valuation results.



The results of the analyses and calculations completed for each applicable approach are detailed throughout the report and the Exhibits and are summarized as follows:

<u>Valuation Approach</u>	<u>Indicated Value</u>
Cost Approach	\$19,856,726
Income Approach	21,817,878
Market Approach	21,128,331

We thank the Borough of Brentwood for this opportunity to provide valuation services in connection with the fair market value appraisal of the Wastewater System's assets.

Respectfully Submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

A handwritten signature in black ink, appearing to read "Harold Walker, III".

HAROLD WALKER, III
Manager, Financial Studies

HW:mle

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INTRODUCTION

Introduction and Summary. The following narrative report presents our findings and conclusions regarding the fair market value of the wastewater system assets of the Borough of Brentwood as of January 13, 2023. The report describes the valuation methodologies employed and the Exhibits that present the valuation results. Based upon the analyses, we believe the fair market value of the Borough of Brentwood’s wastewater system assets is \$20.9 million (\$20,934,000 rounded). This conclusion is based upon the values suggested by the Cost, Income, and Market approaches. During our analysis we found indications of value that ranged from \$19.9 million to \$21.8 million. However, most of the appropriate indicated values approximated \$20.9 million.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by the Borough of Brentwood (“Borough”) to estimate the fair market value of the Borough of Brentwood’s wastewater system assets (“Wastewater System”) as of January 13, 2023.

Standard and Premise of Value. The fair market value appraisal of the Wastewater System complies with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. Fair market value is defined 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 arm’s 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.”¹

¹ The International Glossary of Business Valuation Standards

Appendix A-5.2 (Gannett)

As stated, the standard of value for this engagement is fair market value.² The premise of value is the going concern. The going concern premise of business value assumes that the business will continue running normally using all its assets to produce income and will continue operating beyond the valuation date.

We valued the Wastewater System's assets as a group under the premise that the assets collectively comprise an ongoing operating business enterprise. Additionally, in accordance with 66 Pa. C.S. Section 1329, the original source of funding for any part of the Wastewater System's assets was not relevant to the determination of the value of said assets.

Subject Interest. The consideration in this transaction is a 100% interest in Borough of Brentwood's wastewater operations, which means that the buyer would be able to control the Wastewater System's operations going forward. This subject interest is marketable but is not a liquid interest. The binding agreement governing this transaction is the asset purchase agreement.

Intended Use of the Valuation. The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. Although our appraisal is intended to estimate fair market value, we assume no responsibility for the inability of the seller or buyer to obtain a sale or purchase contract at that price.

Client and Users. The client is the Borough of Brentwood. The intended users of the valuation are the Borough of Brentwood, Pennsylvania American Water Company, Inc., and the Pennsylvania Public Utility Commission ("PUC").

2 Pratt, Shannon P. "Defining Standards of Value." Valuation 34, no. 2, June 1989.
<http://www.appraisers.org/docs/default-source/college-of-fellows-articles/defining-standards-of-value.pdf>.

Appendix A-5.2 (Gannett)

Jurisdictional Exceptions. In accordance with 66 Pa. C.S. Section 1329, and PUC rules, the acquiring public utility and selling utility jointly retain a licensed engineer to conduct an assessment of the tangible assets of the system (“Engineering Assessment”) to be acquired. The Engineering Assessment is required to be used by the appraiser in determining fair market value. The Engineering Assessment provides both a condition assessment and original cost inventory of the assets. We used the Engineering Assessment’s condition assessment and inventory of the assets for this assignment.

Extraordinary Assumptions. There were no extraordinary assumptions required for this appraisal.

Hypothetical Conditions. There were no hypothetical conditions assumed for this appraisal.

Limiting Conditions. We accepted all information and data provided by the Borough of Brentwood as it pertains to this assignment “as is” after a limited review. That is, we neither audited nor verified any data, engineering assessment, financial record or operating data provided for this assignment. We assumed all title to all assets included in the appraisal is good and marketable, no hidden defects in the property or soil and no hazardous conditions or materials exist which could affect the assets. We are not an environmental consultant or auditor, and we take no responsibility for any actual or potential environmental liabilities. We have not made a specific compliance survey or analysis of the subject property to determine whether it is subject to, or in compliance with, the American Disabilities Act of 1990, and this valuation does not consider the effect, if any, of noncompliance.

Appendix A-5.2 (Gannett)

The economic and industry information and data included in this report have been obtained from various printed or electronic reference sources that we believe to be reliable. We have not performed any corroborating procedures to substantiate that information and data.

Site Inspection. We viewed or observed the Wastewater System's facilities on February 20, 2023. We also relied on engineering assessment of the Wastewater System's facilities report, "Engineering Assessment Study of: Brentwood Borough's Sanitary Sewer System" and related files prepared by The Gateway Engineers, Inc., to confirm the condition of the Wastewater System's property and equipment.

Fiduciary Duty. Gannett Fleming has a fiduciary duty to, and does provide a thorough, objective, and fair market valuation using the cost, market, and income approaches in accordance with 66 Pa. C.S. Section 1329 and Pennsylvania laws.

Gannett Fleming attests that it does not derive any material financial benefit from the sale of, or purchase of, a selling utility other than fees for services rendered. Gannett Fleming also verifies it does not have any immediate family members who are directors, officers or employees of either an acquiring public utility, entity or selling utility within a 12-month period of the date of hire to perform this appraisal. We further affirm that Gannett Fleming is not directly or indirectly owned, partnered or in any way affiliated with a water/wastewater distribution company.

Sources of Information. The following sources of information were reviewed during the assignment:

"Engineering Assessment Study of: Brentwood Borough's Sanitary Sewer System" and related files prepared by The Gateway Engineers, Inc.;

Borough provided electronic files (e.g., PDF and Excel);

Wastewater System's Customer data;

Wastewater System's Fee Schedule;

Wastewater System's 537 Plan;

Wastewater System's Chapter 94 Reports;

Wastewater System's Sewage Service and Treatment Agreements;

Wastewater System's Source Reduction Plan;

Wastewater System's Operation and Maintenance Plan annual reports (2018 – 2021)

Asset Purchase Agreement;

Borough of Brentwood's Audited Financials (2018 - 2021);

Borough of Brentwood's Budgets for Wastewater System (2021 - 2022);

Blue Chip Financial Forecasts;

US Census Bureau, various data files;

Value Line Investment Survey; and

S&P Capital IQ.

Description of the Borough of Brentwood. The Borough is in Allegheny County in southwestern Pennsylvania. The Borough has three borders, including Baldwin Borough to the east and northeast, Whitehall Borough to the south and west, and the Pittsburgh neighborhood of Carrick to the northwest. The Borough is the 71st largest land mass of Allegheny County's 128 municipalities and was the 33rd most populous with 9,268 people (2019) and 4,429 housing units (2018). The Borough consists of 1.4 square miles and lies approximately 5 miles south of downtown Pittsburgh, Pennsylvania. According to U.S. Census figures, the Borough's population grew 4.6% from 2010 to 2020, while population in Pennsylvania grew 2.4% and Allegheny County grew 2.2%.

Description of the Wastewater System. The Borough owns and operates the Wastewater System which provides service to 3,980 customers within a population of 9,971 people. The Wastewater System assets consists of about 199,934 linear feet of gravity mains, approximately 1,055 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows are treated at the Allegheny County Sanitary Authority ("ALCOSAN") sewage treatment facility in Pittsburgh, Pennsylvania.

As a result of the Wastewater System contracts with ALCOSAN for wastewater treatment services, the Wastewater System is bound by the terms of a federal consent order to reduce intrusion and infiltration into the sanitary sewer system. The Wastewater System is aggressively working to improve the quality of this infrastructure now to lessen the financial burden of upgrades in future years. The Wastewater System utilizes traditional excavation and replacement methods, as well as trenchless lining and bursting techniques, to eliminate structural defects within these pipes. The Wastewater System also uses CCTV to document the conditions of municipal sewers and to plan for future repairs. Since 2014, CCTV inspections of 270,443 linear feet of mains has been completed including 177,922 linear feet over the past five years. Additionally, the Wastewater System continues to budget for important but often overlooked maintenance items, such as the cleaning and inspection of maintenance of manholes and lamp holes.

The Wastewater System's 199,934 linear feet of gravity sewer collection mains consist of 6-inch, 8-inch, 10-inch, 12-inch, 15-inch, and 18-inch diameter pipe which was installed between 1919 to 2014. About 75% of the gravity mains were installed between 1927 and 1938. The mains consist of vitrified clay (VCP), polyvinyl chloride (PVC), ductile iron (DIP), and cast iron (CIP) pipe. The Wastewater System lined approximately 20% (39,269 linear feet) of gravity

mains between 2005 and 2021. There are 1,055 manholes and 4,036 service laterals in the system.

The Borough utilizes one enterprise fund to account for the Wastewater System's operations. The Borough's audited financial statements reflect the use of the modified accrual accounting, which measures cash and all other financial assets that can readily be converted to cash and provide limited detailed information for the Wastewater System. For example, only assets expected to be used up and liabilities that come due during the year or soon thereafter are reported for the Wastewater System.

During our analysis, we used the Borough's audited financial statements, and the Borough's 2022 budget for the Wastewater System. For the year ended December 31, 2021, (shown on Exhibit 1) the Wastewater System had reported revenues of \$4.457 million and expenses of \$3.563 million. As in previous years, the Wastewater System's operating expense did not include salary, wage and benefits that are expensed via a transfer to the General fund for these expenses. On December 31, 2021, the Wastewater System was capitalized with \$4.142 million of fund equity and \$0.048 million of debt attributable to the Wastewater System. At the same point in time, the Wastewater System had total assets of \$4.808 million and did not report net utility plant.

The Wastewater System is exempt from PUC regulation as a municipal utility. The Wastewater System's rate requirements are established by the needed funds to run the system. Most municipalities, including Wastewater System, use a Government Accounting Standards Board ("GASB") process of accounting or the PA Department of Community and Economic Development ("DCED") versus Financial Accounting Standards Board ("FASB") method of accounting used by investor-owned utilities ("IOU"). Municipalities are not typically concerned

with the return on and the return of their investments of their utility systems since they deem they are providing a public service to their taxpayers. Municipalities typically expense (i.e., maintenance expense) renewals replacement, and customer collection services capital expenditures and they do not typically fully account for the replacement of all capital assets which are all typically capitalized (i.e., construction of capital asset, construction expenditure, etc.) and “booked” at original cost by IOUs. For these reasons, we do not believe Wastewater System’s financial statements should be fully relied upon without recognizing their limitations.

Demographics and Growth for the Wastewater System. As shown on Exhibit 3, Table 3.1, according to U.S. Census figures, the U.S. population grew 7.4% from 2010 to 2020, and the population in Pennsylvania grew 2.4%. During this same period, Allegheny County’s population grew 2.2% and the Borough’s population grew 4.6% (Exhibit 3, Table 3.2). The Borough’s population growth was ranked 485 of the 2,572 municipalities in Pennsylvania.

The Census Bureau and planning agencies provide population projections for future time periods. Population projections are a primary indicator of expected future growth, and they help determine predictable demand for utility services, housing, roads, business services and facilities. The Southwestern Pennsylvania Commission (“SPC”) is the regional planning agency serving the 10-county Southwestern Pennsylvania region. The 10-county Southwestern Pennsylvania region includes the counties of Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland, and the City of Pittsburgh. The SPC publishes population projections and employment projections for the 10-county Southwestern Pennsylvania region and the municipalities which comprise the counties, which include the Wastewater System’s service area.

As shown on Page 2 of Exhibit 3, Table 3.3, the Borough’s population growth is projected

to be about 78% (9.2% ÷ 11.9%) of the growth rate projected for the total SPC Region during each five-year period from 2020 through 2045. The Borough's projected population growth places them in the upper 71 percent, or 71st percentile of the 586 municipalities analyzed by SPC.

Page 3 of Exhibit 3, Table 3.4 shows the Borough's employment growth is projected to be about 188% (6.6% ÷ 3.5%), which ranks them 166 and places them in the upper 72 percent, or 72nd percentile of the 586 municipalities analyzed by SPC.

Currently, there are approximately 9,971 people (Exhibit 2) in the Wastewater System's service area and 9,922 people in households. There are 4,452 occupied housing units in the Wastewater System's service area, and the ratio of people to households is 2.24 persons per household. The Wastewater System's service area density is 2.5 people per customer based on an estimated population of 9,971 and 3,980 customers. The Wastewater System's service area density is lower than the 3.6 per customer density of water and wastewater systems (see Table 2 in this report) indicating higher market penetration.

HISTORY AND NATURE OF THE BUSINESS

Economic Outlook. The valuation date (January 13, 2023) is the specific date at which the value of the Wastewater System is based. Generally, only the circumstances existing at the valuation date and events occurring up to the valuation date are considered. Events which could affect the value may occur after the valuation date.

An outbreak of a new strain of coronavirus was first reported in Wuhan, China in late 2019 and quickly spread around the world. A coronavirus is a kind of common virus that causes an infection in sinuses, or upper throat. The World Health Organization ("WHO") declared the spread of the infection a pandemic. The WHO named the virus SARS-CoV-2, and the disease

COVID-19.

We do not believe the appraised value of the long-lived Wastewater system assets is materially impacted by COVID-19 or its related relatively short-term events and does not significantly affect the determination of value as of the specified valuation date of January 13, 2023. In the valuation of any company, the general economic outlook as of the valuation date is important since it influences how investors perceive alternative investment opportunities at that point in time. As part of our analysis, we considered the forecasts for the U.S. economy that prevailed as of January 13, 2023. We focused on the forecasts and economic commentary presented in Blue Chip Financial Forecasts in the January 1, 2023 edition. Some of these economic forecasts are presented in Table 1.

<u>Economic Indicators</u>			
	<u>Latest Qtr</u>	<u>Consensus Forecasts</u>	
	<u>4Q 2022</u>	<u>1Q 2023</u>	<u>2Q 2023</u>
<u>Key Assumptions</u>			
Real GDP	1.0	-0.2	-0.7
GDP Price Index	4.3	3.6	3.0
Consumer Price Index	4.5	3.4	3.1
<u>Interest Rates</u>			
3-mo. Treasury Bills	4.17	4.8	4.9
10 Year Notes	3.82	3.8	3.8
30 Year Notes	3.89	4.0	4.0
Aaa Corporate Bond Yield	5.15	5.1	5.2
Baa Corporate Bond Yield	5.90	6.1	6.3
State & Local Bonds	4.46	4.3	4.4
Home Mortgage Rate	6.69	6.5	6.5

Table 1

Industry Review. A review of the industry in which the company operates is important in determining value. The trends and stability of the specific economic environment affecting operations need to be reviewed to gain further insight regarding the prospects and risks associated with the industry and each company.

The wastewater utility industry has a Standard Industrial Classification (“SIC”) code of 4952 (Sewerage Systems), has sewer utilities, and includes establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided. There are currently 2,069 U.S. Businesses with a SIC code of 4952.

The wastewater utility industry is a fragmented industry, although not as fragmented as the water supply industry. According to the U.S. Environmental Protection Agency’s (“EPA”) most recent survey of publicly owned wastewater treatment facilities in 2012, there are approximately 15,000 such facilities in the nation, serving approximately 76% of the U.S. population. Eighty percent of domestic wastewater systems are government owned rather than IOUs. Currently, there are no wastewater utility companies that have actively traded stock.

A comparative industry to the wastewater utility industry is the water supply industry. The water utility industry has a Standard Industrial Classification (“SIC”) code of 4941 (Water Supply), has water utilities, and includes establishments primarily engaged in distributing water for sale for residential, commercial, and industrial uses. Government controlled establishments such as municipal service districts and public utilities dominate the industry. Private companies or IOUs are active in the construction and improvement of water supply facilities and infrastructure. There are currently 11,424 U.S. Businesses with a SIC code of 4941.

The water supply industry is the most fragmented of the major utility industries with more than 53,000 community water systems in the U.S. (82% of which serve less than 3,300 customers).

The nation's water systems range in size from large municipally owned systems, such as the New York City water system that serves approximately 9 million people, to small systems, where a few customers share a common well.

An estimated 14% of all water suppliers are managed or owned by IOUs. IOUs consist of companies with common stock that is either actively traded or inactively traded, as well as companies that are closely held, or not publicly traded. Currently (January 13, 2023), there are only about nine investor-owned water utility companies with publicly traded stock in the U.S.

The water utility industry and wastewater utility industry's increased compliance with state and federal water purity levels and large infrastructure replacements are driving consolidation of the water utility and wastewater utility industries. Because many water utility and wastewater utility operations do not have the means to finance the significant capital expenditures needed to comply with these requirements, many have been selling their operations to larger, financially stronger operations.

The larger IOUs have been following an aggressive acquisition program to expand their operations by acquiring smaller water and wastewater systems. Generally, they enter a new market by acquiring one or several water or wastewater utilities. After their initial entry into a new market, the larger investor-owned water utility companies continually seek to expand their market share and services through the acquisition of water and wastewater utility businesses and operations that can be integrated with their existing operations. Such acquisitions may allow a company to expand market share and increase asset utilization by eliminating duplicate management, administrative, and operational functions. Acquisitions of small, independent utilities can often add earning assets without necessarily incurring the costs associated with the Safe Drinking Water Act ("SDWA") if such acquisitions are contiguous to the potential purchaser.

In summary, the result of increased capital spending, to meet the SDWA and Clean Water Act (“CWA”) requirements³ and to replace the aging infrastructure of many systems, has moved the water and wastewater industries toward consolidation. Moreover, Federal and State regulations and controls concerning water quality are still in the process of being developed and it is not possible to predict the scope or the enforceability of regulations or standards which may be established in the future, or the cost and effect of existing and potential regulations and legislation upon the water and wastewater systems. However, as a small to medium sized wastewater system, the Wastewater System faces the cost of compliance with significantly limited financial resources, competing for financial needs against other municipal services and the general unwillingness of elected officials to raise taxes when compared to larger IOU water utilities.

QUANTITATIVE AND QUALITATIVE ANALYSIS

Comparison Review. The comparison review considers the financial and operating statistics for the Wastewater System, and a group of companies (“Comparable Group”) that operate in the same basic or similar industry as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Wastewater System. We list the Comparable Group chosen for study in Table 2.

The companies in the Comparable Group were selected based upon: (1) the availability of

³ The SDWA, or Safe Drinking Water Act, is the principal federal law in the United States intended to ensure safe drinking water for the public. Pursuant to the act, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. The CWA, or Clean Water Act, is the primary federal law in the United States governing water pollution. The CWA’s objective is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

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financial information; (2) inclusion in the S&P Capital IQ database; (3) a January 13, 2023 market value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than \$350 million; (4) a January 13, 2023 total enterprise, the sum of market value, preferred stock and total debt, greater than \$550 million; (5) were not the subject of a known acquisition at January 13, 2023; (6) with a Standard Industrial Classification (SIC) of 4941 (i.e., Water Supply Facilities and Infrastructure) and (7) with a North American Industry Classification System (NAICS) of 221310 (i.e., Water Supply and Irrigation Systems). The eight companies (“Comparable Group”) that met the criteria for selection are listed in Table 2.

	<u>Acquisition Date Size Statistics</u>			
	<u>Revenues</u> (Mill. \$)	<u>Customers</u>	<u>Population</u>	<u>Customer Density</u>
Brentwood Borough Wastewater System Assets	<u>\$3.764</u>	<u>3,980</u>	<u>9,971</u>	<u>2.5</u>
<u>Comparable Group</u>				
American States Water Co	\$498.853	287,500	1,000,000	3.5
American Water Works Co Inc	3,930.000	3,530,000	14,000,000	4.0
Artesian Resources -CL A	90.859	100,640	326,700	3.2
California Water Service Gp	790.909	547,600	2,000,000	3.7
Essential Utilities, Inc.	1,878.144	1,820,049	5,000,000	2.7
Middlesex Water Co	143.141	121,300	500,000	4.1
SJW Corp	573.686	398,000	1,526,000	3.8
York Water Co	<u>55.119</u>	<u>73,144</u>	<u>204,000</u>	<u>2.8</u>
Median	<u>\$536.270</u>	<u>342,750</u>	<u>1,263,000</u>	<u>3.5</u>

Table 2

We believe that similar economic, industry and business risks have affected the

Comparable Group as those faced by the Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike. Table 2 presents comparative statistics regarding total revenues, customers, population of the area served, and customer density (population ÷ customers). On average, the Comparable Group are larger than the Wastewater System. The relative size difference between the group and the Wastewater System suggests that the risk of the Wastewater System is greater than the Comparable Group. We will discuss the difference in risk resulting from size later in this report.

Financial Review. We conducted a financial review that considered the financial and operating statistics for the Wastewater System and the Comparable Group for the three-year period, 2019 to 2021. It is our opinion that the economic, industry and business risks affecting the Comparable Group selected are similar to those faced by the Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike.

The determination of reasonable water rates and sewer rates for the Comparable Group is subject to rate regulation. For the Comparable Group, rate regulation serves as a substitute for competition in the marketplace since utility companies are precluded from exercising complete control over the price to be charged their customers. Under rate regulation, a cost of service formula is used to set the price for service charged to customers. The cost of service formula equates revenues to the sum of annual operating expenses, taxes other than income, depreciation expense, income taxes, and the product of the rate base times a fair rate of return.

It is the responsibility of the utility seeking changes in rates to present sufficient evidence to their regulators in support of their request. Historically, the Wastewater System's rates have not considered a fair rate of return nor taxes. That is, the Wastewater System's rates would have been higher and their financial results would have been healthier if they included a provision for a

fair rate of return and taxes. Additionally, after comparing the Wastewater System's historical financial performance to budgeted numbers we believe the Wastewater System's historical financial performance (pre-transfers) do not include all expenses.⁴ As a result, the Wastewater System's historical financial performance shown on Exhibits 4 and 6 have been adjusted to include non-capital expenditure transfers as operating expense. Consequently, the results of the Wastewater System's historical financial performance shown on Exhibits 4 and 6 should be viewed with this knowledge.

Financial Benchmark Analysis. To gain insight into the risk differences between the Wastewater System and the Comparable Group, we reviewed financial ratios and coverages. Unfortunately, there is no single measure that best indicates investment risk from an investor's perspective. However, from a creditor's viewpoint, the best measure of investment risk is debt rating. The debt rating process generally provides a good measure of investment risk for common stockholders because the factors considered in the debt rating process are usually relevant factors that a common stock investor would consider in assessing the risk of an investment.

The types of financial benchmarks applied by credit rating agencies such as Standard and Poor's ("S&P") for rating IOU public utility debt are broader than the traditional measure of financial risk, leverage. Besides reviewing the amounts of leverage employed (i.e., percentage of debt used in the capital structure), S&P also focuses on earnings protection and cash flow adequacy. During the period 2019-2021, the Wastewater System's financial benchmark ratios show (Exhibit 4) lower investment risk than the Comparable Group based on coverage and cash flow.

⁴ The Wastewater System's operating expense did not include salary, wage and benefits that are paid via a transfer to the General fund for these expenses.

Risk Analysis. From an operations standpoint, the Wastewater System and the Comparable Group are indistinguishable. Both are required to meet SDWA and CWA requirements and are also required to provide safe and reliable services to their customers.

A basic premise of finance is the tradeoff between risk and return. That is, the higher the perceived risk, the higher the required return. Conversely, the lower the perceived risk, the lower the required return.

As mentioned previously, size is a determinant of risk. Based on size, the Wastewater System's risk is higher than the Comparable Group given Wastewater System's relatively small size. Table 2 details the size difference between the Wastewater System and the Comparable Group. As shown on Table 2, the Wastewater System is many times smaller than the Comparable Group.

Size is a determinant of risk because the loss of a large customer impacts a small company much more than a large company because a large customer of a small company usually accounts for a larger percentage of the small company's sales. Further, a larger company has much more diversification in customer mix, economic conditions, source of supplies, weather, demographic, and financing than the Wastewater System. Because the larger Comparable Group has a more diverse geographic operation than the Wastewater System, it enables them to sustain earnings fluctuations caused by adverse weather conditions in one portion of its service territory. Further, the larger Comparable Group has a more diverse customer base and is less susceptible to local downturns associated with regional economic conditions than the Wastewater System.

Exhibit 5, Table 5.1, provides an illustration which shows company size has been inversely related to returns and the volatility of their common stock. Specifically, Ibbotson Associates sorted 2,966 publicly traded common stocks based on size of market value (market price multiplied

Appendix A-5.2 (Gannett)

by the number of shares) and placed them into four different portfolios (quartiles). The common stock quartile return, and the resultant size premium, column B, increased at an increasing rate as you move from a larger stock quartile to a smaller stock quartile. Similarly, the total risk, or standard deviation of annual returns (a measure of risk), also increased with decreasing company size (column C).

The Comparable Group's market value on January 13, 2023, ranged from \$567 million to \$28,887 million as shown on Table 5.2 of Exhibit 5. Based on their market value, the Comparable Group's median market quartile was 2. Wastewater System's market value would place them in quartile 4 based upon Wastewater System's financial statements and since the largest company in quartile 4 on Table 5.1 had a market value of \$452 million.

The change in risk adjusted common stock return rate between quartile 2 and quartile 4 (column J) is 180 basis points (3.45% - 1.65%). The results of the illustration shown on Exhibit 5 suggests the Wastewater System's common equity cost rate could be about 180 basis points higher than the Comparable Group. The history of common stock returns indicates small company stocks are riskier than large company stocks because as one moves from the larger to smaller quartiles, the standard deviation (a measure of risk) of returns increases. Historically, common stock investors have been compensated for taking on this additional risk by the higher returns provided by small company stocks.

In general, it is reasonable to expect small companies to be more risky than large ones. Exhibit 5 shows small company stocks have been riskier over a long period of time than larger company stocks due to the various advantages that larger companies have over smaller companies. For example, small capitalized firms generally have less access to capital and, overall, not as many

financial resources. Further, small capitalized stocks have lower trading liquidity than larger ones.

The bond market, particularly the corporate bond market, also differentiates between large and small bond issues, where many large institutional investors such as pension funds and insurance companies require large blocks of bonds for liquidity and performance. Because of this size preference, smaller bond issuers often pay a cost rate premium when compared to larger bond issuers.

A higher return requirement for companies the size of Wastewater System translates into a higher capitalization rate. All else being equal, a higher capitalization rate will produce a lower value. However, all things are seldom equal as shown by the array of market multiples for the companies that comprise the Comparable Group (Exhibit 18, page 2). As shown on Exhibit 18, the Comparable Group's current market multiples do not suggest a higher capitalization rate due to size as there are numerous other risks affecting the Comparable Group's market values.

Property Plant and Equipment Analysis. The Wastewater System can best be characterized as a wastewater collection system with treatment rights. The Wastewater System does not have the number of large treatment facilities that the Comparable Group has. The Wastewater System's gross property, plant and equipment is in relatively good condition given its age (Exhibit 6, Table 6.1) with 70% of their gross property, plant and equipment remaining undepreciated while 78% of the Comparable Group's gross property, plant and equipment remained undepreciated.⁵

⁵ The Wastewater System's gross and net property, plant and equipment is developed on Exhibit 7.

Property Plant and Equipment Analysis for Contributions. Most regulatory commissions determine rates for utilities based on a cost of service formula reflective of gross plant, property, and equipment less accumulated depreciation (i.e., net property, plant, and equipment) being roughly equal to investor provided capital (i.e., debt and equity capital) plus “cost free” capital such as customer contributions. Under 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Wastewater Systems), the original source of funding for any part of the assets of a selling utility is not relevant to determining the value of a selling utility’s assets.

We found a 19% (100% - 81%) difference between the Comparable Group’s net property, plant and equipment and the Comparable Group’s investor provided capital on the valuation date (Exhibit 6, page 1, Table 6.2). The difference between the Comparable Group’s net property, plant and equipment and the Comparable Group’s investor provided capital is comprised of “cost free” capital such as customer contributions.⁶ This is evidenced by the 19% difference in the Comparable Group’s net property, plant and equipment and the Comparable Group’s investor provided capital (Exhibit 6, page 1, Table 6.2). Additionally, we verified known components of the Comparable Group’s “cost free” capital by reviewing their individual balance sheets (Exhibit 6, page 1, Table 6.2) at year-end 2021.

We did not analyze the Wastewater System’s property, plant, and equipment for “cost free” capital, or customer contributions, because the original source of funding for any part of the assets of a selling utility is irrelevant to the valuation process under 66 Pa. C.S. Section 1329.

Capital Expenditures Analysis. The level of capital expenditures required for business purposes is an indicator of risk. Over the last four years, the Comparable Group had annual

⁶ Under rate regulation “cost free” capital, such as customer contributions, is subtracted from plant assets in determining the dollar amount of property on which a utility may earn a “fair rate of return” and therefore, “cost free” capital has no economic value to investors.

capital expenditures of about 9% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2018 to 2021, the Wastewater System did not report net plant. Therefore, the Wastewater System historical capital spending relative to net plant could not be calculated.

Growth Rate Analyses. Higher growth rates are an indication of less risk. A review of the growth rates in revenue, operating income plus depreciation and operating income, reveal that the Wastewater System's revenue has been growing more, while the operating income plus depreciation and operating income grew less than the Comparable Group (Exhibit 6, page 4, Table 6.4) over the last three years. Prospectively, the Wastewater System's growth rates should lag the Comparable Group's without increased rates and a higher level of planned capital additions.

Profit Margin Analyses. Higher profit margins are an indication of less risk. We compared earnings before interest and taxes ("EBIT") to revenues to see how successful the Wastewater System's management has been at generating income from the operation of the business. We also compared operating profitability or earnings before interest, tax, depreciation, and amortization ("EBITDA") divided by total revenue to gain a clearer view of the Wastewater System's core profitability. The Wastewater System's EBITDA profit margins are lower than the Comparable Group's, as are the EBIT profit margins, indicating more risk (Exhibit 6, page 5, Table 6.5).

VALUATION

The purpose of this valuation is to comply with 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Water Systems) and conduct a fair market value appraisal of the Wastewater System's assets as of January 13, 2023 in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches. Consequently, three basic valuation approaches were considered in this analysis: the cost approach, the income approach, and the market approach.

The Cost Approach. In general terms, the cost approach measures value by determining the amount of money required to replace the future service capability of an asset. The cost approach is based on the premise that an informed purchaser will not pay more for a property than the cost of constructing an equally desirable substitute property, minus applicable depreciation, and assuming no undue delay.

The cost approach can include the use of the: original cost method; trended original cost method; reproduction cost method; and replacement cost method. From these cost bases, the calculated accrued depreciation (accumulated depreciation) is subtracted.

The original cost method begins with determining the original cost new ("OCN") measure of the cost of the assets when first constructed. The OCN is based on (1) a review and summary of the utility's accounting records, contractors' invoices and bid tabulations to determine the most appropriate data sources of each type of asset; (2) and the "pricing out" of assets using unit costs for each vintage year that property was placed in service.

Under the trended cost method, the trended original cost (“TOC”) measures the reproduction cost by multiplying the OCN by specific cost indices. The TOC is based on (1) a review and summary of the OCN at each location to determine those elements that would be replaced-in-kind, those that would be replaced with current methods and technologies and those that would not be replaced; (2) the selection of cost indexes and the calculation of trended original cost for those elements that would be replaced-in-kind; and (3) the estimation of the cost to purchase or construct those elements that would be replaced with current methods and technologies. The TOC is a procedure for estimating reproduction cost new of property and is sometimes used as a substitute for reproduction cost method and may be considered a form of the reproduction cost method, though not as precise.

The reproduction cost method begins with determining the reproduction cost new (“RPCN”) by determining the current cost of constructing identical new property. The replacement cost method begins with estimating the replacement cost new (“RCN”) based on approximating the current cost of replacing service of existing property with similar new property having the nearest equivalent utility to the property being valued (as defined by the *International Glossary of Business Valuation Terms*).

The RPCN and the RCN methods include the research and verification of the inventory of a company’s tangible personal property. Upon verification of the inventory, current material costs, current construction costs, engineering costs, administration costs, interest during construction, and entrepreneurial profit⁷ are applied to the inventory listing in order to determine the RPCN and to determine the RCN.

⁷ The administration costs and entrepreneurial profit are those of the contractors and engineers. The cost of overhead of the entity having the assets constructed can also be included. Generally overhead costs are allocated as part of an asset’s cost, and usually represent at least 5% to 15% of infrastructure asset total costs.

Appendix A-5.2 (Gannett)

The RPCN method assumes the assets would be recreated under the conditions existing at the date certain or valuation date, using the exact materials, standards, design, layout, and quality of workmanship used to create the original assets. The RCN assumes the assets would be recreated under the conditions existing at the date certain or valuation date, using similar materials, current standards, under current conditions with similarly functional property.

From these cost bases (i.e., OCN, TOC, RPCN and RCN), the calculated accrued depreciation (accumulated depreciation) is subtracted (“LD”). The calculated accrued depreciation is based on the assets’ attained ages, and the service life of the assets. The cost bases of depreciable assets are reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed.

Depreciation represents the loss in property value from: physical deterioration; functional obsolescence; and external obsolescence. The accrued depreciation represents the sum of the annual depreciation amounts that would have been charged for depreciation at a point in time. Accrued depreciation is a calculated amount that would be in the book reserve account at a point in time using the current depreciation parameters (i.e., average service life). The average service lives of depreciable assets are based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized “survivor curves” known as the Iowa type curves. The accrued depreciation ratio from a survivor curve is a concept that is used to estimate the consumed service capacity of plant at a point in time. The survivor curve is used to find the applicable accrued depreciation factors of the assets to result in the total accumulated depreciation.

The Original Cost Method. For this report, the Borough provided us a copy of the Engineer's assessment report "Engineering Assessment Study of: Brentwood Borough's Sanitary Sewer System" and related files prepared by The Gateway Engineers, Inc., to confirm the condition of the Wastewater System's property and equipment. We utilized the Engineering Assessment and calculated the Original Cost and Related Accrued Depreciation of the Wastewater System as of January 13, 2023 ("OCNLD Study") shown on Exhibit 7.

Page 1 of Exhibit 7 summarizes the original cost and related accrued depreciation by account for the Wastewater System as of January 13, 2023. The original cost was brought forward from page 2 of Exhibit 7 and the accrued depreciation from page 3 of Exhibit 7.

The original cost of the Wastewater System was determined from the Engineering Assessment and is summarized on page 2 of Exhibit 7. A summarizing analysis of the original cost of the Wastewater System by account and vintage year is shown on Exhibit 8.

The accrued depreciation calculation, shown on page 3 of Exhibit 7, was based on recognized methods using estimated survivor characteristics and the straight-line depreciation method. The estimated survivor curves are those used by other Pennsylvania regulated wastewater companies and the material and age of the assets. The average service life procedure was used to apply the methods of depreciation to group properties for which a survivor curve was used to recognize the existence of life dispersion. The detailed calculations of accrued depreciation applicable to original cost by account and vintage are included in Exhibit 8.

The results of the OCNLD Study established that the OCN of the Wastewater System's utility plant in service as of January 13, 2023, was not less than \$9.9 million (\$9,942,185 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$3.0 million (\$3,016,883 rounded) as of January 13, 2023. After

factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Wastewater System's utility plant in service as of January 13, 2023, was determined to be \$6.9 million ($\$9,942,185 - \$3,016,883 = \$6,925,302$).

The Replacement Cost Method. We utilized the OCN to calculate the trended original cost (TOC) measures, or the replacement cost of the depreciable assets (RCN), by multiplying the OCN by specific transition factors.⁸ The transition factors included both cost changes measured during TOC process and preliminary obsolescence, so all RPCN values were valued on an RCN basis. The result of this analysis is shown in the Replacement Cost and Related Accrued Depreciation of the Wastewater System as of January 13, 2023 ("RCNLD Study") shown on Exhibit 9.

Page 1 of Exhibit 9 summarizes the replacement cost new and related accrued depreciation by account for the Wastewater System as of January 13, 2023. The replacement cost new was brought forward from page 2 of Exhibit 9 and the accrued depreciation from page 3 of Exhibit 9.

The replacement cost new of the Wastewater System (see Exhibit 10) was calculated by trending the original cost measures by multiplying the OCN by Handy-Whitman indices and obsolescence factors.⁹ A summarizing analysis of the replacement cost new of the Wastewater System by account and vintage year and related transition factors is shown on Exhibit 10.¹⁰

The accrued depreciation calculation, shown on page 3 of Exhibit 9, was based on recognized methods using estimated survivor characteristics and the straight-line depreciation method. The estimated survivor curves are those used in the OCNLD Study. The average service

⁸ We used the TOC method because the mandated use of the Engineering Assessment's original cost essentially dictates the use of TOC over the reproduction cost or the replacement cost methods.

⁹ See the Accrued Depreciation and Obsolescence section of this report for a further discussion.

¹⁰ All land and land rights were valued at original cost.

life procedure was used to apply the methods of depreciation to group properties for which a survivor curve was used to recognize the existence of life dispersion. The detailed calculations of accrued depreciation applicable to replacement cost new by account and vintage are included in Exhibit 11.

The results of the RCNLD Study established that the RCN of the Wastewater System's utility plant in service as of January 13, 2023 was not less than \$74.4 million (\$74,425,731 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$54.6 million (\$54,569,005 rounded) as of January 13, 2023. After factoring in the RCNLD Study's accrued depreciation reserve, the RCNLD of Wastewater System's utility plant in service as of January 13, 2023 was determined to be \$19.9 million ($\$74,425,731 - \$54,569,005 = \$19,856,726$).

The results of the OCNLD and preliminary RCNLD Cost Approaches show a range of value for the Wastewater System of \$6.9 million to \$19.9 million and collectively, indicated value of \$19.9 million (\$19,856,726 rounded) for the Wastewater System based on the results of the preliminary RCNLD.

Benchmark Metrics. Besides providing an indication of value based upon a cost method, the OCN and OCNLD can also be used to calculate meaningful benchmark metrics. These benchmark metrics are utilized to evaluate the reasonableness of other indications of value produced by alternative valuation methods, including the cost method itself. For example, the Comparable Group's market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents ("Enterprise Value") is currently 1.78-times (Exhibit 18, page 2) their OCNLD or net property, plant and equipment. Similarly, the Comparable

Group's Enterprise Value is currently 1.41-times (Exhibit 18, page 2) their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" understate the multiple applicable to the Wastewater System because some of the Comparable Group's property, plant and equipment includes assets that were originally financed with "cost free" capital such as customer contributions.¹¹ Subtracting customer contributions ("CIAC") from the Comparable Group's property, plant and equipment (Exhibit 18, page 3) based on differences between investor provided capital and OCN results in CIAC adjusted multiples of 2.04-times OCNLD and 1.62-times OCN for the Comparable Group.

Multiplying the Wastewater System's OCN of \$9.9 million by the Comparable Group's 1.41-times OCN multiple or the 1.62-times contributions adjusted OCN multiple indicates a range of market value of \$14.0 million to \$16.0 million for the Wastewater System, below the RCNLD of \$19.9 million. Further, multiplying the Wastewater System's OCNLD of \$6.9 million by the Comparable Group's 1.78-times OCNLD multiple or the 2.04-times contributions adjusted OCNLD multiple indicates a range of market value of \$12.3 million to \$14.1 million for the Wastewater System, below the RCNLD of \$19.9 million.¹² The aforementioned range of market values for the Wastewater System are not a substitute for an appraisal. However, the referenced range of market values for the Wastewater System can be a meaningful metric to evaluate the reasonableness of other indication of value produced by other valuation methods.

¹¹ Under rate regulation "cost free" capital, such as customer contributions, is subtracted from plant assets in determining the dollar amount of property on which a utility may earn a "fair rate of return" and therefore, "cost free" capital has no economic value to investors.

¹² Similarly, multiplying the Wastewater System's number of customers of 3,980 by the Comparable Group's \$10,609-times customer multiple and produced a market value of \$42.2 million, which is above the RCNLD of \$19.9 million.

Accrued Depreciation and Obsolescence. The accrued depreciation reflects the total loss in value from RCN due to physical deterioration, functional and economic obsolescence. The physical deterioration was accounted for with our determination of average service lives of depreciable assets. The average service lives used in determining the preliminary RCNLD reflect the materials used for construction, age, and the average length of time the depreciable assets are likely to meet service demands.

Functional obsolescence (“FO”) is a “form of deterioration due to a feature in the property that is no longer useful or functional, resulting in a loss of value for the entire property.”¹³ FO is sometimes evident due to increased operating costs, increased maintenance costs, lost profits and for a wastewater utility, excessive inflow and infiltration (“I&I”). Neither the Engineering Assessment or the Wastewater System’s Chapter 94 Reports noted excessive I&I, capacity-related bypassing, excessive SSOs or surcharging that are not being addressed. Additionally, the Engineering Assessment did not find any assets that were no longer useful or functional. Therefore, we conclude no significant FO is suggested.

Economic obsolescence (“EO”) refers to the loss of value that is caused by factors that are external to the property. “EO manifests itself in the profit margin of business. If the operating margin of an asset or group of assets is below what provides a sufficient economic return to the supporting assets, and there is a difference between the existing operating level/capacity and a

¹³ “Physical Deterioration: The loss in value of a real estate property due to the physical wearing out of a building,” *Corporate Finance Institute*, Updated October 3, 2021. Accessed 6/20/22. <https://corporatefinanceinstitute.com/resources/knowledge/other/physical-deterioration/>

sufficient operating/level capacity, EO may be an issue.”¹⁴ To evaluate EO we compared our RCNLD value of \$19.9 million to the economic values produced by our Income and Market Approaches, discussed later in this report, and conclude no significant EO is suggested.

Cost Approach Conclusion. On page 4 of Exhibit 9 we reduced our RCN indicated value of \$74.4 million for accrued depreciation in reaching our RCNLD conclusion. The RCNLD’s accrued depreciation reflects the total loss in value from RCN due to physical deterioration, functional and economic obsolescence. We ascribed \$54.6 million to physical deterioration and found no functional obsolescence or economic obsolescence in reaching our \$19.9 million RCNLD conclusion. The results of the RCNLD method of \$19.9 million (\$19,856,726 rounded) form the basis for our Cost Approach conclusion, shown on Exhibit 9, page 4. Based on this result, the Cost Approach to valuation indicates a value of \$19.9 million for the Wastewater System’s based on the RCNLD method.

The Income Approach. Capitalizing or discounting a future income stream to a present value provides an indication of the value of a security or asset. The capitalization or discount rate reflects future growth, business risk, economic factors, financial risk, and industry risk of the assets. The theory behind the income approach is that the value of a business is the future economic benefit that ownership will provide.

The two most common methods of the income approach to valuation are the capitalization of earning or cash flow method and the discounted cash flow method (“DCF”). The capitalization of earning method converts a single base economic income number to a value by dividing it by a

¹⁴ Mickle, Joseph and Sapnas, Charles. “Perspectives, Economic Obsolescence: Discover Loss of Value Caused by External Factors,” *Valuation Research Corporation*. Accessed 6/20/22. [https://www.valuationresearch.com/pure-perspectives/economic-obsolescence-determining-loss-value-caused-external-factors/#:~:text=Economic%20obsolescence%20\(EO\)%20is%20the,companies%20in%20capital%2Dintensive%20industries.](https://www.valuationresearch.com/pure-perspectives/economic-obsolescence-determining-loss-value-caused-external-factors/#:~:text=Economic%20obsolescence%20(EO)%20is%20the,companies%20in%20capital%2Dintensive%20industries.)

capitalization rate. The capitalization of earnings is best suited when the future earnings, or cash flow, can be predicted. The implicit assumption in the capitalization of earning method is that the cash flow is a perpetuity, and the capitalization rate is a constant.

The DCF method uses estimates of future free cash flow and discounts them to arrive at a present value or price of the cash flows. Generally, the DCF analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty five years along with a terminal value. In each year, the Debt Free Net Cash Flow is comprised of projected EBIT, minus income taxes, plus projected depreciation, and amortization, minus projected changes in net cash working capital, and minus projected capital expenditures. The second element of the DCF analysis is the determination of an appropriate discount rate.

The capitalization rate used in the capitalization of earnings method and the discount rate used in the DCF method are related. The discount rate is the market participant's opportunity cost rate related to the risk of the cash flows. For the Wastewater System, the market participants are assumed to include IOU and larger regional municipal authorities ("MUNI"). For the Wastewater System, the appropriate discount rate is the current municipal revenue bond yield on January 13, 2023, of 3.98%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on January 13, 2023, and ranges from 7.90% to 9.80%.¹⁵ The capitalization rate is simply the discount rate minus the expected growth rate. If no growth is assumed, the capitalization rate is equal to the discount rate.

The capitalization of earnings method is generally a reasonable approach for valuing the

¹⁵ Both the American Society of Appraisers, ASA Business Valuation Standards, 2009, and the National Association of Certified Valuation Analysts, Professional Standards, 2007, use the same definition: "Weighted Average Cost of Capital (WACC). The cost of capital (discount rate) determined by the weighted average, at market values, of the cost of all financing sources in the business enterprise's capital structure."

Wastewater System as it is currently owned (i.e., non-IOU) and operated. However, change in ownership of the Wastewater System to a MUNI or IOU produces a myriad of problems for both the capitalization of earnings method and the DCF Method because any future cash flow estimates would be hypothetical or estimated due to the uncertain nature that would accompany new ownership including future rates, future expenses, future capital expenditures, taxes, and regulation.

For a MUNI, the appropriate discount rate is the current municipal revenue bond, 3.98%, because debt is the only major source of capital available to finance an acquisition (Exhibit 23, pages 2-6). Although a MUNI likely carries equity on their books (balance sheet), all existing equity is already invested in other assets and therefore, cannot be used to finance an acquisition.¹⁶ For valuation purposes, an embedded cost of debt, or the historical cost of all debt issuances outstanding is not used because this capital is already invested in assets. Whereas the marginal cost of debt, 3.98%, at the valuation date is used in accordance with accepted valuation practices and used for market valuation purposes.

As discussed previously, for an IOU, the appropriate discount rate is the net of tax overall cost of capital (weighted average cost of capital), 7.90% to 9.80% (Exhibit 23, pages 2-8). In this instance, the net of tax overall cost of capital (weighted average cost of capital) is based on the Comparable Group's market value capital structure of 23.7% debt and 76.3% equity, a market cost of debt of 5.14% and a range of market cost of equity of 9.21% to 11.69%.¹⁷ The Comparable

¹⁶ For example, when a municipal or government entity, such as the Commonwealth of Pennsylvania, finance construction of a road or bridge, they only consider the marginal debt cost despite having "equity" reflected on their books (balance sheet).

¹⁷ For example, see <http://www.investinganswers.com/financial-dictionary/financial-statement-analysis/weighted-average-cost-capital-wacc-2905>. Also see <http://www.wallstreetmojo.com/weighted-average-cost-capital-wacc/>, or <http://accountingexplained.com/misc/corporate-finance/wacc>.

Group's net of tax overall cost of capital (weighted average cost of capital) is used as a proxy to conform to the "hypothetical buyer" or "hypothetical seller" of fair market valuation. Use of the buyer's net of tax overall cost of capital (weighted average cost of capital) would produce an investment valuation, not a fair market valuation.¹⁸

We began the Income Approach for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized or discounted. The Debt Free Net Cash Flow is comprised of EBIT, minus income taxes, plus depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. The development of Wastewater System's Debt Free Net Cash Flow begins on Exhibit 1 and ends on Exhibits 12 through 16.

Differences in accounting practices exist between GASB, DCED and FASB because there are differences in their purpose. The GASB's and DCED's impetuses are to make sure government entities are accountable for the money they receive from the public or taxpayers, while the FASB's focus is to help investors and creditors make decisions. These differences in accounting objectives between GASB, DCED and FASB can present a problem when it comes to comparing the financial statements of entities that are either publicly or privately owned, such as the Wastewater System and the Comparable Group.

Exhibit 1 presents the Wastewater System's financial information contained in their financial statements, so it is more consistent with the Comparable Group and more practical for valuation purposes. The information on Exhibit 1 was used to develop Exhibits 12 through 16.

¹⁸ We did not use the 6.78% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation because a "hypothetical buyer" cannot finance an acquisition at such a rate and therefore, its use would provide a meaningless result. Where the 6.78% DSIC related cost was determined based the Comparable Group's book value capital structure of 49.1% debt and 50.9% equity, a cost of debt of 5.14% and a DSIC cost of equity of 9.75%. We note the 6.78% Comparable Group's DSIC related net of tax overall cost of capital falls below the 7.90% to 9.80% range of discount rates used in our Income Approach.

As noted previously, the Wastewater System's financial statements and their rates did not include taxes, a fair rate of return, nor complete expenses. Accordingly, on Exhibits 13 through 16 we adjusted the Wastewater System's post-2022 financial information for pro forma expenses and returns to be reflective of a MUNI or IOU ownership.

The Capitalization of Earnings Method. The capitalization of earnings method begins with an estimate of the income or cash flow producing capabilities of the business (Exhibit 12) for a recent time period and assumes current ownership and operations. We began the capitalization of earnings method for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized. The Debt Free Net Cash Flow is comprised of current EBIT, minus income taxes, plus current depreciation and amortization, minus projected changes in net cash working capital, and minus projected capital expenditures. Specifically, our capitalization of earnings method capitalizes Wastewater System's current (budget 2022) Debt Free Net Cash Flow. The second element of the capitalization of earnings method is the determination of an appropriate capitalization rate. Our analysis uses the current municipal revenue bond yield on January 13, 2023, of 3.98% (Exhibit 12, line 24) as the capitalization rate. We also did a second capitalization of earnings calculation based on a 3.78% capitalization rate (Exhibit 12, line 27), or 20-basis points below the current level because we assumed the Wastewater System's Debt Free Net Cash Flow growth will be at least 0.2% (20-basis points).

We computed the Wastewater System's indicated value based on the capitalization of earnings method by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow. We considered ranges of growth in the capitalization of earnings method. Essentially, we considered two ranges of growth in the capitalization of earnings method, no

growth and 0.2% growth. However, based upon our quantitative and qualitative analysis, and population growth, we believe the 0.2% growth scenario is reasonable for the Water System based on current ownership and operations.

For pro forma 2022, we adjusted the Wastewater System's Debt Free Net Cash Flow (Exhibit 12, page 2, lines 23 and 28) to include the average 2019-2022 capital expenditure to get a clearer picture of Debt Free Net Cash Flow. Exhibit 12 shows the results of the capitalization of earnings method. For the Wastewater System, the capitalization of earnings method using a 3.98% capitalization rate (no growth) indicates a value of -\$0.8 million (negative) to -\$0.9 million (negative) on pro forma 2022 results due to the existence of negative debt free net cash flow. Negative debt free net cash flow is indicative of a system which requires adjustments to their rates if they plan to remain operational. The capitalization of earnings method using a 3.78% capitalization rate (growth) indicates a value of \$1.1 million to \$1.2 million on pro forma 2022 results. Collectively, for Wastewater System, we believe the 0.2% growth scenario is the most probable result based on current ownership and operations and therefore, the capitalization of earnings method suggests a value of \$1.2 million based on pro forma 2022 results and current operations (without rate increases) and ownership.

The DCF Method. For the Wastewater System, the DCF method considers two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model ("Market Multiple DCF") and the capitalization of terminal value model ("Capitalization DCF"). We show the results of these models on Exhibits 13 through 16.

The DCF method begins with an estimate of the income or cash flow producing capabilities of the business. Specifically, our DCF methods use estimates of the results of the Wastewater System's operations over the next 20 years. We use two different assumptions for the Wastewater

Appendix A-5.2 (Gannett)

System's future operations in the DCF methods: MUNI ownership shown on Exhibits 13 and 15; and IOU ownership shown on Exhibits 14 and 16.

Under the MUNI ownership the discount rate is the current 3.98% municipal revenue bond yield and under the IOU ownership the discount rate is the current net of tax overall cost of capital, reflecting the upper and lower range of the net of tax overall cost of capital for the Comparable Group of 7.90% to 9.80%. For the Capitalization DCF, the capitalization rate reflects a scenario of no additional growth (i.e., discount rate = capitalization rate) and a scenario of minimal growth of 0.2% (i.e., discount rate – 0.2% growth = capitalization rate) under MUNI ownership and 0.2% growth (i.e., discount rate – 0.2% growth = capitalization rate) under IOU ownership based on inflation, population growth, and changes in Debt Free Net Cash Flows.

We computed the Market Multiple DCF terminal values by multiplying the Wastewater System's projected EBITDA and EBIT by the Comparable Group's adjusted multiples of 16.4-times and 25.9-times, respectively. We computed the Capitalization DCF terminal value by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow.

Exhibit 13 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 13 show a range of value for the Wastewater System of \$9.0 million to \$9.3 million. The results of the Market Multiple DCF shown on Exhibit 13 show a value of \$9.0 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$9.1 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 14 shows the results of the DCF method under the IOU ownership scenario. The results of the Capitalization DCF shown on Exhibit 14 show a range of value for Wastewater

System of \$5.9 million to \$7.4 million. The results of the Market Multiple DCF shown on Exhibit 14 show a range of value of \$8.0 million to \$10.0 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$7.7 million for the Wastewater System.¹⁹

The DCF method based on the MUNI ownership scenario indicates a value of \$9.1 million and the DCF method based on the IOU ownership scenario indicates a value of \$7.7 million. Collectively, the DCF method indicates a value of \$8.4 million based on OCNLD.

Change in ownership of the Wastewater System to a MUNI or an IOU produces a myriad of problems for the DCF Method. Under a MUNI purchase, future cash flow estimates are uncertain because they would reflect the actual price paid for the acquisition. Under an IOU purchase and the associated regulation by the PUC, future cash flow estimates are uncertain since regulation by the PUC would result in an unknown determination of rate base and the related depreciation and authorized/achieved earning levels. In the current instance, we know the Market Approach and the Cost Approach (RCNLD) indicate values considerably higher than the OCNLD value.

Therefore, Exhibits 13 and 14 are recalculated on Exhibits 15 and 16 to reflect revenues and cash flows derived from an earnings base between the values indicated by the RCNLD and the Market Approach. Exhibit 15 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 15 show a range of

¹⁹ If we used the 6.78% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 14, the results of the Capitalization DCF would show a value for Wastewater System of \$8.7 million. Further, the results of the Market Multiple DCF would show a value of \$11.5 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$10.1 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of \$9.1 million and the DCF method based on the IOU ownership scenario indicates a value of \$10.1 million. Collectively, the DCF method indicates a value of \$9.6 million when DSIC is considered.

value for the Wastewater System of \$22.9 million to \$23.5 million. The results of the Market Multiple DCF shown on Exhibit 15 show a value of \$22.2 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$22.9 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 16 shows the results of the DCF method under the IOU ownership. The results of the Capitalization DCF shown on Exhibit 16 show a range of value for Wastewater System of \$15.7 million to \$20.2 million. The results of the Market Multiple DCF shown on Exhibit 16 show a range of value of \$21.4 million to \$27.0 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$20.8 million for the Wastewater System.²⁰

The DCF method based on the MUNI ownership scenario indicates a value of \$22.9 million and the DCF method based on the IOU ownership scenario indicates a value of \$20.8 million. Collectively, the DCF method indicates a value of \$21.8 million as summarized on Exhibit 17.

The Market Approach. There are two methods of doing the Market Approach to valuation: the market multiples method; and the selected transaction method. We developed both the market multiples method and the selected transaction method in our valuation analysis.

The Market Multiples Method. The market multiples method valuation begins by reviewing market price data of corporations engaged in the same or a similar line of business as the Wastewater System. We relied upon market data for the Comparable Group for these

²⁰ If we used the 6.78% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 16, the results of the Capitalization DCF would show a value for Wastewater System of \$23.7 million. Further, the results of the Market Multiple DCF would show a value of \$31.2 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$27.6 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of \$22.9 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of \$27.6 million. Collectively, the DCF method indicates a value of \$25.2 million when DSIC is considered.

purposes since they are equally affected by similar economic, industry, and business risks as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Wastewater System. The specific market price data reviewed includes the market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents (i.e., Enterprise Value). Where the market value of common equity is the product of multiplying the closing stock price by the number of common shares outstanding. The Enterprise Value provides an indication of the value of the entire business. The Enterprise Value multiples (“Market Multiples”) are shown on Exhibit 18. For the Comparable Group, the Market Multiples were calculated as of January 13, 2023, based on the latest twelve months of financial data available at the appraisal date.

We used the Comparable Group’s Enterprise Value on January 13, 2023, and calculated Market Multiples of: revenue (“Revenue”); EBITDA; EBIT; gross property plant and equipment (“GPPE”); net property plant and equipment (“NPPE”); investor provided capital (“ICAP”); utility customers (“Customers”); and population of the area served (“Population”).

The next step in the market multiples method valuation was applying the Comparable Group’s Market Multiples to corresponding financial and operating statistics of the Wastewater System. The Comparable Group’s Market Multiples reflect their capitalization rate of each financial and operating statistic. For example, a Market Multiple of EBIT of 16.14 times equates to a capitalization of EBIT of 6.20% ($1 \div 16.14 = 6.20\%$). Each capitalization rate is unique to the entity and the statistic being evaluated and reflects the growth and investment risk of the entity.

Appendix A-5.2 (Gannett)

We believe that similar economic, industry and business risks have affected the Comparable Group as those faced by the Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike. On average, the utilities in the Comparable Group are larger than the Wastewater System. The relative size difference between the Comparable Group and Wastewater System suggests that the risk to investors of the Wastewater System is higher than the Comparable Group. Further, based upon our quantitative and qualitative analysis, we concluded that the Wastewater System has more risk than the Comparable Group.

Accordingly, the Comparable Group's Market Multiples are not directly applicable to the Wastewater System. We assumed the higher risk due to the Wastewater System's size is added to the higher risk found in our quantitative and qualitative analysis. This combined risk was assumed to result in the Wastewater System being 20% more risky than the Comparable Group and produces an 80% (100% - 20%) base risk adjustment to the Comparable Group's Market Multiples. We applied the 80% base risk adjustment to all financial multiples. For example, the Comparable Group's ICAP multiple was multiplied by 80% to produce a lower multiple applicable to the Wastewater System to account for risk differences.

The Comparable Group's Market Multiples of Revenue, EBITDA, and EBIT were adjusted for the base risk adjustment to produce multiples applicable to the Wastewater System (Exhibit 18, page 3). The Comparable Group's Market Multiples of GPPE and NPPE were adjusted for the base risk adjustment and for their percentage of property plant and equipment (Exhibit 18, page 3) financed with "cost free" capital such as contributions because "cost free" capital should not be part of this valuation process. The Comparable Group's Market Multiples of Customers and

Population were adjusted for the type of assets of the Wastewater System, earnings rate, and growth.

The net risk adjustments to the Comparable Group's Market Multiples are shown on page 1 of Exhibit 18. The adjustments to the Comparable Group's Market Multiples are: 80% of ICAP (more risk/less growth); 92% of GPPE (more risk/lower growth and contributions); 92% of NPPE (more risk/lower growth and contributions); 80% of Revenue (more risk/lower growth); 80% of EBIT; 80% EBITDA (more risk/lower growth); 94% of Customers (growth, earning rate, and contributions); and 94% Population (growth, earning rate, and contributions).

Page 1 of Exhibit 18 shows the market multiples method indicated values based on: Revenue, EBIT and EBITDA (collectivity called "Income Statement Items"); ICAP, GPPE and NPPE (collectivity called "Capital Items"); and Customers and Population (collectivity called "Demographics Items"). For most municipal utilities, the indicated values based on Income Statement Items are far below the indicated values that are based on Capital Items and those based on Demographics Items. We attribute this to the dollars of Revenue, EBIT and EBITDA do not reflect any provision for taxes while the multiples for the Comparable Group do.²¹ Consequently, we do not believe the results of the multiples of Revenue, EBIT and EBITDA are meaningful and should not be used for municipal utilities.

In the market multiples method, the meaningful Market Multiples of the Comparable Group are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the Comparable Group's median Market Multiples (Exhibit 18, page 1). The results of the market multiples method

²¹ The Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

(Exhibit 18, page 1) show a range of value for the Wastewater System of \$12.1 million to \$35.1 million and collectively, indicate value of \$23.6 million (\$23,608,075 rounded).

The Selected Transactions Method. The selected transactions method entails analyzing certain public information relating to selected transactions involving the purchase or sales of businesses involved in the same or similar business line. The number of selected transactions available for review is limited because most acquisitions in the water and wastewater industry involve small acquisitions for which no public information exists. Additionally, not all transactions are comparable since some purchase prices may only involve the acquisition of the common stock, purchase prices may be net of cash and others may only involve assets. In any of these instances, the derived multiples (e.g., purchase price as a multiple of: Revenues; EBITDA; EBIT; etc.) would understate (overstate) the multiples involving a purchase price for an entire business enterprise (common stock) or business assets.

The selected transactions method provides a valuation of a business, or assets, at the time the acquisition of that business was completed, rather than the appraisal date market value (January 13, 2023). The change in the Comparable Group's market multiples of NPPE and ICAP, shown in Figure 1, illustrates the change in market valuation over a recent 72-month period.²² In Figure 1, the Comparable Group's market multiples of NPPE and ICAP were indexed to January 13, 2023 valuation multiples so that the January 13, 2023 valuation multiples have an index value of 100.

²² Note that Figure 1 only depicts change in market valuations based on NPPE and ICAP. Other metrics (e.g., EBIT, Customers, etc.) may reveal different changes in market valuations.

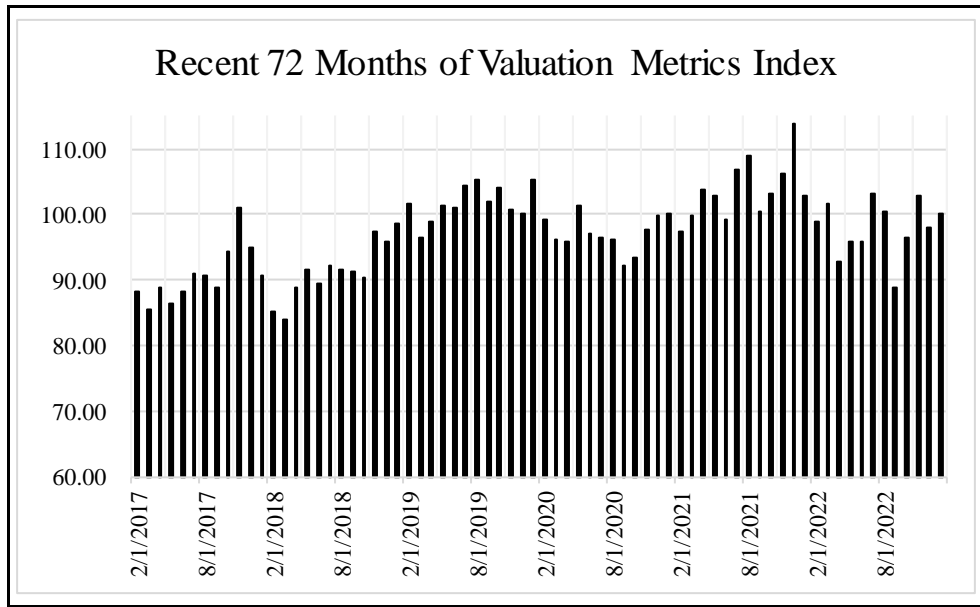


Figure 1

The index of the Comparable Group’s appraisal date (January 13, 2023) valuation multiples is 11% above 2022’s lowest levels and 3% below 2022’s highest levels and 11% above 2021’s lowest levels and 14% below 2021’s highest levels. The index of the Comparable Group’s January 13, 2023 valuation multiples is 11% above 2020’s lowest levels and 5% below 2020’s highest levels, is 11% above 2019’s lowest levels and 5% below 2019’s highest levels, is 16% above 2018’s lowest levels and 3% above 2018’s highest levels, and is 16% above 2017’s lowest levels and 1% below 2017’s highest multiples’ index levels.

Because of the rapid rise in valuation multiples since early 2016 we limited our search for selected transactions to: (1) those that occurred in 2016 or later; (2) purchases of water or sewer systems; (3) assets being purchased; and (4) those that did not discount “cost free” capital/customer contributions in the valuation. The selected transactions that met the stated selection criteria are shown on pages 2 and 3 of Exhibit 19.

Appendix A-5.2 (Gannett)

Using certain public information, we calculated sales price multiples of selected transactions involving the purchase or sale of businesses that met the stated selection criteria. The calculated sales price multiples included transactions multiples of: ICAP; GPPE; NPPE; Revenue; EBITDA; EBIT; Customers; and Population. As shown on pages 2 and 3 of Exhibit 19, the selected transactions method indicated values based on the Income Statement Items are far different than the Wastewater System's selected transactions method indicated values based on Capital Items and those based on Demographics Items. We attribute this to the fact the selling utilities' dollars of Income Statement Items do not reflect any provision for taxes. Consequently, we do not believe the results of the multiples of Income Statement Items are meaningful.

The selected transaction method relies on and reflects information that was known, ex-ante, at the time the winning purchase bid (price) was offered, and the metrics used are time period sensitive. For example, bids made in 2016 only reflects metrics from 2015 since the results of 2016 could not be known at the time of the bids. The selected transaction method ex-ante information (metrics) is shown on page 2 of Exhibit 19. Complete information only exists for a few of the transactions, with only Customers and Population having ample data for all transactions as is evident from the information shown (Exhibit 19, page 2). Therefore, we supplemented the ex-ante data with ex-post information of GPPE and NPPE (collectivity called "Asset Items") as shown on page 3 of Exhibit 19.

In the selected transactions method, the significant selected transactions multiples of the selling utilities are used to develop an indicated value of the Wastewater System. This process is accomplished by multiplying the Wastewater System's financial and operating data by the selling utilities' transactions multiples (Exhibit 19, pages 2 and 3).

Appendix A-5.2 (Gannett)

The results of the selected transactions method (Exhibit 19, page 1) show a range of value for the Wastewater System of \$14.4 million to \$30.7 million when all transactions are considered and a range of value of \$13.4 million to \$23.9 million when mostly collection/distribution assets are solely considered. We determined an indicated value of \$18.6 million for the Wastewater System using the selected transactions method by considering the results of all transactions, \$22.6 million, and the results of the mostly collection/distribution assets of \$18.6 million (Exhibit 19, page 1).

Wall Street Transactions. In 2018 two IOUs, Connecticut Water Service, Inc. (“Connecticut Water”) and SJW Group, announced a planned merger with Connecticut Water being acquired by SJW through a stock purchase (stock swap). SJW Group’s purchase of Connecticut Water was approved in late 2019. Similarly, in 2021, two IOUs were involved in another transaction which involved Aquarion Company, parent of Aquarion Water Company, completing its acquisition of the New England Service Company, Inc. (“NESC”) through a stock purchase (stock swap).²³ Again in 2022, two IOUs were involved in another transaction which involved Aquarion Company, parent of Aquarion Water Company, announcing its acquisition of The Torrington Water Company, Inc. (“TORW”) through a stock purchase (stock swap). Connecticut Water, NESC and TORW were publicly traded as was the stock they received in the transactions.

Although these acquisitions are not directly applicable to the Wastewater System, they do provide a range of indicated value for the Wastewater System (Exhibit 20, page 1) which we relied on as checks. In these selected transactions, the significant selected transactions multiples of the

²³ NESC was the sole stockholder of four regulated water companies operating in three separate states.

selling utilities, Connecticut Water, NESC, and TORW are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the selling utilities' transactions multiples. The results of the Connecticut Water selected transactions (Exhibit 20, page 2) show a range of value for the Wastewater System of \$19.9 million when the reported significant selected transactions multiples are considered and a value of \$28.9 million when the reported significant selected transactions multiples have been adjusted for "cost free" capital. The results of the NESC selected transactions (Exhibit 20, page 3) show a range of value for the Wastewater System of \$14.4 million when the reported significant selected transactions multiples are considered and a value of \$24.1 million when the reported significant selected transactions multiples have been adjusted for "cost free" capital. The TORW selected transactions (Exhibit 20, page 4) show a range of value for the Wastewater System of \$23.0 million when the reported significant selected transactions multiples are considered and a value of \$38.5 million when the reported significant selected transactions multiples have been adjusted for "cost free" capital.

Collectively, the Wall Street selected transactions indicate values of \$24.1 million to \$38.5 million, are similar to the values found by the market multiples method of \$23.6 million and the selected transaction method of \$18.6 million.²⁴

The Market Approach is summarized on Exhibit 21. The results of the market multiples method (Exhibit 18) indicate value of \$23.6 million. The results of the selected transactions method (Exhibit 19) indicate value of \$18.6 million. Based on the aforesaid results, the Market

²⁴ We note Connecticut Water, NECS and TORW were fully integrated companies, as is Wastewater System. Additionally, they were publicly traded, which the Wastewater System is not, and therefore, may overstate the value for the Wastewater System. However, these transactions were stock transactions, which may understate the value for the Wastewater System's asset purchase.

Approach to valuation indicates a value of \$21.1 million (\$21,128,331 rounded) for the Wastewater System based on the results of the market multiples method and the selected transactions method (Exhibit 21).

Conclusion. We summarize our findings for the Wastewater System on Exhibit 22. Our finding for the Wastewater System is based on the Cost, Market, and Income Approaches to valuation. We used seven methods under the Cost, Market, and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach.

We considered the results of each approach as an indicator of value individually, or as independent indicators of value. Therefore, all three approaches to valuation were given consideration in arriving at our estimate of the fair market value conclusion. Based on these facts, our conclusion regarding the fair market value is \$20.9 million. Our conclusion regarding the fair market value can be described by the weights and the specific results of the three approaches to valuation that are shown on Exhibit 22. The results of our analyses, shown on Exhibit 22, indicate a range of value for the Wastewater System of \$19.9 million to \$21.8 million and collectively indicate a fair market value of \$20,934,000 for the Wastewater System.

APPENDIX A - QUALIFICATIONS

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation “Certified Rate of Return Analyst” (CRRRA) by the Society of Utility and Regulatory Financial Analysts. This designation is based upon education, experience, and the successful completion of a comprehensive examination. He is also a member of the Society of Utility and Regulatory Financial Analysts (SURFA) and has attended numerous financial forums sponsored by the Society. The SURFA forums are recognized by the Association for Investment Management and Research (AIMR) and the National Association of State Boards of Accountancy for continuing education credits.

Mr. Walker obtained a license as a Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for more than 25 years, he has continuously studied rates of return requirements for regulated firms. In this regard, he supervised the preparation of rate of return studies in connection with his testimony and in the past, for other individuals. He also assisted and/or developed dividend policy studies, nuclear prudence studies, calculated fixed charge rates for avoided costs involving cogeneration projects, financial decision studies for capital budgeting purposes and developed financial models for determining future capital requirements and the effect of those requirements on investors and ratepayers, valued utility property and common stock for acquisition and divestiture, and assisted in the private placement of fixed capital securities for public utilities.

Head, Gannett Fleming GASB 34 Task Force responsible for developing Governmental Accounting Standards Board (GASB) 34 services and educating Gannett Fleming personnel and

Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

While employed at AUS Consultants - Utility Services, he became a contributing author for the Fortnightly, a utility trade journal (1993 to 1994). His column was the Financial News column and focused mainly on the natural gas industry.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 26 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, Idaho, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: fair market value, the taking of natural resources, appropriate capital structure and fixed capital cost rates, depreciation, fair rate of return, purchased water adjustments, synchronization of interest charges for income tax purposes, valuation, cash working capital, lead-lag studies, financial analyses of investment alternatives, benchmarking, and fair value.

PROFESSIONAL AFFILIATIONS

Society of Utility and Regulatory Financial Analysts

Board of Directors, 1996-2000, 2005-2008

President, 2000-2002

Treasurer, 1996-1998

National Association of Water Companies

Pennsylvania Municipal Authorities Association
Electric Deregulation Committee

TECHNICAL PUBLICATIONS & PRESENTATIONS

Walker, Harold. Panelist “Now is the Time to Maximize Your Utility’s Value.” Presented at the Pennsylvania Association of Township Supervisors 97th Annual State Convention, April 2019.

Walker, Harold. Panelist “Fair Market Acquisitions Debate.” Presented at National Association of Regulatory Utilities Commissioners Winter Policy Summit, February 2019.

Walker, Harold. Panelist “Fair Market Value Legislation.” Presented at the National Association of Water Companies Water Summit, October 2018.

Walker, Harold. Panelist “Leveraging Water & Sewer to Address Roads, Schools, and Pension Obligations.” Presented at the Maryland Association of Counties 2018 Summer Conference, August 2018.

Walker, Harold. Panelist “Is the Glass Half Full or Half Empty? Valuing Municipal Water Acquisitions.” Presented at the Mid-Atlantic Conference of Regulatory Utilities Commissioners 23rd Annual Education Conference, June 2018.

Walker, Harold. “Valuation and Inventory of Governmental Assets Under GASB 34.” Presented at the Society of Depreciation Professionals 21st Annual Conference, September 2007.

Walker, Harold. “The Paradox of State Regulatory Opinions and Investor Behavior.” Presented at the National Association of Water Companies New England Chapter conference, November 2006.

Walker, Harold. “Valuation and Inventory Under GASB 34.” Presented at the Government Finance Officers Association South Central Pennsylvania Regional Chapter conference, August 2003.

Walker, Harold. “Valuation and Inventory under GASB 34.” Presented at the Government Finance Officers Association Southeastern Pennsylvania Regional Chapter conference, April 2002.

Walker, Harold. “GASB 34 & Your Infrastructure.” *The Authority*, August 2001, Volume XXXII, No. 4, pages 10-13.

Walker, Harold. “Managing Risk.” Conference Chairperson, presented at the Society of Utility & Regulatory Financial Analysts 33rd Financial Forum, April 2001.

Walker, Harold. “Paying for Your MSW System - Waste Generation Fees.” Presented at the Federation of New York Solid Waste Association Solid Waste/Recycling Conference and Trade Show, May 2001.

Walker, Harold. “Statement No. 34 of the Government Accounting Standards Board.” Presented at the Pennsylvania Association of Township Supervisors 79th Annual State Convention, April 2001.

Walker, Harold. “Cost of Capital Issues.” Presented at the National Association of Water Companies New England Chapter conference, October 2000.

Walker, Harold, Timothy Hartman, and Mark Everett. “Waste Generation Study: Life After Flow Control.” Presented at Waste Con 2000, October 1999.

Walker, Harold, and Timothy Hartman. “The Enhancement of Revenues Through a Waste Generation Study.” Presented at SWANA’s Planning and Management Symposium, July 1999.

COMPLIANCE & APPRAISAL CERTIFICATION

Appendix A-5.2 (Gannett)
Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State the identity of the client and any intended users, by name or type:**

The client is Borough of Brentwood. The intended users of the valuation are the Borough of Brentwood, Pennsylvania American Water Company, Inc., and the Pennsylvania Public Utility Commission.

- **State the intended use of the appraisal**

The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches.

- **Describe information sufficient to identify the property, real, personal, and intangible, involved in the appraisal, including the physical and economic property characteristics relevant to the assignment.**

The Brentwood Borough is in Allegheny County in southwestern Pennsylvania. Brentwood Borough has three borders, including Baldwin Borough to the east and northeast, Whitehall Borough to the south and west, and the Pittsburgh neighborhood of Carrick to the northwest. Brentwood Borough owns and operates the Wastewater System which provides service to 3,980 customers within a population of 9,971 people. The Wastewater System which consists of System which consists of about 199,934 linear feet of gravity mains, approximately 1,055 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows are treated at the Allegheny County Sanitary Authority ("ALCOSAN") sewage treatment facility in Pittsburgh, Pennsylvania.

As a result of the Wastewater System contracts with ALCOSAN for wastewater treatment services, the Wastewater System is bound by the terms of a federal consent order to reduce intrusion and infiltration into the sanitary sewer system. The Wastewater System is aggressively working to improve the quality of this infrastructure now to lessen the financial burden of upgrades in future years. The Wastewater System utilizes traditional excavation and replacement methods, as well as trenchless lining and bursting techniques, to eliminate structural defects within these pipes. The Wastewater System also uses CCTV to document the conditions of municipal sewers and to plan for future repairs. Since 2014, CCTV inspections of 270,443 linear feet of mains has been completed including 177,922 linear feet over the past five years. Additionally, the Wastewater System continues

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Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

to budget for important but often overlooked maintenance items, such as the cleaning and inspection of maintenance of manholes and lamp holes.

The Wastewater System's 199,934 linear feet of gravity sewer collection mains consist of 6-inch, 8-inch, 10-inch, 12-inch, 15-inch, and 18-inch diameter pipe which was installed between 1919 to 2014. About 75% of the gravity mains were installed between 1927 and 1938. The mains consist of vitrified clay (VCP), polyvinyl chloride (PVC), ductile iron (DIP), and cast iron (CIP) pipe. The Wastewater System lined approximately 20% (39,269 linear feet) of gravity mains between 2005 and 2021. There are 1,055 manholes and 4,036 service laterals in the system.

The property is an operating wastewater utility, the economics of which were analyzed from audited and budgeted financial statements which were incorporated into the income approach to value in this appraisal.

The Wastewater System's land and land rights include land used for the operation of their system, associated infrastructure and appurtenances, and multiple easements and rights-of-way necessary to operate the Wastewater System.

- **State the real property interests appraised**

The Wastewater System's land and land rights agreements necessary to access its property.

- **State the type and definition of value and cite the source of the definition, including whether the opinion of value is in terms of cash or of financing terms equivalent to cash, or based on non-market financing or financing with unusual conditions or incentives**

Fair market value is defined 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 arm's 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.” The International Glossary of Business Valuation Standards

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Appendix A-5.2 (Gannett)
Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State the effective date of the appraisal and the date of the report**

The effective date of the appraisal is as of January 13, 2023, and the appraisal report date is March 1, 2023.

- **Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal**

Gannett Fleming Valuation and Rate Consultants, LLC was retained by the Borough of Brentwood (“Borough”) to estimate the fair market value of the Borough of Brentwood’s wastewater system assets (“Wastewater System”) as of January 13, 2023.

The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market, and income approaches.

As stated, the standard of value for this engagement is fair market value. The premise of value is the going concern. The going concern premise of business value assumes that the business will continue running normally using all its assets to produce income and will continue operating beyond the valuation date.

We valued the Wastewater System’s assets as a group under the premise that the assets collectively comprise an ongoing operating business enterprise. Additionally, in accordance with 66 Pa. C.S. Section 1329, the original source of funding for any part of the Wastewater System’s assets was not relevant to the determination of the value of said assets.

We accepted all information and data provided by the Borough of Brentwood as it pertains to this assignment “as is” after a limited review. That is, we neither audited nor verified any data, engineering assessment, financial record or operating data provided for this assignment. We assumed all title to all assets included in the appraisal is good and marketable, no hidden defects in the property or soil and no hazardous conditions or materials exist which could affect the assets. We are not an environmental consultant or auditor, and we take no responsibility for any actual or potential environmental liabilities.

*- On August 11, 2022, the Appraisal Foundation’s Appraisal Standards Board (ASB) announced that the current edition of the Uniform Standards of Professional Appraisal Practice (USPAP) would be extended by another year. The 2020-2021 USPAP will now be effective until December 31, 2023.

Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

The appraisal considered all three approaches to value: the cost, income, and market. Briefly the scopes of work for each are as follows:

The cost approach utilized the original cost method and replacement cost method. The reproduction cost method was calculated by trending (trended cost method) the asset inventory developed by The Gateway Engineers, Inc. from its original cost new inventory.

The original cost method determined the original cost new measure of the cost of the assets when first constructed. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new and converted to replacement cost new after obsolescence was factored. The calculated accrued depreciation was determined for the original cost new and for the replacement cost new. The calculated accrued depreciation was based on the assets' attained ages, and the service life of the assets. The cost basis of depreciable assets was reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed. All land and land rights were valued at original cost.

Income Approach - The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of earning method converted a single base economic income number to a value by dividing it by a capitalization rate. The discounted cash flow method used estimates of future debt free net cash flow and discounted them to arrive at a present value or price of the cash flows. The capitalization rate and the discount rate were developed based on market debt and equity rates at the appraisal date. The discounted cash flow method reflected two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model and a capitalization of terminal value model.

Market Approach - The market approach was developed based on the market multiples method and the selected transaction method. The market multiples method was based on the market price data of publicly traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publicly traded corporations was used to calculate the market multiples for the comparable publicly traded corporations at the appraisal date. The selected transactions method used certain public information relating to the purchase or sales of businesses involved in the same or a similar business line as the Wastewater System to calculate market multiples at the time of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied

* - On August 11, 2022, the Appraisal Foundation's Appraisal Standards Board (ASB) announced that the current edition of the Uniform Standards of Professional Appraisal Practice (USPAP) would be extended by another year. The 2020-2021 USPAP will now be effective until December 31, 2023.

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

by the corresponding the Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

Reconciliation of the Valuation Approaches - The fair market value conclusion was based on reconciliation of each of the three approaches to value and the intended purpose of the appraisal.

- **Clearly and conspicuously:**

- **State all extraordinary assumptions and hypothetical conditions;**

There were no extraordinary assumptions required or hypothetical conditions in this appraisal.

- **State that their use might have affected the assignment results**

Not applicable.

- **Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment**

Not applicable.

- **Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions**

See scope of work above.

- **State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal**

Brentwood Borough's Wastewater System land and land rights include land used for wastewater collection and transmission, about 38 miles of mains, and multiple easements and rights-of-way necessary to operate the Wastewater System.

The Brentwood Borough Wastewater System's land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal.

*- On August 11, 2022, the Appraisal Foundation's Appraisal Standards Board (ASB) announced that the current edition of the Uniform Standards of Professional Appraisal Practice (USPAP) would be extended by another year. The 2020-2021 USPAP will now be effective until December 31, 2023.

Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021*

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State and describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate**

All land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal, were valued at original cost, and not at highest and best use of the real estate.

- **State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal - a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken**

No departures for Standard 1 were made.

- **Include a signed certification in accordance with Standards Rule 2-3**

See attached for signed certification.

*- On August 11, 2022, the Appraisal Foundation's Appraisal Standards Board (ASB) announced that the current edition of the Uniform Standards of Professional Appraisal Practice (USPAP) would be extended by another year. The 2020-2021 USPAP will now be effective until December 31, 2023.

APPRAISAL CERTIFICATION

Brentwood, Pennsylvania

Borough of Brentwood

Wastewater System Assets

Fair Market Value Appraisal Report

As of January 13, 2023

Gannett Fleming Valuation and Rate Consultants, LLC certify that, to the best of its knowledge and belief:

- The statements of fact contained in this report are true and correct.

- 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.

- Gannett Fleming Valuation and Rate Consultants, LLC was previously retained by the Borough of Brentwood (client) to estimate the fair market value of the Wastewater System as of April 13, 2021. Accordingly, this March 1, 2023 appraisal is an update of the April 13, 2021 appraisal previously conducted. Gannett Fleming did not perform an appraisal of the Wastewater System prior to the April 13, 2021 appraisal.

- Gannett Fleming Valuation and Rate Consultants, LLC, nor its professional staff has any present or prospective interest in the property that is the subject of this report and has no interest or bias with respect to the parties involved.

- We have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.

- Our engagement in this assignment is not contingent upon developing or reporting predetermined results.

- Our 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 appraisal.

APPRAISAL CERTIFICATION

Brentwood, Pennsylvania

Borough of Brentwood

Wastewater System Assets

Fair Market Value Appraisal Report

As of January 13, 2023

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice (2020-2021)

- The signers of this report relied on Noah Harvey, Associate Designer, Water, at Gannett Fleming, Inc., who viewed or observed the property that is the subject of this report.

- Individuals providing significant appraisal assistance to the person signing this certification include John J. Spanos, President, Joanna Lappin, Depreciation Analyst and Gregory R. Herbert, Rate Analyst at Rate Studies at Gannett Fleming Valuation and Rate Consultants, LLC.

Gannett Fleming Valuation and Rate Consultants, LLC

By,



HAROLD WALKER, III

Manager, Financial Studies

EXHIBITS

Brentwood Borough Wastewater System Assets
Selected Audited Financial Information

	12-Months Ended December 31:			
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Gross property, plant & equipment	NA	NA	NA	NA
Accumulated depreciation	NA	NA	NA	NA
Net property, plant & equipment	NA	NA	NA	NA
Assets	4,526,896	4,698,054	4,807,906	4,807,906
Debt Current	21,914	22,573	23,254	23,767
Debt	93,358	70,785	47,531	23,764
Equity	3,396,203	4,109,824	4,127,087	4,142,161
Total Capital	NA	NA	NA	NA
OPERATING REVENUES				
Charges for services	3,818,653	3,777,696	3,885,852	4,132,883
Other operating income	63,664	5,112	149,145	323,944
TOTAL OPERATING REVENUES	3,882,317	3,782,808	4,034,997	4,456,827
OPERATING EXPENSES				
Expenses	2,498,401	2,452,191	2,690,695	3,562,957
Depreciation	0	0	0	0
TOTAL OPERATING EXPENSES	2,498,401	2,452,191	2,690,695	3,562,957
CAPX	572,000	579,500	260,806	352,500
Interest	4,552	3,222	2,563	1,882
Principal	114,048	21,914	22,573	23,254
Transfer (net of CAPX fund)	595,000	526,140	590,000	457,500

Source of Information: Audited Financial Statements (2018-2021) and 2022 Budget

Brentwood Borough Wastewater System Assets
Population, Housing Units and
Customer Count

	<u>Borough</u>	<u>Population To Customers</u>
Population	9,971	
Occupied Housing Units	<u>4,452</u>	
Average Size	<u>2.24</u>	<u>2.5</u>

<u>Customers</u>	<u>Current</u>
Residential & Commercial	<u>3,980</u>
Total	<u><u>3,980</u></u>

Population and Housing Units (2022)

	Total Population	Population in Households	Occupied Housing Units	Persons Per Housing Unit	Estimated Population Served
Brentwood Borough	9,971	9,922	4,452	2.24	9,971

State	Population		Percentage
	2010	2020	Change
Alabama	4,779,736	5,024,279	5.1%
Alaska	710,231	733,391	3.3%
Arizona	6,392,017	7,151,502	11.9%
Arkansas	2,915,918	3,011,524	3.3%
California	37,253,956	39,538,223	6.1%
Colorado	5,029,196	5,773,714	14.8%
Connecticut	3,574,097	3,605,944	0.9%
Delaware	897,934	989,948	10.2%
District of Columbia	601,723	689,545	14.6%
Florida	18,801,310	21,538,187	14.6%
Georgia	9,687,653	10,711,908	10.6%
Hawaii	1,360,301	1,455,271	7.0%
Idaho	1,567,582	1,839,106	17.3%
Illinois	12,830,632	12,812,508	-0.1%
Indiana	6,483,802	6,785,528	4.7%
Iowa	3,046,355	3,190,369	4.7%
Kansas	2,853,118	2,937,880	3.0%
Kentucky	4,339,367	4,505,836	3.8%
Louisiana	4,533,372	4,657,757	2.7%
Maine	1,328,361	1,362,359	2.6%
Maryland	5,773,552	6,177,224	7.0%
Massachusetts	6,547,629	7,029,917	7.4%
Michigan	9,883,640	10,077,331	2.0%
Minnesota	5,303,925	5,706,494	7.6%
Mississippi	2,967,297	2,961,279	-0.2%
Missouri	5,988,927	6,154,913	2.8%
Montana	989,415	1,084,225	9.6%
Nebraska	1,826,341	1,961,504	7.4%
Nevada	2,700,551	3,104,614	15.0%
New Hampshire	1,316,470	1,377,529	4.6%
New Jersey	8,791,894	9,288,994	5.7%
New Mexico	2,059,179	2,117,522	2.8%
New York	19,378,102	20,201,249	4.2%
North Carolina	9,535,483	10,439,388	9.5%
North Dakota	672,591	779,094	15.8%
Ohio	11,536,504	11,799,448	2.3%
Oklahoma	3,751,351	3,959,353	5.5%
Oregon	3,831,074	4,237,256	10.6%
Pennsylvania	12,702,379	13,002,700	2.4%
Rhode Island	1,052,567	1,097,379	4.3%
South Carolina	4,625,364	5,118,425	10.7%
South Dakota	814,180	886,667	8.9%
Tennessee	6,346,105	6,910,840	8.9%
Texas	25,145,561	29,145,505	15.9%
Utah	2,763,885	3,271,616	18.4%
Vermont	625,741	643,077	2.8%
Virginia	8,001,024	8,631,393	7.9%
Washington	6,724,540	7,705,281	14.6%
West Virginia	1,852,994	1,793,716	-3.2%
Wisconsin	5,686,986	5,893,718	3.6%
Wyoming	563,626	576,851	2.3%
Total - States & D.C.	308,745,538	331,449,281	7.4%

Source: STATS Indiana, using U.S. Census Bureau data

Geographic Area	Population		Percentage	Municipal Growth Rank
	2010	2020	Change	
Pennsylvania	12,702,379	13,002,700	2.4%	-
Allegheny County	1,223,348	1,250,578	2.2%	-
Brentwood Borough	9,643	10,082	4.6%	485 out of 2,572

Source: U.S. Census Bureau, Census 2020 Redistricting Data (Public Law 94-171) Summary File.

TABLE 3.3 Forecasted Population by County and Municipality, 2020-2045

	Population						Percentage Change					
	Estimate 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2020 to 2045
Pittsburgh, City of	304,900	311,659	321,969	333,067	344,473	357,154	2.2%	3.3%	3.4%	3.4%	3.4%	17.1%
Allegheny (Excl. Pittsburgh)	924,120	938,526	963,797	989,969	1,015,104	1,043,734	1.6%	2.7%	2.7%	2.5%	2.5%	12.9%
Armstrong	64,822	63,052	62,573	63,017	63,683	64,156	-2.7%	-0.8%	0.7%	1.1%	1.1%	-1.0%
Beaver	165,356	165,660	169,639	174,012	177,584	180,383	0.2%	2.4%	2.6%	2.1%	2.1%	9.1%
Butler	189,577	193,864	201,009	209,286	216,520	222,117	2.3%	3.7%	4.1%	3.5%	3.5%	17.2%
Fayette	129,158	126,620	126,610	127,595	128,255	128,468	-2.0%	0.0%	0.8%	0.5%	0.5%	-0.5%
Greene	37,184	36,790	36,981	37,450	37,912	38,341	-1.1%	0.5%	1.3%	1.2%	1.2%	3.1%
Indiana	87,307	88,299	90,698	93,276	95,010	95,804	1.1%	2.7%	2.8%	1.9%	1.9%	9.7%
Lawrence	85,935	84,432	85,425	87,531	89,361	90,583	-1.7%	1.2%	2.5%	2.1%	2.1%	5.4%
Washington	209,558	213,562	220,429	228,261	235,444	241,574	1.9%	3.2%	3.6%	3.1%	3.1%	15.3%
Westmoreland	355,285	357,066	366,299	377,950	387,880	394,643	0.5%	2.6%	3.2%	2.6%	2.6%	11.1%
Total - SPC Region	2,553,202	2,579,530	2,645,429	2,721,414	2,791,226	2,856,957	1.0%	2.6%	2.9%	2.6%	2.6%	11.9%

Brentwood Borough	9,350	9,356	9,500	9,667	9,904	10,214	0.1%	1.5%	1.8%	2.5%	2.5%	9.2%
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Source: Southwestern Pennsylvania Commission, June 2019.

TABLE 3.4 Forecasted Employment by County and Municipality, 2020-2045

	Employment						Percentage Change					
	Estimate 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2035 to 2040	2020 to 2045
Pittsburgh, City of	32,014	31,555	31,463	32,272	33,601	35,092	-1.4%	-0.3%	2.6%	4.1%	4.1%	9.6%
Allegheny (Excl. Pittsburgh)	110,038	107,804	106,063	107,535	110,874	114,757	-2.0%	-1.6%	1.4%	3.1%	3.1%	4.3%
Armstrong	4,160	4,016	3,916	3,920	3,963	3,993	-3.5%	-2.5%	0.1%	1.1%	1.1%	-4.0%
Beaver	13,247	12,932	12,750	12,821	12,989	13,147	-2.4%	-1.4%	0.6%	1.3%	1.3%	-0.8%
Butler	21,551	21,255	21,043	21,405	21,957	22,436	-1.4%	-1.0%	1.7%	2.6%	2.6%	4.1%
Fayette	10,604	10,262	10,026	10,042	10,138	10,177	-3.2%	-2.3%	0.2%	1.0%	1.0%	-4.0%
Greene	2,568	2,475	2,411	2,420	2,460	2,491	-3.6%	-2.6%	0.4%	1.7%	1.7%	-3.0%
Indiana	7,947	7,810	7,726	7,848	8,009	8,125	-1.7%	-1.1%	1.6%	2.1%	2.1%	2.2%
Lawrence	6,751	6,556	6,446	6,496	6,599	6,669	-2.9%	-1.7%	0.8%	1.6%	1.6%	-1.2%
Washington	19,660	19,321	19,089	19,440	20,066	20,650	-1.7%	-1.2%	1.8%	3.2%	3.2%	5.0%
Westmoreland	37,420	36,547	36,028	36,450	37,175	37,705	-2.3%	-1.4%	1.2%	2.0%	2.0%	0.8%
Total - SPC Region	265,960	260,533	256,961	260,649	267,831	275,242	-2.0%	-1.4%	1.4%	2.8%	2.8%	3.5%
Brentwood Borough	791	768	754	768	801	843	-2.9%	-1.8%	1.9%	4.3%	4.3%	6.6%

Source: Southwestern Pennsylvania Commission, June 2019.

Comparison of Credit Market Financial Risk Metrics
For Brentwood Borough Wastewater System Assets
And the Comparable Group
2019 - 2021 (1)

	Brentwood Borough Wastewater System Assets			Comparable Group		
	2021	2020	2019	2021	2020	2019
Debt Service Coverage	17.4	30.0	32.0	2.3	2.4	2.0
Pre-Tax Interest Coverage - Including AFC(2)(x)	231.9	294.3	249.7	4.4	3.7	3.6
Post-Tax Interest Coverage - Including AFC(2)(x)	231.9	294.3	249.7	3.7	3.2	2.9
GCF / Interest Coverage(3)(x)	231.9	294.3	249.7	5.9	5.2	4.7
GCF / Tot. Debt(4)(%)	914.1	1,062.0	858.3	18.2	15.9	15.8
GCF / Construction(5)(%)	0.0	288.2	138.3	73.2	72.2	63.0

- Notes: (1) Average of the achieved results for each individual company based upon the financials as originally reported.
- (2) Represents the number of times available earnings, including AFC, cover all interest charges.
- (3) GCF or gross cash flow (sum of net income, depreciation, amortization, net deferred income taxes and investment tax credits, less AFC), plus interest charges, divided by interest charges.
- (4) GCF (see note 3) as a percentage of total debt.
- (5) The percent of GCF (see note 3) which cover gross construction expenditures.

Source: 2019-21 Annual Reports
S&P Capital IQ
EXHIBIT 1

Brentwood Borough Wastewater System Assets
 Illustrating the Impact of Size on Risk and Return
 Through Common Stock Returns

TABLE 5.1 Change in Return and Risk for Size-Quartiles Portfolio of the NYSE/AMEX/NASDAQ Common Stocks (1)

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>
	Market	Average	Standard	Change in	Largest	Quartile	Comparison	Beta	Beta Adjusted	
<u>Market</u> <u>Quartile</u>	<u>Quartile</u> <u>Name</u>	<u>Quartile</u> <u>Premium</u> <u>1926-20</u> <u>(%)</u>	<u>Deviation</u> <u>of</u> <u>Return</u> <u>(%)</u>	<u>Quartile</u> <u>Premium</u> <u>(%)</u>	<u>Market Value</u> <u>in the Quartile</u> <u>(Mill \$)</u>	<u>Beta</u>	<u>Group</u> <u>Beta</u>	<u>Ratio</u>	<u>Quartile</u> <u>Size</u> <u>Premium</u> <u>(%)</u>	<u>Change in</u> <u>Quartile</u> <u>Premium</u> <u>(%)</u>
(Largest Stocks)										
1	Large-Cap	0.00	19.9	--	1,966,079	1.00	0.75	75%	0.00	
2	Mid-Cap	2.48	24.3	2.48	13,179	1.13	0.75	66%	1.65	1.65
3	Low-Cap	3.95	28.5	1.47	2,446	1.23	0.75	61%	2.41	0.76
4	Mico-Cap	6.21	38.5	2.26	452	1.35	0.75	56%	3.45	1.04
(Smallest Stocks)										

Notes: (1) 2020 Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook

TABLE 5.2 Recent Market Values and Ibbotson Associates Market Quartiles for the Comparable Group

	1/13/2023	Market	
	Market	Quartile	Market
	<u>Value</u>	<u>Name</u>	<u>Quartile</u>
	(Mill \$)		
<u>Comparable Group</u>			
American States Water Co	3,529	Mid-Cap	2
American Water Works Co Inc	28,887	Large-Cap	1
Artesian Resources -Cl A	567	Low-Cap	3
California Water Service Gp	3,420	Mid-Cap	2
Essential Utilities, Inc.	12,797	Mid-Cap	2
Middlesex Water Co	1,443	Low-Cap	3
SJW Corp	2,431	Low-Cap	3
York Water Co	649	Low-Cap	3
Median	2,926	Mid-Cap	2

Brentwood Borough Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.1 Property Plant & Equipment Analysis

(Current Know Statistics)			
Gross Property, Plant & Equipment	Net Property, Plant & Equipment	Percentage of Property, Plant & Equipment Not Depreciated	
(Millions of \$)			
Brentwood Borough Wastewater System Assets *	\$9.942	\$6.925	<u>70%</u>
<u>Comparable Group</u>			
American States Water Co	\$2,262.295	\$1,669.085	74%
American Water Works Co Inc	27,872.000	21,489.000	77%
Artesian Resources -CL A	792.379	622.626	79%
California Water Service Gp	4,261.451	2,887.415	68%
Essential Utilities, Inc.	12,882.910	10,440.989	81%
Middlesex Water Co	1,079.458	873.682	81%
SJW Corp	3,735.674	2,558.665	68%
York Water Co	492.086	390.597	<u>79%</u>
Median			<u>78%</u>

* - Developed on Exhibit 7.

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 9/30/2022)				
Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	2021 Percentage of Known "Cost Free" Capital	
(Millions of \$)				
<u>Comparable Group</u>				
American States Water Co	\$1,669.085	\$1,331.945	80%	22%
American Water Works Co Inc	21,489.000	18,266.000	85%	20%
Artesian Resources -CL A	622.626	353.016	57%	40%
California Water Service Gp	2,887.415	2,280.721	79%	27%
Essential Utilities, Inc.	10,440.989	11,382.495	109%	21%
Middlesex Water Co	873.682	713.094	82%	26%
SJW Corp	2,558.665	2,634.890	103%	26%
York Water Co	390.597	307.419	79%	27%
Median			<u>81%</u>	<u>26%</u>

Brentwood Borough Wastewater System Assets
 Property Plant & Equipment Analysis
 Capital Expenditures Analysis
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TABLE 6.3 Capital Expenditures Analysis

	PP&E-Total Net				Capital Expenditures			
	2021	2020	2019	2018	2021	2020	2019	2018
	(Millions of \$)				(Millions of \$)			
Brentwood Borough Wastewater System Assets	NA	NA	NA	NA	\$0.353	\$0.261	\$0.580	\$0.572
<u>Comparable Group</u>								
American States Water Co	\$1,645.218	\$1,557.936	\$1,458.595	\$1,304.683	\$144.515	\$130.423	\$151.940	\$126.561
American Water Works Co Inc	21,176.000	19,805.000	18,335.000	17,409.000	1,764.000	1,822.000	1,654.000	1,586.000
Artesian Resources -CL A	594.633	563.817	535.013	502.527	40.814	34.277	40.677	49.053
California Water Service Gp	2,849.059	2,654.027	2,409.873	2,220.873	293.194	298.651	273.770	271.707
Essential Utilities, Inc.	10,300.796	9,573.211	6,358.657	5,930.326	1,020.519	835.642	550.273	495.737
Middlesex Water Co	881.299	813.014	722.044	628.476	79.378	105.619	89.125	72.094
SJW Corp	2,518.530	2,356.988	2,230.343	1,365.771	233.933	195.323	164.325	135.973
York Water Co	383.626	344.365	313.993	299.871	46.400	33.299	20.537	16.882
	<u>Capital Expenditures / PP&E-Total Net</u>							
	2021	2020	2019	2018				
Brentwood Borough Wastewater System Assets	NA	NA	NA	NA				
<u>Comparable Group</u>								
American States Water Co	9%	8%	10%	10%				
American Water Works Co Inc	8%	9%	9%	9%				
Artesian Resources -CL A	7%	6%	8%	10%				
California Water Service Gp	10%	11%	11%	12%				
Essential Utilities, Inc.	10%	9%	9%	8%				
Middlesex Water Co	9%	13%	12%	11%				
SJW Corp	9%	8%	7%	10%				
York Water Co	12%	10%	7%	6%				
Median	9%	9%	9%	10%				

Brentwood Borough Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

Revenues				EBITDA			
2021	2020	2019	2018	2021	2020	2019	2018

(Millions of \$)

(Millions of \$)

Brentwood Borough Wastewater
System Assets

\$4.457	\$4.035	\$3.783	\$3.882	\$0.436	\$0.754	\$0.804	\$0.789
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Comparable Group

American States Water Co	\$498.853	\$488.243	\$473.869	\$436.816	\$185.064	\$171.044	\$164.085	\$144.803
American Water Works Co Inc	3,930.000	3,777.000	3,610.000	3,440.000	1,306.476	1,154.957	1,102.741	917.849
Artesian Resources -CL A	90.859	88.141	83.595	80.411	433.284	387.423	380.137	340.460
California Water Service Gp	790.909	794.307	714.557	698.196	30.401	25.800	26.382	25.061
Essential Utilities, Inc.	1,878.144	1,462.698	889.692	838.091	147.867	140.577	127.710	122.709
Middlesex Water Co	143.141	141.592	134.598	138.077	38.056	33.947	35.841	28.720
SJW Corp	573.686	564.526	420.482	397.699	86.302	83.532	68.003	63.335
York Water Co	55.119	53.852	51.578	48.437	25.743	24.780	24.359	21.800

EBIT			
2021	2020	2019	2018

(Millions of \$)

Brentwood Borough Wastewater
System Assets

\$0.436	\$0.754	\$0.804	\$0.789
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Comparable Group

American States Water Co	\$145.090	\$133.840	\$128.372	\$104.140
American Water Works Co Inc	1,274.000	1,297.000	1,230.000	1,159.000
Artesian Resources -CL A	28.031	27.979	25.106	23.946
California Water Service Gp	139.248	143.065	109.924	119.686
Essential Utilities, Inc.	615.095	456.424	357.241	329.531
Middlesex Water Co	35.241	37.699	34.318	37.766
SJW Corp	107.206	117.296	70.089	89.694
York Water Co	22.182	23.069	22.335	21.232

Brentwood Borough Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.4 Growth Rate Analyses

	Revenue Growth			EBITDA Growth		
	2021	2020	2019	2021	2020	2019
Brentwood Borough Wastewater System Assets	10.5%	6.7%	-2.6%	-42.2%	-6.2%	1.9%
<u>Comparable Group</u>						
American States Water Co	2.2%	3.0%	8.5%	8.2%	4.2%	13.3%
American Water Works Co Inc	4.1%	4.6%	4.9%	13.1%	4.7%	20.1%
Artesian Resources -CL A	3.1%	5.4%	4.0%	11.8%	1.9%	11.7%
California Water Service Gp	-0.4%	11.2%	2.3%	17.8%	-2.2%	5.3%
Essential Utilities, Inc.	28.4%	64.4%	6.2%	5.2%	10.1%	4.1%
Middlesex Water Co	1.1%	5.2%	-2.5%	12.1%	-5.3%	24.8%
SJW Corp	1.6%	34.3%	5.7%	3.3%	22.8%	7.4%
York Water Co	2.4%	4.4%	6.5%	3.9%	1.7%	11.7%
Median	2.3%	5.3%	5.3%	10.0%	3.1%	11.7%
	EBIT Growth					
	2021	2020	2019			
Brentwood Borough Wastewater System Assets	-42.2%	-6.2%	1.9%			
<u>Comparable Group</u>						
American States Water Co	8.4%	4.3%	23.3%			
American Water Works Co Inc	-1.8%	5.4%	6.1%			
Artesian Resources -CL A	0.2%	11.4%	4.8%			
California Water Service Gp	-2.7%	30.1%	-8.2%			
Essential Utilities, Inc.	34.8%	27.8%	8.4%			
Middlesex Water Co	-6.5%	9.9%	-9.1%			
SJW Corp	-8.6%	67.4%	-21.9%			
York Water Co	-3.8%	3.3%	5.2%			
Median	-2.3%	10.7%	5.0%			

Brentwood Borough Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.5 Profit Margin Analyses			
	EBITDA / Revenue - Margin		
	2021	2020	2019
Brentwood Borough Wastewater System Assets	9.8%	18.7%	21.3%
Comparable Group			
American States Water Co	37.1%	35.0%	34.6%
American Water Works Co Inc	33.2%	30.6%	30.5%
Artesian Resources -CL A	476.9%	439.5%	454.7%
California Water Service Gp	3.8%	3.2%	3.7%
Essential Utilities, Inc.	7.9%	9.6%	14.4%
Middlesex Water Co	26.6%	24.0%	26.6%
SJW Corp	15.0%	14.8%	16.2%
York Water Co	46.7%	46.0%	47.2%
Median	29.9%	27.3%	28.6%
	EBIT / Revenue - Margin		
	2021	2020	2019
Brentwood Borough Wastewater System Assets	9.8%	18.7%	21.3%
Comparable Group			
American States Water Co	29.1%	27.4%	27.1%
American Water Works Co Inc	32.4%	34.3%	34.1%
Artesian Resources -CL A	30.9%	31.7%	30.0%
California Water Service Gp	17.6%	18.0%	15.4%
Essential Utilities, Inc.	32.8%	31.2%	40.2%
Middlesex Water Co	24.6%	26.6%	25.5%
SJW Corp	18.7%	20.8%	16.7%
York Water Co	40.2%	42.8%	43.3%
Median	30.0%	29.3%	28.6%

Source: S&P Capital IQ
EXHIBIT 1

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT (1)	DESCRIPTION (2)	ORIGINAL COST (3)	ACCRUED DEPRECIATION (4)
353.20	LAND AND LAND RIGHTS	30.00	
361.10	GRAVITY MAINS	5,431,257.44	2,001,926
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2,541,613.32	399,740
361.20	GRAVITY MAINS MANHOLES	1,485,457.73	382,816
363.20	SERVICES TO CUSTOMERS	483,826.79	232,401
	TOTAL COMPANY	9,942,185.28	3,016,883

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF ORIGINAL COST
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT	DESCRIPTION	ORIGINAL COST
(1)	(2)	(3)
353.20	LAND AND LAND RIGHTS	30.00
361.10	GRAVITY MAINS	5,431,257.44
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2,541,613.32
361.20	GRAVITY MAINS MANHOLES	1,485,457.73
363.20	SERVICES TO CUSTOMERS	483,826.79
	TOTAL COMPANY	9,942,185.28

**BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS**

**SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED
DEPRECIATION RELATED TO ORIGINAL COST AS OF JANUARY 13, 2023**

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.20	LAND AND LAND RIGHTS	NONDEPRECIABLE	30.00	
361.10	GRAVITY MAINS	70-R2.5	5,431,257.44	2,001,926
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	50-R2.5	2,541,613.32	399,740
361.20	GRAVITY MAINS MANHOLES	65-R3	1,485,457.73	382,816
363.20	SERVICES TO CUSTOMERS	60-R2.5	483,826.79	232,401
	TOTAL COMPANY		9,942,185.28	3,016,883

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST NEW AND ORIGINAL COST NEW LESS DEPRECIATION
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

DESCRIPTION (1)	ORIGINAL COST (2)
1. ORIGINAL COST NEW	\$ 9,942,185
2. LESS: ACCRUED DEPRECIATION	- <u>3,016,883</u>
3. OCNLD	<u>\$ 6,925,302</u>

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 353.20 - LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT JANUARY 13, 2023

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL--		EXP.	--ACCRUED DEPREC.--	
(1)	(2)	(3)	RATE	AMOUNT	(6)	FACTOR	AMOUNT
			(4)	(5)		(7)	(8)
NONDEPRECIABLE							
1998	10.00						
2001	5.00						
2004	4.00						
2005	11.00						
	30.00						
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00							

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 - GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
1919	6,865.28	70.00	1.43	98.17	6.60	0.9057	6,218
1920	43,864.55	70.00	1.43	627.26	6.81	0.9027	39,597
1924	3,568.06	70.00	1.43	51.02	7.72	0.8897	3,175
1927	120,353.38	70.00	1.43	1,721.05	8.42	0.8797	105,876
1929	152,570.80	70.00	1.43	2,181.76	8.90	0.8729	133,173
1930	402,323.15	70.00	1.43	5,753.22	9.15	0.8693	349,735
1938	29,281.28	70.00	1.43	418.72	11.31	0.8384	24,550
1945	1,843.23	70.00	1.43	26.36	13.62	0.8054	1,485
1946	6,213.79	70.00	1.43	88.86	13.99	0.8001	4,972
1947	4,979.31	70.00	1.43	71.20	14.38	0.7946	3,956
1948	14,728.86	70.00	1.43	210.62	14.77	0.7890	11,621
1949	24,053.96	70.00	1.43	343.97	15.18	0.7831	18,838
1950	27,866.82	70.00	1.43	398.50	15.60	0.7771	21,656
1952	13,071.77	70.00	1.43	186.93	16.48	0.7646	9,994
1958	44,994.92	70.00	1.43	643.43	19.42	0.7226	32,512
1961	15,161.50	70.00	1.43	216.81	21.05	0.6993	10,602
1962	940.15	70.00	1.43	13.44	21.62	0.6911	650
1963	13,523.09	70.00	1.43	193.38	22.20	0.6829	9,234
1964	1,162.56	70.00	1.43	16.62	22.79	0.6744	784
1966	15,125.04	70.00	1.43	216.29	23.99	0.6573	9,942
1971	21,614.24	70.00	1.43	309.08	27.19	0.6116	13,219
1972	2,416.24	70.00	1.43	34.55	27.86	0.6020	1,455
1982	40,309.60	70.00	1.43	576.43	34.98	0.5003	20,166
1990	715,774.22	70.00	1.43	10,235.57	41.20	0.4114	294,491
1991	509,948.91	70.00	1.43	7,292.27	42.01	0.3999	203,908
2001	23,369.46	70.00	1.43	334.18	50.39	0.2801	6,547
2002	37,003.53	70.00	1.43	529.15	51.26	0.2677	9,906
2003	215,702.91	70.00	1.43	3,084.55	52.13	0.2553	55,067
2004	101,491.16	70.00	1.43	1,451.32	53.01	0.2427	24,633
2005	102,671.16	70.00	1.43	1,468.20	53.89	0.2301	23,629
2006	781,969.87	70.00	1.43	11,182.17	54.78	0.2174	170,024
2007	1,117,919.60	70.00	1.43	15,986.25	55.67	0.2047	228,849
2008	721,752.72	70.00	1.43	10,321.06	56.57	0.1919	138,475
2012	74,680.00	70.00	1.43	1,067.92	60.19	0.1401	10,466
2014	22,142.32	70.00	1.43	316.64	62.03	0.1139	2,521
	5,431,257.44			77,666.95			2,001,926

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.43

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 - COLLECTION SEWERS - GRAVITY - MAINS RELINING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 50-R2.5							
NET SALVAGE PERCENT.. 0							
2005	210,000.00	50.00	2.00	4,200.00	34.15	0.3170	66,570
2007	314,401.92	50.00	2.00	6,288.04	35.86	0.2828	88,913
2010	67,338.00	50.00	2.00	1,346.76	38.49	0.2302	15,501
2012	296,780.40	50.00	2.00	5,935.61	40.27	0.1946	57,753
2013	141,744.00	50.00	2.00	2,834.88	41.17	0.1766	25,032
2014	67,512.60	50.00	2.00	1,350.25	42.08	0.1584	10,694
2015	329,170.74	50.00	2.00	6,583.41	42.99	0.1402	46,150
2017	452,770.56	50.00	2.00	9,055.41	44.82	0.1036	46,907
2018	206,011.80	50.00	2.00	4,120.24	45.75	0.0850	17,511
2019	253,822.80	50.00	2.00	5,076.46	46.68	0.0664	16,854
2020	106,105.20	50.00	2.00	2,122.10	47.61	0.0478	5,072
2021	95,955.30	50.00	2.00	1,919.11	48.55	0.0290	2,783
	2,541,613.32			50,832.27			399,740
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00							

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.20 - GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 65-R3							
NET SALVAGE PERCENT.. 0							
1927	12,752.72	65.00	1.54	196.39	3.48	0.9465	12,070
1929	23,991.33	65.00	1.54	369.47	4.00	0.9385	22,515
1930	56,617.80	65.00	1.54	871.91	4.25	0.9346	52,916
1938	5,068.03	65.00	1.54	78.05	6.32	0.9028	4,575
1945	554.44	65.00	1.54	8.54	8.30	0.8723	484
1946	881.22	65.00	1.54	13.57	8.62	0.8674	764
1947	1,051.46	65.00	1.54	16.19	8.94	0.8625	907
1948	3,861.37	65.00	1.54	59.47	9.28	0.8572	3,310
1949	5,724.61	65.00	1.54	88.16	9.62	0.8520	4,877
1950	4,836.72	65.00	1.54	74.49	9.98	0.8465	4,094
1952	1,477.72	65.00	1.54	22.76	10.74	0.8348	1,234
1958	6,141.86	65.00	1.54	94.58	13.33	0.7949	4,882
1961	4,077.83	65.00	1.54	62.80	14.83	0.7719	3,147
1962	883.22	65.00	1.54	13.60	15.36	0.7637	675
1963	1,946.03	65.00	1.54	29.97	15.90	0.7554	1,470
1964	841.17	65.00	1.54	12.95	16.46	0.7468	628
1966	3,781.25	65.00	1.54	58.23	17.61	0.7291	2,757
1971	5,649.85	65.00	1.54	87.01	20.72	0.6812	3,849
1972	1,381.92	65.00	1.54	21.28	21.38	0.6711	927
1991	96,947.99	65.00	1.54	1,493.00	35.77	0.4497	43,597
2003	60,826.14	65.00	1.54	936.72	46.31	0.2875	17,490
2004	29,792.04	65.00	1.54	458.80	47.23	0.2734	8,145
2006	66,150.00	65.00	1.54	1,018.71	49.08	0.2449	16,201
2007	281,942.16	65.00	1.54	4,341.91	50.01	0.2306	65,022
2008	161,779.20	65.00	1.54	2,491.40	50.95	0.2162	34,969
2011	123,767.90	65.00	1.54	1,906.03	53.80	0.1723	21,326
2012	26,536.86	65.00	1.54	408.67	54.75	0.1577	4,185
2013	118,595.09	65.00	1.54	1,826.36	55.71	0.1429	16,950
2014	151,136.58	65.00	1.54	2,327.50	56.67	0.1282	19,368
2015	11,428.54	65.00	1.54	176.00	57.64	0.1132	1,294
2016	5,829.26	65.00	1.54	89.77	58.61	0.0983	573
2017	23,741.64	65.00	1.54	365.62	59.58	0.0834	1,980
2018	48,020.40	65.00	1.54	739.51	60.55	0.0685	3,287
2019	5,216.40	65.00	1.54	80.33	61.53	0.0534	278
2020	32,899.20	65.00	1.54	506.65	62.51	0.0383	1,260
2022	99,327.78	65.00	1.54	1,529.65	64.47	0.0082	810
	1,485,457.73			22,876.05			382,816

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 - SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R2.5							
NET SALVAGE PERCENT.. 0							
1919	1,572.61	60.00	1.67	26.26	2.05	0.9658	1,519
1920	9,350.65	60.00	1.67	156.16	2.33	0.9612	8,988
1924	748.05	60.00	1.67	12.49	3.42	0.9430	705
1927	25,661.16	60.00	1.67	428.54	4.15	0.9308	23,886
1929	32,089.73	60.00	1.67	535.90	4.61	0.9232	29,624
1930	69,492.33	60.00	1.67	1,160.52	4.82	0.9197	63,910
1938	5,890.91	60.00	1.67	98.38	6.60	0.8900	5,243
1945	718.30	60.00	1.67	12.00	8.29	0.8618	619
1946	1,417.47	60.00	1.67	23.67	8.55	0.8575	1,215
1947	669.42	60.00	1.67	11.18	8.82	0.8530	571
1948	4,443.68	60.00	1.67	74.21	9.10	0.8483	3,770
1949	7,229.75	60.00	1.67	120.74	9.38	0.8437	6,100
1950	5,025.97	60.00	1.67	83.93	9.67	0.8388	4,216
1952	2,297.28	60.00	1.67	38.36	10.28	0.8287	1,904
1958	7,363.64	60.00	1.67	122.97	12.40	0.7933	5,842
1961	3,372.61	60.00	1.67	56.32	13.65	0.7725	2,605
1962	905.31	60.00	1.67	15.12	14.09	0.7652	693
1963	1,836.13	60.00	1.67	30.66	14.55	0.7575	1,391
1964	620.54	60.00	1.67	10.36	15.03	0.7495	465
1966	2,231.40	60.00	1.67	37.26	16.01	0.7332	1,636
1971	5,193.86	60.00	1.67	86.74	18.73	0.6878	3,572
1972	833.06	60.00	1.67	13.91	19.32	0.6780	565
1991	91,338.84	60.00	1.67	1,525.36	32.43	0.4595	41,970
2003	22,488.31	60.00	1.67	375.55	42.27	0.2955	6,645
2004	14,689.02	60.00	1.67	245.31	43.13	0.2812	4,130
2015	7,875.00	60.00	1.67	131.51	52.97	0.1172	923
2016	27,650.00	60.00	1.67	461.76	53.89	0.1018	2,816
2017	39,410.82	60.00	1.67	658.16	54.81	0.0865	3,409
2018	11,725.00	60.00	1.67	195.81	55.74	0.0710	832
2019	15,033.62	60.00	1.67	251.06	56.68	0.0553	832
2020	23,835.00	60.00	1.67	398.04	57.61	0.0398	949
2021	32,490.21	60.00	1.67	542.59	58.55	0.0242	785
2022	8,327.11	60.00	1.67	139.06	59.49	0.0085	71
	483,826.79			8,079.89			232,401

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT (1)	DESCRIPTION (2)	REPLACEMENT COST (3)	ACCRUED DEPRECIATION (4)
353.20	LAND AND LAND RIGHTS	30.00	
361.10	GRAVITY MAINS	52,673,797.78	39,302,751
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	3,582,106.12	623,409
361.20	GRAVITY MAINS MANHOLES	8,160,019.18	5,832,103
363.20	SERVICES TO CUSTOMERS	10,009,777.55	8,810,742
	TOTAL COMPANY	74,425,730.63	54,569,005

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF REPLACEMENT COST
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT (1)	DESCRIPTION (2)	REPLACEMENT COST (3)
353.20	LAND AND LAND RIGHTS	30.00
361.10	GRAVITY MAINS	52,673,797.78
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	3,582,106.12
361.20	GRAVITY MAINS MANHOLES	8,160,019.18
363.20	SERVICES TO CUSTOMERS	10,009,777.55
	TOTAL COMPANY	74,425,730.63

**BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS**

**SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED
DEPRECIATION RELATED TO REPLACEMENT COST AS OF JANUARY 13, 2023**

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.20	LAND AND LAND RIGHTS	NONDEPRECIABLE	30.00	
361.10	GRAVITY MAINS	70-R2.5	52,673,797.78	39,302,751
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	50-R2.5	3,582,106.12	623,409
361.20	GRAVITY MAINS MANHOLES	65-R3	8,160,019.18	5,832,103
363.20	SERVICES TO CUSTOMERS	60-R2.5	10,009,777.55	8,810,742
	TOTAL COMPANY		74,425,730.63	54,569,005

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST NEW AND REPLACEMENT COST NEW LESS DEPRECIATION
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

DESCRIPTION (1)	REPLACEMENT COST (2)
<u>WATER SYSTEM</u>	
1. REPLACEMENT COST NEW	\$ 74,425,731
2. LESS: ACCRUED DEPRECIATION	- <u>54,569,005</u>
3. PRELIMINARY RCNLD	<u>\$ 19,856,726</u>

BUTLER AREA SEWER AUTHORITY
BUTLER AREA SEWER AUTHORITY WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT (1)	DESCRIPTION (2)	VINTAGE YEAR (3)	BASE COST (4)	TRANSITION FACTOR (5)	FACTOR REFERENCE (6)	REPLACEMENT COST (7)
353.20	LAND AND LAND RIGHTS	1998	10.00	1.00000	(1)	10.00
353.20	LAND AND LAND RIGHTS	2001	5.00	1.00000	(1)	5.00
353.20	LAND AND LAND RIGHTS	2004	4.00	1.00000	(1)	4.00
353.20	LAND AND LAND RIGHTS	2005	11.00	1.00000	(1)	11.00
361.10	GRAVITY MAINS	1919	6,865.28	51.05000	(2)	350,472.54
361.10	GRAVITY MAINS	1920	43,864.55	46.40909	(2)	2,035,713.89
361.10	GRAVITY MAINS	1924	3,568.06	46.40909	(2)	165,590.42
361.10	GRAVITY MAINS	1927	120,353.38	48.61905	(2)	5,851,466.71
361.10	GRAVITY MAINS	1929	152,570.80	51.05000	(2)	7,788,739.34
361.10	GRAVITY MAINS	1930	402,323.15	51.05000	(2)	20,538,596.81
361.10	GRAVITY MAINS	1938	29,281.28	46.40909	(2)	1,358,917.59
361.10	GRAVITY MAINS	1945	1,843.23	39.26923	(2)	72,382.22
361.10	GRAVITY MAINS	1946	6,213.79	35.20690	(2)	218,768.26
361.10	GRAVITY MAINS	1947	4,979.31	29.17143	(2)	145,253.59
361.10	GRAVITY MAINS	1948	14,728.86	24.90244	(2)	366,784.54
361.10	GRAVITY MAINS	1949	24,053.96	24.30952	(2)	584,740.31
361.10	GRAVITY MAINS	1950	27,866.82	23.74419	(2)	661,674.96
361.10	GRAVITY MAINS	1952	13,071.77	21.72340	(2)	283,963.34
361.10	GRAVITY MAINS	1958	44,994.92	16.20635	(2)	729,203.39
361.10	GRAVITY MAINS	1961	15,161.50	14.79710	(2)	224,346.25
361.10	GRAVITY MAINS	1962	940.15	14.38028	(2)	13,519.62
361.10	GRAVITY MAINS	1963	13,523.09	14.18056	(2)	191,764.93
361.10	GRAVITY MAINS	1964	1,162.56	13.98630	(2)	16,259.91
361.10	GRAVITY MAINS	1966	15,125.04	13.61333	(2)	205,902.21
361.10	GRAVITY MAINS	1971	21,614.24	10.86170	(2)	234,767.44
361.10	GRAVITY MAINS	1972	2,416.24	10.41837	(2)	25,173.28
361.10	GRAVITY MAINS	1982	40,309.60	4.41991	(2)	178,164.94
361.10	GRAVITY MAINS	1990	715,774.22	3.39203	(2)	2,427,925.18
361.10	GRAVITY MAINS	1991	509,948.91	3.32573	(2)	1,695,953.87
361.10	GRAVITY MAINS	2001	23,369.46	2.61125	(2)	61,023.58
361.10	GRAVITY MAINS	2002	37,003.53	2.52723	(2)	93,516.35
361.10	GRAVITY MAINS	2003	215,702.91	2.50860	(2)	541,112.21
361.10	GRAVITY MAINS	2004	101,491.16	2.36343	(2)	239,866.84
361.10	GRAVITY MAINS	2005	102,671.16	2.17697	(2)	223,512.27
361.10	GRAVITY MAINS	2006	781,969.87	2.04609	(2)	1,599,982.44
361.10	GRAVITY MAINS	2007	1,117,919.60	1.92642	(2)	2,153,577.19
361.10	GRAVITY MAINS	2008	721,752.72	1.73639	(2)	1,253,247.50
361.10	GRAVITY MAINS	2012	74,680.00	1.48617	(2)	110,987.31
361.10	GRAVITY MAINS	2014	22,142.32	1.39672	(2)	30,926.55
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2005	210,000.00	2.06812	(2)	434,305.97
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2007	314,401.92	1.83009	(2)	575,385.17
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2010	67,338.00	1.55441	(2)	104,670.66
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2012	296,780.40	1.41186	(2)	419,013.32
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2013	141,744.00	1.38367	(2)	196,126.38
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2014	67,512.60	1.32688	(2)	89,581.19
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2015	329,170.74	1.31074	(2)	431,458.32
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2017	452,770.56	1.24833	(2)	565,205.67
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2018	206,011.80	1.20791	(2)	248,843.27
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2019	253,822.80	1.16861	(2)	296,620.99
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2020	106,105.20	1.13048	(2)	119,949.58
361.12	COLLECTION SEWERS - GRAVITY - MAINS RELINING	2021	95,955.30	1.05201	(2)	100,945.60
361.20	GRAVITY MAINS MANHOLES	1927	12,752.72	48.61905	(2)	620,025.10
361.20	GRAVITY MAINS MANHOLES	1929	23,991.33	51.05000	(2)	1,224,757.40
361.20	GRAVITY MAINS MANHOLES	1930	56,617.80	51.05000	(2)	2,890,338.69
361.20	GRAVITY MAINS MANHOLES	1938	5,068.03	46.40909	(2)	235,202.67
361.20	GRAVITY MAINS MANHOLES	1945	554.44	39.26923	(2)	21,772.43
361.20	GRAVITY MAINS MANHOLES	1946	881.22	35.20690	(2)	31,025.02
361.20	GRAVITY MAINS MANHOLES	1947	1,051.46	29.17143	(2)	30,672.59
361.20	GRAVITY MAINS MANHOLES	1948	3,861.37	24.90244	(2)	96,157.53
361.20	GRAVITY MAINS MANHOLES	1949	5,724.61	24.30952	(2)	139,162.54
361.20	GRAVITY MAINS MANHOLES	1950	4,836.72	23.74419	(2)	114,843.98
361.20	GRAVITY MAINS MANHOLES	1952	1,477.72	21.72340	(2)	32,101.11

BUTLER AREA SEWER AUTHORITY
BUTLER AREA SEWER AUTHORITY WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF JANUARY 13, 2023

ACCOUNT (1)	DESCRIPTION (2)	VINTAGE YEAR (3)	BASE COST (4)	TRANSITION FACTOR (5)	FACTOR REFERENCE (6)	REPLACEMENT COST (7)
361.20	GRAVITY MAINS MANHOLES	1958	6,141.86	16.20635	(2)	99,537.13
361.20	GRAVITY MAINS MANHOLES	1961	4,077.83	14.79710	(2)	60,340.06
361.20	GRAVITY MAINS MANHOLES	1962	883.22	14.38028	(2)	12,700.95
361.20	GRAVITY MAINS MANHOLES	1963	1,946.03	14.18056	(2)	27,595.79
361.20	GRAVITY MAINS MANHOLES	1964	841.17	13.98630	(2)	11,764.86
361.20	GRAVITY MAINS MANHOLES	1966	3,781.25	13.61333	(2)	51,475.42
361.20	GRAVITY MAINS MANHOLES	1971	5,649.85	10.86170	(2)	61,366.99
361.20	GRAVITY MAINS MANHOLES	1972	1,381.92	10.41837	(2)	14,397.35
361.20	GRAVITY MAINS MANHOLES	1991	96,947.99	3.32573	(2)	322,423.12
361.20	GRAVITY MAINS MANHOLES	2003	60,826.14	2.50860	(2)	152,588.42
361.20	GRAVITY MAINS MANHOLES	2004	29,792.04	2.36343	(2)	70,411.28
361.20	GRAVITY MAINS MANHOLES	2006	66,150.00	2.04609	(2)	135,349.00
361.20	GRAVITY MAINS MANHOLES	2007	281,942.16	1.92642	(2)	543,137.63
361.20	GRAVITY MAINS MANHOLES	2008	161,779.20	1.73639	(2)	280,912.52
361.20	GRAVITY MAINS MANHOLES	2011	123,767.90	1.57562	(2)	195,010.84
361.20	GRAVITY MAINS MANHOLES	2012	26,536.86	1.48617	(2)	39,438.33
361.20	GRAVITY MAINS MANHOLES	2013	118,595.09	1.45649	(2)	172,732.65
361.20	GRAVITY MAINS MANHOLES	2014	151,136.58	1.39672	(2)	211,095.00
361.20	GRAVITY MAINS MANHOLES	2015	11,428.54	1.37973	(2)	15,768.30
361.20	GRAVITY MAINS MANHOLES	2016	5,829.26	1.35232	(2)	7,883.01
361.20	GRAVITY MAINS MANHOLES	2017	23,741.64	1.31403	(2)	31,197.19
361.20	GRAVITY MAINS MANHOLES	2018	48,020.40	1.27148	(2)	61,057.07
361.20	GRAVITY MAINS MANHOLES	2019	5,216.40	1.23012	(2)	6,416.80
361.20	GRAVITY MAINS MANHOLES	2020	32,899.20	1.18998	(2)	39,149.28
361.20	GRAVITY MAINS MANHOLES	2022	99,327.78	1.00889	(2)	100,211.13
363.20	SERVICES TO CUSTOMERS	1919	1,572.61	72.45455	(3)	113,942.74
363.20	SERVICES TO CUSTOMERS	1920	9,350.65	66.41667	(3)	621,039.00
363.20	SERVICES TO CUSTOMERS	1924	748.05	61.30769	(3)	45,861.22
363.20	SERVICES TO CUSTOMERS	1927	25,661.16	61.30769	(3)	1,573,226.50
363.20	SERVICES TO CUSTOMERS	1929	32,089.73	56.92857	(3)	1,826,822.49
363.20	SERVICES TO CUSTOMERS	1930	69,492.33	56.92857	(3)	3,956,099.07
363.20	SERVICES TO CUSTOMERS	1938	5,890.91	56.92857	(3)	335,361.09
363.20	SERVICES TO CUSTOMERS	1945	718.30	46.88235	(3)	33,675.59
363.20	SERVICES TO CUSTOMERS	1946	1,417.47	41.94737	(3)	59,459.14
363.20	SERVICES TO CUSTOMERS	1947	669.42	36.22727	(3)	24,251.26
363.20	SERVICES TO CUSTOMERS	1948	4,443.68	31.88000	(3)	141,664.52
363.20	SERVICES TO CUSTOMERS	1949	7,229.75	29.51852	(3)	213,411.51
363.20	SERVICES TO CUSTOMERS	1950	5,025.97	28.46429	(3)	143,060.65
363.20	SERVICES TO CUSTOMERS	1952	2,297.28	25.70968	(3)	59,062.33
363.20	SERVICES TO CUSTOMERS	1958	7,363.64	18.11364	(3)	133,382.30
363.20	SERVICES TO CUSTOMERS	1961	3,372.61	15.94000	(3)	53,759.40
363.20	SERVICES TO CUSTOMERS	1962	905.31	15.62745	(3)	14,147.69
363.20	SERVICES TO CUSTOMERS	1963	1,836.13	15.03774	(3)	27,611.24
363.20	SERVICES TO CUSTOMERS	1964	620.54	14.49091	(3)	8,992.19
363.20	SERVICES TO CUSTOMERS	1966	2,231.40	13.28333	(3)	29,640.43
363.20	SERVICES TO CUSTOMERS	1971	5,193.86	8.95506	(3)	46,511.31
363.20	SERVICES TO CUSTOMERS	1972	833.06	8.30208	(3)	6,916.13
363.20	SERVICES TO CUSTOMERS	1991	91,338.84	2.93015	(3)	267,636.23
363.20	SERVICES TO CUSTOMERS	2003	22,488.31	2.16576	(3)	48,704.30
363.20	SERVICES TO CUSTOMERS	2004	14,689.02	2.05412	(3)	30,173.06
363.20	SERVICES TO CUSTOMERS	2015	7,875.00	1.28964	(3)	10,155.95
363.20	SERVICES TO CUSTOMERS	2016	27,650.00	1.27724	(3)	35,315.79
363.20	SERVICES TO CUSTOMERS	2017	39,410.82	1.22615	(3)	48,323.73
363.20	SERVICES TO CUSTOMERS	2018	11,725.00	1.19311	(3)	13,989.26
363.20	SERVICES TO CUSTOMERS	2019	15,033.62	1.15843	(3)	17,415.40
363.20	SERVICES TO CUSTOMERS	2020	23,835.00	1.13050	(3)	26,945.38
363.20	SERVICES TO CUSTOMERS	2021	32,490.21	1.07268	(3)	34,851.54
363.20	SERVICES TO CUSTOMERS	2022	8,327.11	1.00504	(3)	8,369.11
TOTAL COMPANY			9,942,185.28			74,425,730.63

- NOTES : (1) Not trended
(2) Handy-Whitman Index of Public Utility Costs, 7/1/22, Cost Trends of Water Utility Construction, North Atlantic Region, Line 34
(3) Handy-Whitman Index of Public Utility Costs, 7/1/22, Cost Trends of Water Utility Construction, North Atlantic Region, Line 39

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 353.20 - LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT JANUARY 13, 2023

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL--		EXP.	--ACCRUED DEPREC.--	
(1)	(2)	(3)	RATE	AMOUNT	(6)	FACTOR	AMOUNT
			(4)	(5)		(7)	(8)
NONDEPRECIABLE							
1998	10.00						
2001	5.00						
2004	4.00						
2005	11.00						
	30.00						
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00							

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 - GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
1919	350,472.54	70.00	1.43	5,011.76	6.60	0.9057	317,426
1920	2,035,713.89	70.00	1.43	29,110.71	6.81	0.9027	1,837,659
1924	165,590.42	70.00	1.43	2,367.94	7.72	0.8897	147,327
1927	5,851,466.71	70.00	1.43	83,675.97	8.42	0.8797	5,147,594
1929	7,788,739.34	70.00	1.43	111,378.97	8.90	0.8729	6,798,479
1930	20,538,596.81	70.00	1.43	293,701.93	9.15	0.8693	17,853,997
1938	1,358,917.59	70.00	1.43	19,432.52	11.31	0.8384	1,139,357
1945	72,382.22	70.00	1.43	1,035.07	13.62	0.8054	58,299
1946	218,768.26	70.00	1.43	3,128.39	13.99	0.8001	175,045
1947	145,253.59	70.00	1.43	2,077.13	14.38	0.7946	115,414
1948	366,784.54	70.00	1.43	5,245.02	14.77	0.7890	289,393
1949	584,740.31	70.00	1.43	8,361.79	15.18	0.7831	457,934
1950	661,674.96	70.00	1.43	9,461.95	15.60	0.7771	514,214
1952	283,963.34	70.00	1.43	4,060.68	16.48	0.7646	217,110
1958	729,203.39	70.00	1.43	10,427.61	19.42	0.7226	526,900
1961	224,346.25	70.00	1.43	3,208.15	21.05	0.6993	156,883
1962	13,519.62	70.00	1.43	193.33	21.62	0.6911	9,344
1963	191,764.93	70.00	1.43	2,742.24	22.20	0.6829	130,949
1964	16,259.91	70.00	1.43	232.52	22.79	0.6744	10,966
1966	205,902.21	70.00	1.43	2,944.40	23.99	0.6573	135,337
1971	234,767.44	70.00	1.43	3,357.17	27.19	0.6116	143,577
1972	25,173.28	70.00	1.43	359.98	27.86	0.6020	15,154
1982	178,164.94	70.00	1.43	2,547.76	34.98	0.5003	89,134
1990	2,427,925.18	70.00	1.43	34,719.33	41.20	0.4114	998,921
1991	1,695,953.87	70.00	1.43	24,252.14	42.01	0.3999	678,144
2001	61,023.58	70.00	1.43	872.64	50.39	0.2801	17,095
2002	93,516.35	70.00	1.43	1,337.28	51.26	0.2677	25,035
2003	541,112.21	70.00	1.43	7,737.90	52.13	0.2553	138,141
2004	239,866.84	70.00	1.43	3,430.10	53.01	0.2427	58,218
2005	223,512.27	70.00	1.43	3,196.23	53.89	0.2301	51,439
2006	1,599,982.44	70.00	1.43	22,879.75	54.78	0.2174	347,884
2007	2,153,577.19	70.00	1.43	30,796.15	55.67	0.2047	440,859
2008	1,253,247.50	70.00	1.43	17,921.44	56.57	0.1919	240,448
2012	110,987.31	70.00	1.43	1,587.12	60.19	0.1401	15,554
2014	30,926.55	70.00	1.43	442.25	62.03	0.1139	3,521
	52,673,797.78			753,235.32			39,302,751

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.43

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.12 - COLLECTION SEWERS - GRAVITY - MAINS RELINING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 50-R2.5							
NET SALVAGE PERCENT.. 0							
2005	434,305.97	50.00	2.00	8,686.12	34.15	0.3170	137,675
2007	575,385.17	50.00	2.00	11,507.70	35.86	0.2828	162,719
2010	104,670.66	50.00	2.00	2,093.41	38.49	0.2302	24,095
2012	419,013.32	50.00	2.00	8,380.27	40.27	0.1946	81,540
2013	196,126.38	50.00	2.00	3,922.53	41.17	0.1766	34,636
2014	89,581.19	50.00	2.00	1,791.62	42.08	0.1584	14,190
2015	431,458.32	50.00	2.00	8,629.17	42.99	0.1402	60,490
2017	565,205.67	50.00	2.00	11,304.11	44.82	0.1036	58,555
2018	248,843.27	50.00	2.00	4,976.87	45.75	0.0850	21,152
2019	296,620.99	50.00	2.00	5,932.42	46.68	0.0664	19,696
2020	119,949.58	50.00	2.00	2,398.99	47.61	0.0478	5,734
2021	100,945.60	50.00	2.00	2,018.91	48.55	0.0290	2,927
	3,582,106.12			71,642.12			623,409
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00							

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 361.20 - GRAVITY MAINS MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE AMOUNT (4) (5)		EXP. (6)	--ACCRUED DEPREC.-- FACTOR AMOUNT (7) (8)	
SURVIVOR CURVE.. IOWA 65-R3							
NET SALVAGE PERCENT.. 0							
1927	620,025.10	65.00	1.54	9,548.39	3.48	0.9465	586,829
1929	1,224,757.40	65.00	1.54	18,861.26	4.00	0.9385	1,149,386
1930	2,890,338.69	65.00	1.54	44,511.22	4.25	0.9346	2,701,368
1938	235,202.67	65.00	1.54	3,622.12	6.32	0.9028	212,334
1945	21,772.43	65.00	1.54	335.30	8.30	0.8723	18,992
1946	31,025.02	65.00	1.54	477.79	8.62	0.8674	26,910
1947	30,672.59	65.00	1.54	472.36	8.94	0.8625	26,454
1948	96,157.53	65.00	1.54	1,480.83	9.28	0.8572	82,429
1949	139,162.54	65.00	1.54	2,143.10	9.62	0.8520	118,566
1950	114,843.98	65.00	1.54	1,768.60	9.98	0.8465	97,211
1952	32,101.11	65.00	1.54	494.36	10.74	0.8348	26,797
1958	99,537.13	65.00	1.54	1,532.87	13.33	0.7949	79,124
1961	60,340.06	65.00	1.54	929.24	14.83	0.7719	46,573
1962	12,700.95	65.00	1.54	195.59	15.36	0.7637	9,700
1963	27,595.79	65.00	1.54	424.98	15.90	0.7554	20,845
1964	11,764.86	65.00	1.54	181.18	16.46	0.7468	8,786
1966	51,475.42	65.00	1.54	792.72	17.61	0.7291	37,530
1971	61,366.99	65.00	1.54	945.05	20.72	0.6812	41,805
1972	14,397.35	65.00	1.54	221.72	21.38	0.6711	9,662
1991	322,423.12	65.00	1.54	4,965.32	35.77	0.4497	144,990
2003	152,588.42	65.00	1.54	2,349.86	46.31	0.2875	43,875
2004	70,411.28	65.00	1.54	1,084.33	47.23	0.2734	19,249
2006	135,349.00	65.00	1.54	2,084.37	49.08	0.2449	33,150
2007	543,137.63	65.00	1.54	8,364.32	50.01	0.2306	125,258
2008	280,912.52	65.00	1.54	4,326.05	50.95	0.2162	60,719
2011	195,010.84	65.00	1.54	3,003.17	53.80	0.1723	33,602
2012	39,438.33	65.00	1.54	607.35	54.75	0.1577	6,219
2013	172,732.65	65.00	1.54	2,660.08	55.71	0.1429	24,687
2014	211,095.00	65.00	1.54	3,250.86	56.67	0.1282	27,052
2015	15,768.30	65.00	1.54	242.83	57.64	0.1132	1,785
2016	7,883.01	65.00	1.54	121.40	58.61	0.0983	775
2017	31,197.19	65.00	1.54	480.44	59.58	0.0834	2,601
2018	61,057.07	65.00	1.54	940.28	60.55	0.0685	4,180
2019	6,416.80	65.00	1.54	98.82	61.53	0.0534	343
2020	39,149.28	65.00	1.54	602.90	62.51	0.0383	1,500
2022	100,211.13	65.00	1.54	1,543.25	64.47	0.0082	817
	8,160,019.18			125,664.31			5,832,103

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

BRENTWOOD BOROUGH
BRENTWOOD BOROUGH WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 - SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT JANUARY 13, 2023

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R2.5							
NET SALVAGE PERCENT.. 0							
1919	113,942.74	60.00	1.67	1,902.84	2.05	0.9658	110,049
1920	621,039.00	60.00	1.67	10,371.35	2.33	0.9612	596,924
1924	45,861.22	60.00	1.67	765.88	3.42	0.9430	43,247
1927	1,573,226.50	60.00	1.67	26,272.88	4.15	0.9308	1,464,406
1929	1,826,822.49	60.00	1.67	30,507.94	4.61	0.9232	1,686,468
1930	3,956,099.07	60.00	1.67	66,066.85	4.82	0.9197	3,638,306
1938	335,361.09	60.00	1.67	5,600.53	6.60	0.8900	298,471
1945	33,675.59	60.00	1.67	562.38	8.29	0.8618	29,023
1946	59,459.14	60.00	1.67	992.97	8.55	0.8575	50,986
1947	24,251.26	60.00	1.67	405.00	8.82	0.8530	20,686
1948	141,664.52	60.00	1.67	2,365.80	9.10	0.8483	120,178
1949	213,411.51	60.00	1.67	3,563.97	9.38	0.8437	180,049
1950	143,060.65	60.00	1.67	2,389.11	9.67	0.8388	120,004
1952	59,062.33	60.00	1.67	986.34	10.28	0.8287	48,943
1958	133,382.30	60.00	1.67	2,227.48	12.40	0.7933	105,816
1961	53,759.40	60.00	1.67	897.78	13.65	0.7725	41,529
1962	14,147.69	60.00	1.67	236.27	14.09	0.7652	10,825
1963	27,611.24	60.00	1.67	461.11	14.55	0.7575	20,916
1964	8,992.19	60.00	1.67	150.17	15.03	0.7495	6,740
1966	29,640.43	60.00	1.67	495.00	16.01	0.7332	21,731
1971	46,511.31	60.00	1.67	776.74	18.73	0.6878	31,992
1972	6,916.13	60.00	1.67	115.50	19.32	0.6780	4,689
1991	267,636.23	60.00	1.67	4,469.53	32.43	0.4595	122,979
2003	48,704.30	60.00	1.67	813.36	42.27	0.2955	14,392
2004	30,173.06	60.00	1.67	503.89	43.13	0.2812	8,484
2015	10,155.95	60.00	1.67	169.60	52.97	0.1172	1,190
2016	35,315.79	60.00	1.67	589.77	53.89	0.1018	3,596
2017	48,323.73	60.00	1.67	807.01	54.81	0.0865	4,180
2018	13,989.26	60.00	1.67	233.62	55.74	0.0710	993
2019	17,415.40	60.00	1.67	290.84	56.68	0.0553	964
2020	26,945.38	60.00	1.67	449.99	57.61	0.0398	1,073
2021	34,851.54	60.00	1.67	582.02	58.55	0.0242	842
2022	8,369.11	60.00	1.67	139.76	59.49	0.0085	71
	10,009,777.55			167,163.28			8,810,742

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

Income Approach
Brentwood Borough Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

	Actual			Budget
	Year 0			Year 0
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
1. OPERATING REVENUES (1)				
2. Charges for services	3,777,696	3,885,852	4,132,883	3,762,000
3. Other operating revenue	5,112	149,145	323,944	2,000
4. Tap Fees	0	0	0	0
5. Total Operating Revenues	3,782,808	4,034,997	4,456,827	3,764,000
6. Rate Increase				
7. OPERATING EXPENSES (1)				
8. Operating & Maintenance Expenses	2,978,331	3,280,695	4,020,457	3,298,167
9. Operating Expenses Before Depreciation	2,978,331	3,280,695	4,020,457	3,298,167
10. Depreciation (2)	0	0	0	2,806
11. Total Operating Expenses	2,978,331	3,280,695	4,020,457	3,300,973
12. Operating Income	804,477	754,302	436,370	463,027
13. Revenues (3)	3,782,808	4,034,997	4,456,827	3,764,000
14. EBITDA (4)	804,477	754,302	436,370	465,833
15. EBIT (5)	804,477	754,302	436,370	463,027
16. EBIT	804,477	754,302	436,370	463,027
17. (-) Income Taxes	0	0	0	0
18. Debt Free Net Income	804,477	754,302	436,370	463,027
19. (+) Depreciation & Amortization	0	0	0	2,806
20. (-) Capital Expenditures (6)	579,500	260,806	352,500	501,000
21. (-) Changes in Working Capital (7)	(1,891)	(2,017)	(2,228)	(1,882)
22. Debt Free Net Cash Flow	\$226,868	\$495,513	\$86,098	(\$33,285)

Income Approach

Brentwood Borough Wastewater System Assets

Pro Forma Operations

Earnings Capitalization Model

	<u>2022</u>	Pro Forma <u>2022 (11)</u>
	3.98% Capitalization Rate Model (No Growth)	3.98% Capitalization Rate Model (No Growth)
23. Debt Free Net Cash Flow (10)	(\$33,285)	\$44,263
24. Capitalization Factor: (8)	3.98%	3.98%
25. Indicated Value (line 23 ÷ line 24)	(\$836,307)	\$1,112,148
	3.78% Capitalization Rate Model (0.20% Growth)	3.78% Capitalization Rate Model (0.20% Growth)
26. Debt Free Net Cash Flow (10)	(\$33,285)	\$44,263
27. Capitalization Factor: (9)	3.78%	3.78%
28. Indicated Value (line 26 ÷ line 27)	(\$880,556)	\$1,170,992

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Brentwood Borough Wastewater System Assets

Pro Forma Operations

Earnings Capitalization Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual. 2022 results are based on 2022 budget. Post-2022 based on customer growth (EDU) and average revenue per customer.

OPERATING EXPENSES - increase at 2.5% annually after 2022 unless noted elsewhere. Assumed economies of scale are shown on lines below.

- (2) Depreciation - Pre-2022 based on actual depreciation. Post-2022 based on depreciation rate plus same rate on half of CAPX.
- (3) Line 5.
- (4) Line 12 + line 10.
- (5) Line 12.
- (6) Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry -0.05% of revenues.
- (8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 22.
- (11) Debt Free Net Cash Flow adjusted for average 2019-2022 CAPX.

Terms:

CAPX - Capital Expenditures

CIP - Capital improvement plan

Dep - Depreciation expense

GROSS PPE - GROSS Property, plant and equipment

IOU - Investor owned utility

MUNI - Large regional municipally owned utility

NET PPE - NET Property, plant and equipment

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Actual			Budget	Estimated	Estimated
	2019	2020	2021	Year 0	Year 1	Year 2
1. OPERATING REVENUES (1)						
2. Charges for services	3,777,696	3,885,852	4,132,883	3,762,000	3,769,089	3,776,165
3. Other operating revenue	5,112	149,145	323,944	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	2,978,331	3,280,695	4,020,457	3,298,167	3,380,621	3,465,137
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(83,100)	(85,178)	(87,307)
12. LESS: EOS - Professional Services	0	0	0	(127,500)	(130,688)	(133,955)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	2,978,331	3,280,695	4,020,457	3,087,567	3,164,756	3,243,875
16. Depreciation (2)	0	0	0	2,806	159,948	162,080
17. Total Operating Expenses	2,978,331	3,280,695	4,020,457	3,090,373	3,324,704	3,405,955
18. Operating Income	804,477	754,302	436,370	673,627	446,385	372,210
19. Revenues (3)	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
20. EBITDA (4)	804,477	754,302	436,370	676,433	606,333	534,290
21. EBIT (5)	804,477	754,302	436,370	673,627	446,385	372,210
22. EBIT	804,477	754,302	436,370	673,627	446,385	372,210
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	804,477	754,302	436,370	673,627	446,385	372,210
25. (+) Depreciation & Amortization	0	0	0	2,806	159,948	162,080
26. (-) Capital Expenditures (6)	579,500	260,806	352,500	501,000	155,893	157,971
27. (-) Changes in Working Capital (7)	(1,891)	(2,017)	(2,228)	(1,882)	(1,886)	(1,889)
28. Debt Free Net Cash Flow	\$226,868	\$495,513	\$86,098	\$177,315	\$452,325	\$378,208
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.98% (8)					1	2
31. Present Value Debt Free Net Cash Flow					0.9807	0.9431
					\$443,595	\$356,688
					1	2
32. Present Value Factor: 3.78% (9)					0.9816	0.9459
33. Present Value Debt Free Net Cash Flow					\$444,003	\$357,747

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2025	Estimated Year 4 2026	Estimated Year 5 2027	Estimated Year 6 2028	Estimated Year 7 2029	Estimated Year 8 2030
1. OPERATING REVENUES (1)						
2. Charges for services	3,790,317	3,880,558	3,894,968	4,026,660	4,041,559	4,218,773
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	75,806	0	116,849	0	161,662	0
6. Total Operating Revenues	3,868,123	3,882,558	4,013,817	4,028,660	4,205,221	4,220,773
7. Rate Increase	2%		3%		4%	
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	3,551,765	3,640,559	3,731,573	3,824,863	3,920,484	4,018,496
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(89,490)	(91,727)	(94,020)	(96,371)	(98,780)	(101,249)
12. LESS: EOS - Professional Services	(137,304)	(140,736)	(144,255)	(147,861)	(151,557)	(155,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	3,324,972	3,408,096	3,493,299	3,580,631	3,670,147	3,761,901
16. Depreciation (2)	164,240	166,429	168,647	170,895	173,172	175,480
17. Total Operating Expenses	3,489,212	3,574,525	3,661,946	3,751,526	3,843,319	3,937,381
18. Operating Income	378,911	308,033	351,871	277,134	361,902	283,392
19. Revenues (3)	3,868,123	3,882,558	4,013,817	4,028,660	4,205,221	4,220,773
20. EBITDA (4)	543,151	474,462	520,518	448,029	535,074	458,872
21. EBIT (5)	378,911	308,033	351,871	277,134	361,902	283,392
22. EBIT	378,911	308,033	351,871	277,134	361,902	283,392
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	378,911	308,033	351,871	277,134	361,902	283,392
25. (+) Depreciation & Amortization	164,240	166,429	168,647	170,895	173,172	175,480
26. (-) Capital Expenditures (6)	160,077	162,210	164,372	166,563	168,783	171,032
27. (-) Changes in Working Capital (7)	(1,934)	(1,941)	(2,007)	(2,014)	(2,103)	(2,110)
28. Debt Free Net Cash Flow	\$385,008	\$314,193	\$358,153	\$283,480	\$368,394	\$289,951
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
	3	4	5	6	7	8
30. Present Value Factor: 3.98% (8)	0.9070	0.8723	0.8389	0.8068	0.7759	0.7462
31. Present Value Debt Free Net Cash Flow	\$349,202	\$274,071	\$300,455	\$228,712	\$285,837	\$216,361
	3	4	5	6	7	8
32. Present Value Factor: 3.78% (9)	0.9114	0.8782	0.8462	0.8154	0.7857	0.7571
33. Present Value Debt Free Net Cash Flow	\$350,896	\$275,924	\$303,069	\$231,150	\$289,447	\$219,522

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
	2031	2032	2033	2034	2035	2036
1. OPERATING REVENUES (1)						
2. Charges for services	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	212,502	0	179,825	0	188,405
6. Total Operating Revenues	4,236,383	4,464,552	4,481,064	4,677,461	4,694,761	4,900,529
7. Rate Increase		5%		4%		4%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,118,959	4,221,933	4,327,481	4,435,668	4,546,560	4,660,224
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(103,781)	(106,375)	(109,034)	(111,760)	(114,554)	(117,418)
12. LESS: EOS - Professional Services	(159,230)	(163,211)	(167,291)	(171,473)	(175,760)	(180,154)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	3,855,948	3,952,347	4,051,155	4,152,434	4,256,245	4,362,651
16. Depreciation (2)	177,819	180,189	182,591	185,025	187,491	189,989
17. Total Operating Expenses	4,033,767	4,132,536	4,233,747	4,337,459	4,443,736	4,552,640
18. Operating Income	202,616	332,016	247,317	340,002	251,025	347,889
19. Revenues (3)	4,236,383	4,464,552	4,481,064	4,677,461	4,694,761	4,900,529
20. EBITDA (4)	380,435	512,205	429,909	525,027	438,516	537,878
21. EBIT (5)	202,616	332,016	247,317	340,002	251,025	347,889
22. EBIT	202,616	332,016	247,317	340,002	251,025	347,889
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	202,616	332,016	247,317	340,002	251,025	347,889
25. (+) Depreciation & Amortization	177,819	180,189	182,591	185,025	187,491	189,989
26. (-) Capital Expenditures (6)	173,312	175,622	177,962	180,334	182,738	185,173
27. (-) Changes in Working Capital (7)	(2,118)	(2,232)	(2,241)	(2,339)	(2,347)	(2,450)
28. Debt Free Net Cash Flow	\$209,241	\$338,815	\$254,187	\$347,031	\$258,125	\$355,155
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
	9	10	11	12	13	14
30. Present Value Factor: 3.98% (8)	0.7177	0.6902	0.6638	0.6384	0.6139	0.5904
31. Present Value Debt Free Net Cash Flow	\$150,172	\$233,850	\$168,729	\$221,545	\$158,463	\$209,683
	9	10	11	12	13	14
32. Present Value Factor: 3.78% (9)	0.7295	0.7029	0.6773	0.6527	0.6289	0.6060
33. Present Value Debt Free Net Cash Flow	\$152,641	\$238,153	\$172,161	\$226,507	\$162,335	\$215,224

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
	2037	2038	2039	2040	2041	2042
1. OPERATING REVENUES (1)						
2. Charges for services	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	197,394	0	206,812	0	216,679
6. Total Operating Revenues	4,918,654	5,134,239	5,153,229	5,379,100	5,398,995	5,635,643
7. Rate Increase		4%		4%		4%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,776,729	4,896,147	5,018,551	5,144,015	5,272,615	5,404,431
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(120,354)	(123,362)	(126,446)	(129,608)	(132,848)	(136,169)
12. LESS: EOS - Professional Services	(184,658)	(189,274)	(194,006)	(198,856)	(203,828)	(208,924)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	4,471,718	4,583,511	4,698,098	4,815,551	4,935,940	5,059,338
16. Depreciation (2)	192,521	195,087	197,687	200,322	202,992	205,698
17. Total Operating Expenses	4,664,239	4,778,598	4,895,785	5,015,873	5,138,932	5,265,036
18. Operating Income	254,415	355,641	257,444	363,227	260,063	370,607
19. Revenues (3)	4,918,654	5,134,239	5,153,229	5,379,100	5,398,995	5,635,643
20. EBITDA (4)	446,936	550,728	455,131	563,549	463,055	576,305
21. EBIT (5)	254,415	355,641	257,444	363,227	260,063	370,607
22. EBIT	254,415	355,641	257,444	363,227	260,063	370,607
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	254,415	355,641	257,444	363,227	260,063	370,607
25. (+) Depreciation & Amortization	192,521	195,087	197,687	200,322	202,992	205,698
26. (-) Capital Expenditures (6)	187,641	190,142	192,676	195,244	197,847	200,484
27. (-) Changes in Working Capital (7)	(2,459)	(2,567)	(2,577)	(2,690)	(2,699)	(2,818)
28. Debt Free Net Cash Flow	\$261,755	\$363,154	\$265,031	\$370,995	\$267,908	\$378,639
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
	15	16	17	18	19	20
30. Present Value Factor: 3.98% (8)	0.5678	0.5461	0.5252	0.5051	0.4858	0.4672
31. Present Value Debt Free Net Cash Flow	\$148,624	\$198,318	\$139,194	\$187,389	\$130,150	\$176,900
	15	16	17	18	19	20
32. Present Value Factor: 3.78% (9)	0.5839	0.5626	0.5422	0.5224	0.5034	0.4850
33. Present Value Debt Free Net Cash Flow	\$152,839	\$204,310	\$143,700	\$193,808	\$134,865	\$183,640

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 3.98%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$378,639
Divided by Capitalization Factor (8)	<u>3.98%</u>
20th Year Terminal Value	9,513,537
20th Year Present Value Factor (11)	<u>0.4672</u>
Present Value of Terminal Value	4,444,725
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>4,577,941</u>
Indicated Value	<u><u>\$9,022,665</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.98%			
		Multiples (13)	Terminal Value
Projected EBIT	\$370,607	25.9	\$9,598,724
Projected EBITDA	576,305	16.4	<u>9,451,401</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			9,500,018
20th Year Present Value Factor (11)			<u>0.4672</u>
Present Value of Terminal Value			4,438,408
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>4,577,941</u>
Indicated Value			<u><u>\$9,016,349</u></u>

DCF With Capitalization of Terminal Value Model @ 3.78%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$378,639
Divided by Capitalization Factor (9)	<u>3.78%</u>
20th Year Terminal Value	10,016,899
20th Year Present Value Factor (12)	<u>0.4672</u>
Present Value of Terminal Value	4,679,895
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>4,577,941</u>
Indicated Value	<u><u>\$9,257,836</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.78%			
		Multiples (13)	Terminal Value
Projected EBIT	\$370,607	25.9	\$9,598,724
Projected EBITDA	576,305	16.4	<u>9,451,401</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			9,500,018
20th Year Present Value Factor (12)			<u>0.4672</u>
Present Value of Terminal Value			4,438,408
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>4,577,941</u>
Indicated Value			<u><u>\$9,016,349</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or based on 2022 budget. Post-2022 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by MUNI in 2023 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2022 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2022 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2022 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

Eliminated Expenses - Post-2020 assumed 100% savings due to economies of scale (elimination of line rentals). Increase at 2.5% afterwards.

No Additional O&M.

- (2) Depreciation - Pre-2022 based on actual depreciation. Post-2022 based on depreciation rate plus same rate on half of CAPX.
- (3) Line 6.
- (4) Line 18 + line 16.
- (5) Line 18.
- (6) Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry -0.05% of revenues.
- (8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 28.
- (11) Final year shown, line 30.
- (12) Final year shown, line 30.
- (13) Developed on Market Multiples EXHIBIT 18.

Terms:

CAPX - Capital Expenditures
 CIP - Capital improvement plan
 Dep - Depreciation expense
 GROSS PPE - GROSS Property, plant and equipment
 IOU - Investor owned utility
 MUNI - Large regional municipally owned utility
 NET PPE - NET Property, plant and equipment

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Actual			Budget	Estimated	Estimated
	2019	2020	2021	Year 0	Year 1	Year 2
1. OPERATING REVENUES (1)						
2. Charges for services	3,777,696	3,885,852	4,132,883	3,762,000	3,769,089	3,776,165
3. Other operating revenue	5,112	149,145	323,944	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	2,978,331	3,280,695	4,020,457	3,298,167	3,380,621	3,465,137
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(83,100)	(85,178)	(87,307)
12. LESS: EOS - Professional Services	0	0	0	(127,500)	(130,688)	(133,955)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	0	0	0	0	31,334	31,368
16. Operating Expenses Before Depreciation	2,978,331	3,280,695	4,020,457	3,087,567	3,196,090	3,275,243
17. Depreciation (2)	0	0	0	2,806	159,948	162,080
18. Total Operating Expenses	2,978,331	3,280,695	4,020,457	3,090,373	3,356,038	3,437,323
19. Operating Income	804,477	754,302	436,370	673,627	415,051	340,842
20. Revenues (3)	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
21. EBITDA (4)	804,477	754,302	436,370	676,433	574,999	502,922
22. EBIT (5)	804,477	754,302	436,370	673,627	415,051	340,842
23. EBIT	804,477	754,302	436,370	673,627	415,051	340,842
24. (-) Income Taxes	0	0	0	194,611	119,908	98,469
25. Debt Free Net Income	804,477	754,302	436,370	479,016	295,143	242,373
26. (+) Depreciation & Amortization	0	0	0	2,806	159,948	162,080
27. (-) Capital Expenditures (6)	579,500	260,806	352,500	501,000	155,893	157,971
28. (-) Changes in Working Capital (7)	(1,891)	(2,017)	(2,228)	(1,882)	(1,886)	(1,889)
29. Debt Free Net Cash Flow	\$226,868	\$495,513	\$86,098	(\$17,296)	\$301,083	\$248,371
30. PV Time Period (mid-year)				(0.5)	0.5	1.5
31. Present Value Factor: 7.90% (8)					0.9627	0.8922
32. Present Value Debt Free Net Cash Flow					\$289,853	\$221,597
					1	2
33. Present Value Factor: 9.80% (9)					0.9543	0.8692
34. Present Value Debt Free Net Cash Flow					\$287,324	\$215,884
					1	2
35. Present Value Factor: 7.70% (8)					0.9636	0.8947
36. Present Value Debt Free Net Cash Flow					\$290,124	\$222,218
					1	2
37. Present Value Factor: 9.60% (9)					0.9552	0.8715
38. Present Value Debt Free Net Cash Flow					\$287,595	\$216,455

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
1. OPERATING REVENUES (1)						
2. Charges for services	3,790,317	4,413,183	4,429,571	4,445,960	4,685,531	4,702,867
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	606,451	0	0	222,298	0	141,086
6. Total Operating Revenues	4,398,768	4,415,183	4,431,571	4,670,258	4,687,531	4,845,953
7. Rate Increase	16%			5%		3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	3,551,765	3,640,559	3,731,573	3,824,863	3,920,484	4,018,496
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(89,490)	(91,727)	(94,020)	(96,371)	(98,780)	(101,249)
12. LESS: EOS - Professional Services	(137,304)	(140,736)	(144,255)	(147,861)	(151,557)	(155,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	31,403	34,928	35,015	35,103	36,455	36,547
16. Operating Expenses Before Depreciation	3,356,375	3,443,024	3,528,314	3,615,734	3,706,602	3,798,448
17. Depreciation (2)	164,240	166,429	168,647	170,895	173,172	175,480
18. Total Operating Expenses	3,520,615	3,609,453	3,696,961	3,786,629	3,879,774	3,973,928
19. Operating Income	878,153	805,730	734,610	883,629	807,757	872,025
20. Revenues (3)	4,398,768	4,415,183	4,431,571	4,670,258	4,687,531	4,845,953
21. EBITDA (4)	1,042,393	972,159	903,257	1,054,524	980,929	1,047,505
22. EBIT (5)	878,153	805,730	734,610	883,629	807,757	872,025
23. EBIT	878,153	805,730	734,610	883,629	807,757	872,025
24. (-) Income Taxes	253,698	232,775	212,229	255,280	233,361	251,928
25. Debt Free Net Income	624,455	572,955	522,381	628,349	574,396	620,097
26. (+) Depreciation & Amortization	164,240	166,429	168,647	170,895	173,172	175,480
27. (-) Capital Expenditures (6)	160,077	162,210	164,372	166,563	168,783	171,032
28. (-) Changes in Working Capital (7)	(2,199)	(2,208)	(2,216)	(2,335)	(2,344)	(2,423)
29. Debt Free Net Cash Flow	\$630,817	\$579,381	\$528,872	\$635,016	\$581,129	\$626,968
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 7.90% (8)	0.8269	0.7663	0.7102	0.6582	0.6100	0.5654
32. Present Value Debt Free Net Cash Flow	\$521,623	\$443,980	\$375,605	\$417,968	\$354,489	\$354,488
	3	4	5	6	7	8
33. Present Value Factor: 9.80% (9)	0.7916	0.7209	0.6566	0.5980	0.5446	0.4960
34. Present Value Debt Free Net Cash Flow	\$499,355	\$417,676	\$347,257	\$379,740	\$316,483	\$310,976
	3	4	5	6	7	8
35. Present Value Factor: 7.70% (8)	0.8307	0.7713	0.7162	0.6650	0.6174	0.5733
36. Present Value Debt Free Net Cash Flow	\$524,020	\$446,877	\$378,778	\$422,286	\$358,789	\$359,441
	3	4	5	6	7	8
37. Present Value Factor: 9.60% (9)	0.7952	0.7255	0.6620	0.6040	0.5511	0.5028
38. Present Value Debt Free Net Cash Flow	\$501,626	\$420,341	\$350,113	\$383,550	\$320,260	\$315,240

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2031	Estimated Year 10 2032	Estimated Year 11 2033	Estimated Year 12 2034	Estimated Year 13 2035	Estimated Year 14 2036
1. OPERATING REVENUES (1)						
2. Charges for services	4,861,876	4,879,865	5,069,348	5,088,104	5,260,138	5,279,601
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	170,795	0	152,643	0	184,786
6. Total Operating Revenues	4,863,876	5,052,660	5,071,348	5,242,747	5,262,138	5,466,387
7. Rate Increase		3%		3%		3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,118,959	4,221,933	4,327,481	4,435,668	4,546,560	4,660,224
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(103,781)	(106,375)	(109,034)	(111,760)	(114,554)	(117,418)
12. LESS: EOS - Professional Services	(159,230)	(163,211)	(167,291)	(171,473)	(175,760)	(180,154)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	37,441	37,537	38,605	38,705	39,673	39,777
16. Operating Expenses Before Depreciation	3,893,389	3,989,884	4,089,760	4,191,139	4,295,918	4,402,428
17. Depreciation (2)	177,819	180,189	182,591	185,025	187,491	189,989
18. Total Operating Expenses	4,071,208	4,170,073	4,272,352	4,376,164	4,483,409	4,592,417
19. Operating Income	792,668	882,587	798,996	866,583	778,729	873,970
20. Revenues (3)	4,863,876	5,052,660	5,071,348	5,242,747	5,262,138	5,466,387
21. EBITDA (4)	970,487	1,062,776	981,588	1,051,608	966,220	1,063,959
22. EBIT (5)	792,668	882,587	798,996	866,583	778,729	873,970
23. EBIT	792,668	882,587	798,996	866,583	778,729	873,970
24. (-) Income Taxes	229,002	254,979	230,830	250,356	224,975	252,490
25. Debt Free Net Income	563,666	627,608	568,166	616,227	553,754	621,480
26. (+) Depreciation & Amortization	177,819	180,189	182,591	185,025	187,491	189,989
27. (-) Capital Expenditures (6)	173,312	175,622	177,962	180,334	182,738	185,173
28. (-) Changes in Working Capital (7)	(2,432)	(2,526)	(2,536)	(2,621)	(2,631)	(2,733)
29. Debt Free Net Cash Flow	\$570,605	\$634,702	\$575,331	\$623,539	\$561,138	\$629,029
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 7.90% (8)	0.5240	0.4856	0.4501	0.4171	0.3866	0.3583
32. Present Value Debt Free Net Cash Flow	\$298,997	\$308,211	\$258,957	\$260,078	\$216,936	\$225,381
	9	10	11	12	13	14
33. Present Value Factor: 9.80% (9)	0.4517	0.4114	0.3747	0.3413	0.3108	0.2831
34. Present Value Debt Free Net Cash Flow	\$257,742	\$261,116	\$215,577	\$212,814	\$174,402	\$178,078
	9	10	11	12	13	14
35. Present Value Factor: 7.70% (8)	0.5323	0.4943	0.4589	0.4261	0.3956	0.3674
36. Present Value Debt Free Net Cash Flow	\$303,733	\$313,733	\$264,019	\$265,690	\$221,986	\$231,105
	9	10	11	12	13	14
37. Present Value Factor: 9.60% (9)	0.4588	0.4186	0.3819	0.3485	0.3180	0.2901
38. Present Value Debt Free Net Cash Flow	\$261,794	\$265,686	\$219,719	\$217,303	\$178,442	\$182,481

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 2037	Estimated Year 16 2038	Estimated Year 17 2039	Estimated Year 18 2040	Estimated Year 19 2041	Estimated Year 20 2042
1. OPERATING REVENUES (1)						
2. Charges for services	5,484,605	5,504,898	5,718,650	5,739,809	5,962,683	5,984,745
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	192,671	0	200,893	0	209,466
6. Total Operating Revenues	5,486,605	5,699,569	5,720,650	5,942,702	5,964,683	6,196,211
7. Rate Increase		3%		3%		3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,776,729	4,896,147	5,018,551	5,144,015	5,272,615	5,404,431
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(120,354)	(123,362)	(126,446)	(129,608)	(132,848)	(136,169)
12. LESS: EOS - Professional Services	(184,658)	(189,274)	(194,006)	(198,856)	(203,828)	(208,924)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	40,932	41,040	42,245	42,357	43,614	43,731
16. Operating Expenses Before Depreciation	4,512,650	4,624,551	4,740,343	4,857,908	4,979,554	5,103,069
17. Depreciation (2)	192,521	195,087	197,687	200,322	202,992	205,698
18. Total Operating Expenses	4,705,171	4,819,638	4,938,030	5,058,230	5,182,546	5,308,767
19. Operating Income	781,434	879,931	782,620	884,472	782,137	887,444
20. Revenues (3)	5,486,605	5,699,569	5,720,650	5,942,702	5,964,683	6,196,211
21. EBITDA (4)	973,955	1,075,018	980,307	1,084,794	985,129	1,093,142
22. EBIT (5)	781,434	879,931	782,620	884,472	782,137	887,444
23. EBIT	781,434	879,931	782,620	884,472	782,137	887,444
24. (-) Income Taxes	225,756	254,212	226,099	255,524	225,959	256,383
25. Debt Free Net Income	555,678	625,719	556,521	628,948	556,178	631,061
26. (+) Depreciation & Amortization	192,521	195,087	197,687	200,322	202,992	205,698
27. (-) Capital Expenditures (6)	187,641	190,142	192,676	195,244	197,847	200,484
28. (-) Changes in Working Capital (7)	(2,743)	(2,850)	(2,860)	(2,971)	(2,982)	(3,098)
29. Debt Free Net Cash Flow	\$563,302	\$633,514	\$564,392	\$636,998	\$564,306	\$639,373
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 7.90% (8)	0.3320	0.3077	0.2852	0.2643	0.2450	0.2270
32. Present Value Debt Free Net Cash Flow	\$187,016	\$194,932	\$160,965	\$168,358	\$138,255	\$145,138
	15	16	17	18	19	20
33. Present Value Factor: 9.80% (9)	0.2578	0.2348	0.2138	0.1947	0.1774	0.1615
34. Present Value Debt Free Net Cash Flow	\$145,219	\$148,749	\$120,667	\$124,023	\$100,108	\$103,259
	15	16	17	18	19	20
35. Present Value Factor: 7.70% (8)	0.3411	0.3167	0.2941	0.2730	0.2535	0.2354
36. Present Value Debt Free Net Cash Flow	\$192,142	\$200,634	\$165,988	\$173,900	\$143,052	\$150,508
	15	16	17	18	19	20
37. Present Value Factor: 9.60% (9)	0.2647	0.2415	0.2204	0.2011	0.1834	0.1674
38. Present Value Debt Free Net Cash Flow	\$149,106	\$152,994	\$124,392	\$128,100	\$103,494	\$107,031

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 7.90%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$639,373
Divided by Capitalization Factor (8)	<u>7.90%</u>
20th Year Terminal Value	8,093,330
20th Year Present Value Factor (11)	<u>0.2270</u>
Present Value of Terminal Value	1,837,186
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>5,542,825</u>
Indicated Value	<u><u>\$7,380,011</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.90%			
		Multiples (13)	Terminal Value
Projected EBIT	\$887,444	25.9	\$22,984,803
Projected EBITDA	1,093,142	16.4	<u>17,927,528</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,596,429
20th Year Present Value Factor (11)			<u>0.2270</u>
Present Value of Terminal Value			4,448,389
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>5,542,825</u>
Indicated Value			<u><u>\$9,991,215</u></u>

DCF With Capitalization of Terminal Value Model @ 9.80%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$639,373
Divided by Capitalization Factor (9)	<u>9.80%</u>
20th Year Terminal Value	6,524,215
20th Year Present Value Factor (12)	<u>0.1615</u>
Present Value of Terminal Value	1,053,661
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>4,816,449</u>
Indicated Value	<u><u>\$5,870,110</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 9.80%			
		Multiples (13)	Terminal Value
Projected EBIT	\$887,444	25.9	\$22,984,803
Projected EBITDA	1,093,142	16.4	<u>17,927,528</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,596,429
20th Year Present Value Factor (12)			<u>0.1615</u>
Present Value of Terminal Value			3,164,823
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>4,816,449</u>
Indicated Value			<u><u>\$7,981,272</u></u>

DCF With Capitalization of Terminal Value Model @ 7.70%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$639,373
Divided by Capitalization Factor (8)	<u>7.70%</u>
20th Year Terminal Value	8,303,546
20th Year Present Value Factor (11)	<u>0.2270</u>
Present Value of Terminal Value	1,884,905
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>5,542,825</u>
Indicated Value	<u><u>\$7,427,730</u></u>

DCF With Capitalization of Terminal Value Model @ 9.60%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$639,373
Divided by Capitalization Factor (9)	<u>9.60%</u>
20th Year Terminal Value	6,660,136
20th Year Present Value Factor (12)	<u>0.1615</u>
Present Value of Terminal Value	1,075,612
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>4,816,449</u>
Indicated Value	<u><u>\$5,892,061</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or based on 2022 budget. Post-2022 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by IOU in 2023 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2022 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2022 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2022 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

Eliminated Expenses - Post-2020 assumed 100% savings due to economies of scale (elimination of line rentals). Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2023 assumed due to IOU purchase in 2023.

- (2) Depreciation - Pre-2022 based on actual depreciation. Post-2022 based on depreciation rate plus same rate on half of CAPX.
- (3) Line 6.
- (4) Line 19 + line 17.
- (5) Line 19.
- (6) Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry -0.05% of revenues.
- (8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (9) Discount rate is the current upper end of the IOU discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 29.
- (11) Final year shown, line 31.
- (12) Final year shown, line 33.
- (13) Developed on Market Multiples EXHIBIT 18.

Terms:

CAPX - Capital Expenditures
 CIP - Capital improvement plan
 Dep - Depreciation expense
 GROSS PPE - GROSS Property, plant and equipment
 IOU - Investor owned utility
 MUNI - Large regional municipally owned utility
 NET PPE - NET Property, plant and equipment

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Actual			Budget	Estimated	Estimated
	2019	2020	2021	Year 0	Year 1	Year 2
1. OPERATING REVENUES (1)						
2. Charges for services	3,777,696	3,885,852	4,132,883	3,762,000	3,769,089	3,776,165
3. Other operating revenue	5,112	149,145	323,944	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	2,978,331	3,280,695	4,020,457	3,298,167	3,380,621	3,465,137
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(83,100)	(85,178)	(87,307)
12. LESS: EOS - Professional Services	0	0	0	(127,500)	(130,688)	(133,955)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	2,978,331	3,280,695	4,020,457	3,087,567	3,164,756	3,243,875
16. Depreciation (2)	0	0	0	2,631	299,383	303,125
17. Total Operating Expenses	2,978,331	3,280,695	4,020,457	3,090,198	3,464,139	3,547,000
18. Operating Income	804,477	754,302	436,370	673,802	306,950	231,165
19. Revenues (3)	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
20. EBITDA (4)	804,477	754,302	436,370	676,433	606,333	534,290
21. EBIT (5)	804,477	754,302	436,370	673,802	306,950	231,165
22. EBIT	804,477	754,302	436,370	673,802	306,950	231,165
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	804,477	754,302	436,370	673,802	306,950	231,165
25. (+) Depreciation & Amortization	0	0	0	2,631	299,383	303,125
26. (-) Capital Expenditures (6)	579,500	260,806	352,500	501,000	291,894	295,541
27. (-) Changes in Working Capital (7)	(1,891)	(2,017)	(2,228)	(1,882)	(1,886)	(1,889)
28. Debt Free Net Cash Flow	\$226,868	\$495,513	\$86,098	\$177,315	\$316,324	\$240,638
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.98% (8)					1	2
31. Present Value Debt Free Net Cash Flow					0.9807	0.9431
					\$310,219	\$226,946
					1	2
32. Present Value Factor: 3.78% (9)					0.9816	0.9459
33. Present Value Debt Free Net Cash Flow					\$310,504	\$227,619

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2025	Estimated Year 4 2026	Estimated Year 5 2027	Estimated Year 6 2028	Estimated Year 7 2029	Estimated Year 8 2030
1. OPERATING REVENUES (1)						
2. Charges for services	3,790,317	4,565,362	4,582,315	4,829,233	4,847,101	4,865,035
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	758,063	0	229,116	0	0	243,252
6. Total Operating Revenues	4,550,380	4,567,362	4,813,431	4,831,233	4,849,101	5,110,287
7. Rate Increase	20%		5%			5%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	3,551,765	3,640,559	3,731,573	3,824,863	3,920,484	4,018,496
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(89,490)	(91,727)	(94,020)	(96,371)	(98,780)	(101,249)
12. LESS: EOS - Professional Services	(137,304)	(140,736)	(144,255)	(147,861)	(151,557)	(155,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	3,324,972	3,408,096	3,493,299	3,580,631	3,670,147	3,761,901
16. Depreciation (2)	306,911	310,746	314,630	318,560	322,541	326,571
17. Total Operating Expenses	3,631,883	3,718,842	3,807,928	3,899,191	3,992,688	4,088,472
18. Operating Income	918,497	848,520	1,005,503	932,042	856,413	1,021,815
19. Revenues (3)	4,550,380	4,567,362	4,813,431	4,831,233	4,849,101	5,110,287
20. EBITDA (4)	1,225,408	1,159,266	1,320,132	1,250,602	1,178,954	1,348,386
21. EBIT (5)	918,497	848,520	1,005,503	932,042	856,413	1,021,815
22. EBIT	918,497	848,520	1,005,503	932,042	856,413	1,021,815
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	918,497	848,520	1,005,503	932,042	856,413	1,021,815
25. (+) Depreciation & Amortization	306,911	310,746	314,630	318,560	322,541	326,571
26. (-) Capital Expenditures (6)	299,234	302,973	306,758	310,591	314,472	318,402
27. (-) Changes in Working Capital (7)	(2,275)	(2,284)	(2,407)	(2,416)	(2,425)	(2,555)
28. Debt Free Net Cash Flow	\$928,449	\$858,576	\$1,015,781	\$942,426	\$866,907	\$1,032,540
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
	3	4	5	6	7	8
30. Present Value Factor: 3.98% (8)	0.9070	0.8723	0.8389	0.8068	0.7759	0.7462
31. Present Value Debt Free Net Cash Flow	\$842,103	\$748,936	\$852,139	\$760,350	\$672,633	\$770,481
	3	4	5	6	7	8
32. Present Value Factor: 3.78% (9)	0.9114	0.8782	0.8462	0.8154	0.7857	0.7571
33. Present Value Debt Free Net Cash Flow	\$846,189	\$754,002	\$859,554	\$768,455	\$681,129	\$781,736

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14
	2031	2032	2033	2034	2035	2036
1. OPERATING REVENUES (1)						
2. Charges for services	5,127,188	5,146,158	5,165,199	5,391,683	5,411,632	5,431,655
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	206,608	0	0	217,266
6. Total Operating Revenues	5,129,188	5,148,158	5,373,807	5,393,683	5,413,632	5,650,921
7. Rate Increase			4%			4%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,118,959	4,221,933	4,327,481	4,435,668	4,546,560	4,660,224
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(103,781)	(106,375)	(109,034)	(111,760)	(114,554)	(117,418)
12. LESS: EOS - Professional Services	(159,230)	(163,211)	(167,291)	(171,473)	(175,760)	(180,154)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	3,855,948	3,952,347	4,051,155	4,152,434	4,256,245	4,362,651
16. Depreciation (2)	330,652	334,783	338,967	343,202	347,490	351,832
17. Total Operating Expenses	4,186,600	4,287,130	4,390,122	4,495,636	4,603,735	4,714,483
18. Operating Income	942,588	861,028	983,685	898,047	809,897	936,438
19. Revenues (3)	5,129,188	5,148,158	5,373,807	5,393,683	5,413,632	5,650,921
20. EBITDA (4)	1,273,240	1,195,811	1,322,652	1,241,249	1,157,387	1,288,270
21. EBIT (5)	942,588	861,028	983,685	898,047	809,897	936,438
22. EBIT	942,588	861,028	983,685	898,047	809,897	936,438
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	942,588	861,028	983,685	898,047	809,897	936,438
25. (+) Depreciation & Amortization	330,652	334,783	338,967	343,202	347,490	351,832
26. (-) Capital Expenditures (6)	322,380	326,408	330,487	334,616	338,797	343,030
27. (-) Changes in Working Capital (7)	(2,565)	(2,574)	(2,687)	(2,697)	(2,707)	(2,825)
28. Debt Free Net Cash Flow	\$953,425	\$871,977	\$994,851	\$909,329	\$821,297	\$948,065
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
	9	10	11	12	13	14
30. Present Value Factor: 3.98% (8)	0.7177	0.6902	0.6638	0.6384	0.6139	0.5904
31. Present Value Debt Free Net Cash Flow	\$684,273	\$601,839	\$660,382	\$580,516	\$504,194	\$559,738
	9	10	11	12	13	14
32. Present Value Factor: 3.78% (9)	0.7295	0.7029	0.6773	0.6527	0.6289	0.6060
33. Present Value Debt Free Net Cash Flow	\$695,523	\$612,913	\$673,813	\$593,519	\$516,513	\$574,527

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
	2037	2038	2039	2040	2041	2042
1. OPERATING REVENUES (1)						
2. Charges for services	5,669,822	5,690,801	5,940,331	5,962,310	6,163,902	6,186,708
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	227,632	0	178,869	0	197,975
6. Total Operating Revenues	5,671,822	5,920,433	5,942,331	6,143,179	6,165,902	6,386,683
7. Rate Increase		4%		3%		3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,776,729	4,896,147	5,018,551	5,144,015	5,272,615	5,404,431
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(120,354)	(123,362)	(126,446)	(129,608)	(132,848)	(136,169)
12. LESS: EOS - Professional Services	(184,658)	(189,274)	(194,006)	(198,856)	(203,828)	(208,924)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. Operating Expenses Before Depreciation	4,471,718	4,583,511	4,698,098	4,815,551	4,935,940	5,059,338
16. Depreciation (2)	356,228	360,679	365,185	369,749	374,369	379,047
17. Total Operating Expenses	4,827,946	4,944,189	5,063,284	5,185,300	5,310,309	5,438,385
18. Operating Income	843,876	976,244	879,047	957,879	855,593	948,298
19. Revenues (3)	5,671,822	5,920,433	5,942,331	6,143,179	6,165,902	6,386,683
20. EBITDA (4)	1,200,104	1,336,922	1,244,233	1,327,628	1,229,962	1,327,345
21. EBIT (5)	843,876	976,244	879,047	957,879	855,593	948,298
22. EBIT	843,876	976,244	879,047	957,879	855,593	948,298
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	843,876	976,244	879,047	957,879	855,593	948,298
25. (+) Depreciation & Amortization	356,228	360,679	365,185	369,749	374,369	379,047
26. (-) Capital Expenditures (6)	347,316	351,656	356,050	360,499	365,003	369,564
27. (-) Changes in Working Capital (7)	(2,836)	(2,960)	(2,971)	(3,072)	(3,083)	(3,193)
28. Debt Free Net Cash Flow	\$855,624	\$988,227	\$891,154	\$970,201	\$868,042	\$960,974
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
	15	16	17	18	19	20
30. Present Value Factor: 3.98% (8)	0.5678	0.5461	0.5252	0.5051	0.4858	0.4672
31. Present Value Debt Free Net Cash Flow	\$485,823	\$539,671	\$468,034	\$490,048	\$421,695	\$448,967
	15	16	17	18	19	20
32. Present Value Factor: 3.78% (9)	0.5839	0.5626	0.5422	0.5224	0.5034	0.4850
33. Present Value Debt Free Net Cash Flow	\$499,599	\$555,976	\$483,184	\$506,833	\$436,973	\$466,073

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 3.98%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$960,974
Divided by Capitalization Factor (8)	<u>3.98%</u>
20th Year Terminal Value	24,145,083
20th Year Present Value Factor (11)	<u>0.4672</u>
Present Value of Terminal Value	11,280,583
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>11,628,987</u>
Indicated Value	<u><u>\$22,909,570</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.98%			
		Multiples (13)	Terminal Value
Projected EBIT	\$948,298	25.9	\$24,560,924
Projected EBITDA	1,327,345	16.4	<u>21,768,457</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			22,689,971
20th Year Present Value Factor (11)			<u>0.4672</u>
Present Value of Terminal Value			10,600,754
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>11,628,987</u>
Indicated Value			<u><u>\$22,229,742</u></u>

DCF With Capitalization of Terminal Value Model @ 3.78%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$960,974
Divided by Capitalization Factor (9)	<u>3.78%</u>
20th Year Terminal Value	25,422,600
20th Year Present Value Factor (12)	<u>0.4672</u>
Present Value of Terminal Value	11,877,439
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>11,628,987</u>
Indicated Value	<u><u>\$23,506,426</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.78%			
		Multiples (13)	Terminal Value
Projected EBIT	\$948,298	25.9	\$24,560,924
Projected EBITDA	1,327,345	16.4	<u>21,768,457</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			22,689,971
20th Year Present Value Factor (12)			<u>0.4672</u>
Present Value of Terminal Value			10,600,754
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>11,628,987</u>
Indicated Value			<u><u>\$22,229,742</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or based on 2022 budget. Post-2022 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by MUNI in 2023 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2022 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2022 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2022 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

Eliminated Expenses - Post-2020 assumed 100% savings due to economies of scale (elimination of line rentals). Increase at 2.5% afterwards.

No Additional O&M.

- (2) Depreciation - Pre-2022 based on actual depreciation. Post-2022 based on depreciation rate plus same rate on half of CAPX.
- (3) Line 6.
- (4) Line 18 + line 16.
- (5) Line 18.
- (6) Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.47% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry -0.05% of revenues.
- (8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 28.
- (11) Final year shown, line 30.
- (12) Final year shown, line 30.
- (13) Developed on Market Multiples EXHIBIT 18.

Terms:

CAPX - Capital Expenditures
 CIP - Capital improvement plan
 Dep - Depreciation expense
 GROSS PPE - GROSS Property, plant and equipment
 IOU - Investor owned utility
 MUNI - Large regional municipally owned utility
 NET PPE - NET Property, plant and equipment

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Actual		Budget		Estimated	
	2019	2020	2021	Year 0 2022	Year 1 2023	Year 2 2024
1. OPERATING REVENUES (1)						
2. Charges for services	3,777,696	3,885,852	4,132,883	3,762,000	3,769,089	3,776,165
3. Other operating revenue	5,112	149,145	323,944	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	2,978,331	3,280,695	4,020,457	3,298,167	3,380,621	3,465,137
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	(83,100)	(85,178)	(87,307)
12. LESS: EOS - Professional Services	0	0	0	(127,500)	(130,688)	(133,955)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	0	0	0	0	49,852	49,881
16. Operating Expenses Before Depreciation	2,978,331	3,280,695	4,020,457	3,087,567	3,214,608	3,293,756
17. Depreciation (2)	0	0	0	2,631	299,383	303,125
18. Total Operating Expenses	2,978,331	3,280,695	4,020,457	3,090,198	3,513,991	3,596,881
19. Operating Income	804,477	754,302	436,370	673,802	257,098	181,284
20. Revenues (3)	3,782,808	4,034,997	4,456,827	3,764,000	3,771,089	3,778,165
21. EBITDA (4)	804,477	754,302	436,370	676,433	556,481	484,409
22. EBIT (5)	804,477	754,302	436,370	673,802	257,098	181,284
23. EBIT	804,477	754,302	436,370	673,802	257,098	181,284
24. (-) Income Taxes	0	0	0	194,661	74,276	52,373
25. Debt Free Net Income	804,477	754,302	436,370	479,141	182,822	128,911
26. (+) Depreciation & Amortization	0	0	0	2,631	299,383	303,125
27. (-) Capital Expenditures (6)	579,500	260,806	352,500	501,000	291,894	295,541
28. (-) Changes in Working Capital (7)	(1,891)	(2,017)	(2,228)	(1,882)	(1,886)	(1,889)
29. Debt Free Net Cash Flow	\$226,868	\$495,513	\$86,098	(\$17,346)	\$192,196	\$138,384
30. PV Time Period (mid-year)				(0.5)	0.5	1.5
31. Present Value Factor: 7.90% (8)					0.9627	0.8922
32. Present Value Debt Free Net Cash Flow					\$185,027	\$123,466
					1	2
33. Present Value Factor: 9.80% (9)					0.9543	0.8692
34. Present Value Debt Free Net Cash Flow					\$183,413	\$120,283
					1	2
35. Present Value Factor: 7.70% (8)					0.9636	0.8947
36. Present Value Debt Free Net Cash Flow					\$185,200	\$123,812
					1	2
37. Present Value Factor: 9.60% (9)					0.9552	0.8715
38. Present Value Debt Free Net Cash Flow					\$183,586	\$120,602

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2025	Estimated Year 4 2026	Estimated Year 5 2027	Estimated Year 6 2028	Estimated Year 7 2029	Estimated Year 8 2030
1. OPERATING REVENUES (1)						
2. Charges for services	3,790,317	6,087,149	6,109,753	6,377,654	6,401,251	6,424,935
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	2,274,190	0	244,390	0	0	192,748
6. Total Operating Revenues	6,066,507	6,089,149	6,356,143	6,379,654	6,403,251	6,619,683
7. Rate Increase	60%		4%			3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	3,551,765	3,640,559	3,731,573	3,824,863	3,920,484	4,018,496
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(89,490)	(91,727)	(94,020)	(96,371)	(98,780)	(101,249)
12. LESS: EOS - Professional Services	(137,304)	(140,736)	(144,255)	(147,861)	(151,557)	(155,346)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	49,911	62,920	63,038	64,546	64,668	64,791
16. Operating Expenses Before Depreciation	3,374,883	3,471,016	3,556,337	3,645,177	3,734,815	3,826,692
17. Depreciation (2)	306,911	310,746	314,630	318,560	322,541	326,571
18. Total Operating Expenses	3,681,794	3,781,762	3,870,966	3,963,737	4,057,356	4,153,263
19. Operating Income	2,384,713	2,307,387	2,485,177	2,415,917	2,345,895	2,466,420
20. Revenues (3)	6,066,507	6,089,149	6,356,143	6,379,654	6,403,251	6,619,683
21. EBITDA (4)	2,691,624	2,618,133	2,799,806	2,734,477	2,668,436	2,792,991
22. EBIT (5)	2,384,713	2,307,387	2,485,177	2,415,917	2,345,895	2,466,420
23. EBIT	2,384,713	2,307,387	2,485,177	2,415,917	2,345,895	2,466,420
24. (-) Income Taxes	688,943	666,604	717,968	697,958	677,729	712,549
25. Debt Free Net Income	1,695,770	1,640,783	1,767,209	1,717,959	1,668,166	1,753,871
26. (+) Depreciation & Amortization	306,911	310,746	314,630	318,560	322,541	326,571
27. (-) Capital Expenditures (6)	299,234	302,973	306,758	310,591	314,472	318,402
28. (-) Changes in Working Capital (7)	(3,033)	(3,045)	(3,178)	(3,190)	(3,202)	(3,310)
29. Debt Free Net Cash Flow	\$1,706,480	\$1,651,600	\$1,778,258	\$1,729,118	\$1,679,437	\$1,765,350
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 7.90% (8)	0.8269	0.7663	0.7102	0.6582	0.6100	0.5654
32. Present Value Debt Free Net Cash Flow	\$1,411,089	\$1,265,621	\$1,262,919	\$1,138,105	\$1,024,456	\$998,129
	3	4	5	6	7	8
33. Present Value Factor: 9.80% (9)	0.7916	0.7209	0.6566	0.5980	0.5446	0.4960
34. Present Value Debt Free Net Cash Flow	\$1,350,850	\$1,190,639	\$1,167,604	\$1,034,012	\$914,621	\$875,614
	3	4	5	6	7	8
35. Present Value Factor: 7.70% (8)	0.8307	0.7713	0.7162	0.6650	0.6174	0.5733
36. Present Value Debt Free Net Cash Flow	\$1,417,573	\$1,273,879	\$1,273,589	\$1,149,863	\$1,036,884	\$1,012,075
	3	4	5	6	7	8
37. Present Value Factor: 9.60% (9)	0.7952	0.7255	0.6620	0.6040	0.5511	0.5028
38. Present Value Debt Free Net Cash Flow	\$1,356,993	\$1,198,236	\$1,177,207	\$1,044,387	\$925,538	\$887,618

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2031	Estimated Year 10 2032	Estimated Year 11 2033	Estimated Year 12 2034	Estimated Year 13 2035	Estimated Year 14 2036
1. OPERATING REVENUES (1)						
2. Charges for services	6,642,169	6,666,745	6,691,412	6,984,817	7,010,661	7,036,600
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	267,656	0	0	211,098
6. Total Operating Revenues	6,644,169	6,668,745	6,961,068	6,986,817	7,012,661	7,249,698
7. Rate Increase			4%			3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,118,959	4,221,933	4,327,481	4,435,668	4,546,560	4,660,224
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(103,781)	(106,375)	(109,034)	(111,760)	(114,554)	(117,418)
12. LESS: EOS - Professional Services	(159,230)	(163,211)	(167,291)	(171,473)	(175,760)	(180,154)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	66,011	66,138	66,266	67,917	68,052	68,186
16. Operating Expenses Before Depreciation	3,921,959	4,018,485	4,117,421	4,220,351	4,324,297	4,430,837
17. Depreciation (2)	330,652	334,783	338,967	343,202	347,490	351,832
18. Total Operating Expenses	4,252,611	4,353,268	4,456,388	4,563,553	4,671,787	4,782,669
19. Operating Income	2,391,558	2,315,477	2,504,680	2,423,264	2,340,874	2,467,029
20. Revenues (3)	6,644,169	6,668,745	6,961,068	6,986,817	7,012,661	7,249,698
21. EBITDA (4)	2,722,210	2,650,260	2,843,647	2,766,466	2,688,364	2,818,861
22. EBIT (5)	2,391,558	2,315,477	2,504,680	2,423,264	2,340,874	2,467,029
23. EBIT	2,391,558	2,315,477	2,504,680	2,423,264	2,340,874	2,467,029
24. (-) Income Taxes	690,921	668,941	723,602	700,081	676,278	712,725
25. Debt Free Net Income	1,700,637	1,646,536	1,781,078	1,723,183	1,664,596	1,754,304
26. (+) Depreciation & Amortization	330,652	334,783	338,967	343,202	347,490	351,832
27. (-) Capital Expenditures (6)	322,380	326,408	330,487	334,616	338,797	343,030
28. (-) Changes in Working Capital (7)	(3,322)	(3,334)	(3,481)	(3,493)	(3,506)	(3,625)
29. Debt Free Net Cash Flow	\$1,712,231	\$1,658,246	\$1,793,038	\$1,735,262	\$1,676,795	\$1,766,731
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 7.90% (8)	0.5240	0.4856	0.4501	0.4171	0.3866	0.3583
32. Present Value Debt Free Net Cash Flow	\$897,209	\$805,244	\$807,046	\$723,778	\$648,249	\$633,020
	9	10	11	12	13	14
33. Present Value Factor: 9.80% (9)	0.4517	0.4114	0.3747	0.3413	0.3108	0.2831
34. Present Value Debt Free Net Cash Flow	\$773,415	\$682,202	\$671,851	\$592,245	\$521,148	\$500,161
	9	10	11	12	13	14
35. Present Value Factor: 7.70% (8)	0.5323	0.4943	0.4589	0.4261	0.3956	0.3674
36. Present Value Debt Free Net Cash Flow	\$911,421	\$819,671	\$822,825	\$739,395	\$663,340	\$649,097
	9	10	11	12	13	14
37. Present Value Factor: 9.60% (9)	0.4588	0.4186	0.3819	0.3485	0.3180	0.2901
38. Present Value Debt Free Net Cash Flow	\$785,572	\$694,142	\$684,761	\$604,739	\$533,221	\$512,529

See last page of this EXHIBIT for notes and assumptions.

Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 2037	Estimated Year 16 2038	Estimated Year 17 2039	Estimated Year 18 2040	Estimated Year 19 2041	Estimated Year 20 2042
1. OPERATING REVENUES (1)						
2. Charges for services	7,274,515	7,301,430	7,548,299	7,576,228	7,794,366	7,823,206
3. Other operating revenue	2,000	2,000	2,000	2,000	2,000	2,000
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	219,043	0	189,406	0	203,403
6. Total Operating Revenues	7,276,515	7,522,473	7,550,299	7,767,634	7,796,366	8,028,609
7. Rate Increase		3%		3%		3%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	4,776,729	4,896,147	5,018,551	5,144,015	5,272,615	5,404,431
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(120,354)	(123,362)	(126,446)	(129,608)	(132,848)	(136,169)
12. LESS: EOS - Professional Services	(184,658)	(189,274)	(194,006)	(198,856)	(203,828)	(208,924)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	69,523	69,662	71,049	71,194	72,418	72,567
16. Operating Expenses Before Depreciation	4,541,241	4,653,173	4,769,147	4,886,745	5,008,358	5,131,905
17. Depreciation (2)	356,228	360,679	365,185	369,749	374,369	379,047
18. Total Operating Expenses	4,897,469	5,013,851	5,134,333	5,256,494	5,382,727	5,510,952
19. Operating Income	2,379,046	2,508,622	2,415,966	2,511,140	2,413,639	2,517,657
20. Revenues (3)	7,276,515	7,522,473	7,550,299	7,767,634	7,796,366	8,028,609
21. EBITDA (4)	2,735,274	2,869,300	2,781,152	2,880,889	2,788,008	2,896,704
22. EBIT (5)	2,379,046	2,508,622	2,415,966	2,511,140	2,413,639	2,517,657
23. EBIT	2,379,046	2,508,622	2,415,966	2,511,140	2,413,639	2,517,657
24. (-) Income Taxes	687,306	724,741	697,973	725,468	697,300	727,351
25. Debt Free Net Income	1,691,740	1,783,881	1,717,993	1,785,672	1,716,339	1,790,306
26. (+) Depreciation & Amortization	356,228	360,679	365,185	369,749	374,369	379,047
27. (-) Capital Expenditures (6)	347,316	351,656	356,050	360,499	365,003	369,564
28. (-) Changes in Working Capital (7)	(3,638)	(3,761)	(3,775)	(3,884)	(3,898)	(4,014)
29. Debt Free Net Cash Flow	\$1,704,291	\$1,796,665	\$1,730,904	\$1,798,806	\$1,729,604	\$1,803,803
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 7.90% (8)	0.3320	0.3077	0.2852	0.2643	0.2450	0.2270
32. Present Value Debt Free Net Cash Flow	\$565,824	\$552,834	\$493,654	\$475,424	\$423,753	\$409,463
	15	16	17	18	19	20
33. Present Value Factor: 9.80% (9)	0.2578	0.2348	0.2138	0.1947	0.1774	0.1615
34. Present Value Debt Free Net Cash Flow	\$439,366	\$421,857	\$370,067	\$350,228	\$306,832	\$291,314
	15	16	17	18	19	20
35. Present Value Factor: 7.70% (8)	0.3411	0.3167	0.2941	0.2730	0.2535	0.2354
36. Present Value Debt Free Net Cash Flow	\$581,334	\$569,004	\$509,059	\$491,074	\$438,455	\$424,615
	15	16	17	18	19	20
37. Present Value Factor: 9.60% (9)	0.2647	0.2415	0.2204	0.2011	0.1834	0.1674
38. Present Value Debt Free Net Cash Flow	\$451,126	\$433,895	\$381,491	\$361,740	\$317,209	\$301,957

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Brentwood Borough Wastewater System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 7.90%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,803,803
Divided by Capitalization Factor (8)	<u>7.90%</u>
20th Year Terminal Value	22,832,953
20th Year Present Value Factor (11)	<u>0.2270</u>
Present Value of Terminal Value	5,183,080
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>14,844,312</u>
Indicated Value	<u><u>\$20,027,392</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.90%			
		Multiples (13)	Terminal Value
Projected EBIT	\$2,517,657	25.9	\$65,207,322
Projected EBITDA	2,896,704	16.4	<u>47,505,945</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			53,347,399
20th Year Present Value Factor (11)			<u>0.2270</u>
Present Value of Terminal Value			12,109,860
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>14,844,312</u>
Indicated Value			<u><u>\$26,954,171</u></u>

DCF With Capitalization of Terminal Value Model @ 9.80%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,803,803
Divided by Capitalization Factor (9)	<u>9.80%</u>
20th Year Terminal Value	18,406,156
20th Year Present Value Factor (12)	<u>0.1615</u>
Present Value of Terminal Value	2,972,594
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>12,757,723</u>
Indicated Value	<u><u>\$15,730,317</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 9.80%			
		Multiples (13)	Terminal Value
Projected EBIT	\$2,517,657	25.9	\$65,207,322
Projected EBITDA	2,896,704	16.4	<u>47,505,945</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			53,347,399
20th Year Present Value Factor (12)			<u>0.1615</u>
Present Value of Terminal Value			8,615,605
Present Value Debt Free Net			
Cash Flow for 20 Years			<u>12,757,723</u>
Indicated Value			<u><u>\$21,373,328</u></u>

DCF With Capitalization of Terminal Value Model @ 7.70%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,803,803
Divided by Capitalization Factor (8)	<u>7.70%</u>
20th Year Terminal Value	23,426,016
20th Year Present Value Factor (11)	<u>0.2270</u>
Present Value of Terminal Value	5,317,706
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>14,844,312</u>
Indicated Value	<u><u>\$20,162,018</u></u>

DCF With Capitalization of Terminal Value Model @ 9.60%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,803,803
Divided by Capitalization Factor (9)	<u>9.60%</u>
20th Year Terminal Value	18,789,617
20th Year Present Value Factor (12)	<u>0.1615</u>
Present Value of Terminal Value	3,034,523
Present Value Debt Free Net	
Cash Flow for 20 Years	<u>12,757,723</u>
Indicated Value	<u><u>\$15,792,246</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Brentwood Borough Wastewater System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2022 are actual or based on 2022 budget. Post-2022 based on customer growth (EDU) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Other (Rate Increase) - Assumed purchase by IOU in 2023 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2022 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2022 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2022 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

Eliminated Expenses - Post-2020 assumed 100% savings due to economies of scale (elimination of line rentals). Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2023 assumed due to IOU purchase in 2023.

- (2) Depreciation - Pre-2022 based on actual depreciation. Post-2022 based on depreciation rate plus same rate on half of CAPX.
- (3) Line 6.
- (4) Line 19 + line 17.
- (5) Line 19.
- (6) Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.47% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry -0.05% of revenues.
- (8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (9) Discount rate is the current upper end of the IOU discount rate. Capitalization rate (K) at 1/13/2023 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 29.
- (11) Final year shown, line 31.
- (12) Final year shown, line 33.
- (13) Developed on Market Multiples EXHIBIT 18.

Terms:

CAPX - Capital Expenditures

CIP - Capital improvement plan

Dep - Depreciation expense

GROSS PPE - GROSS Property, plant and equipment

IOU - Investor owned utility

MUNI - Large regional municipally owned utility

NET PPE - NET Property, plant and equipment

Brentwood Borough Wastewater System Assets
Summary of Income Approach Results and Conclusion

<u>Methods</u>	<u>Results</u>
Exhibit 15, page 5 (MUNI)	
DCF With Capitalization of Terminal Value Model @ 3.78%	\$23,506,426
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.78%	<u>22,229,742</u>
Indicated Value (Median)	<u><u>\$22,868,084</u></u>
Exhibit 16, page 5 (IOU)	
DCF With Capitalization of Terminal Value Model @ 7.70%	\$20,162,018
DCF With Capitalization of Terminal Value Model @ 9.60%	15,792,246
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.90%	26,954,171
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 9.80%	<u>21,373,328</u>
Indicated Value (Median)	<u><u>\$20,767,673</u></u>
Conclusion	
MUNI DCF	\$22,868,084
IOU DCF	<u>20,767,673</u>
Conclusion (Median)	<u><u>\$21,817,878</u></u>

Market Multiples Method
Brentwood Borough Wastewater System Assets
2022 Operations
Market Multiple Method

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
				(Col B × Col C)	(Col A × Col D)
Subject Company Statistic (1)		Comparison Group's Valuation Multiples 1/13/2023	Brentwood's Growth & Risk Adjustment	Brentwood's Risk Adjusted Valuation Multiples 1/13/2023	Brentwood's Market Multiples Valuation
Risk Adjusted Multiple					
1. <u>Brentwood Borough Wastewater System Assets</u>					
2. Investor Provided Capital	\$0	2.04	80.00%	1.63	NA
3. Gross PP&E	\$9,942,185	1.41	92.00%	1.30	12,924,841
4. Net PP&E	\$6,925,302	1.78	92.00%	1.64	11,357,495
5. Revenues	\$3,764,000	8.95	80.00%	7.16	26,950,240
6. EBITDA	\$676,433	20.48	80.00%	16.38	11,079,973
7. EBIT	\$673,627	32.42	80.00%	25.94	17,473,895
8. Customers	3,980	\$10,609	94.00%	\$9,972	39,688,560
9. Population	9,971	\$3,250	94.00%	\$3,055	30,461,405
10.					
11. Average					\$21,419,487

Conclusion of Market Multiple Method Valuation					
		<u>Low</u>	<u>High</u>		<u>Conclusion</u>
12. Capital Items		\$11,357,495	\$12,924,841		\$12,141,168
13. (Items 2-4)					
14. Income Statement Items		11,079,973	26,950,240		-
15. (Items 5 -7)					
16. Demographics Items		30,461,405	39,688,560		35,074,983
17. (Items 8-9)					
				Conclusion *	\$23,608,075

* - Conclusion based on weighting of 50% Capital Items and 50% Demographics Items

Market Multiples Method
Brentwood Borough Wastewater System Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2021		1/13/2023
	Gross PP&E (\$ Mill)	Net PP&E (\$ Mill)	Invest. Total Capital (\$ Mill)	12 Mos. Rev. (\$ Mill)	12 Mos. EBITDA (\$ Mill)	12 Mos. EBIT (\$ Mill)	Customers	Population	Enterprise Value (\$ Mill)
American States Water Co	\$2,340.189	\$1,736.437	\$1,403.833	\$482.785	\$178.337	\$137.115	287,500	1,000,000	\$4,225.097
American Water Works Company Inc	\$29,152.000	\$22,726.000	\$19,681.000	\$3,812.000	\$1,954.000	\$1,309.000	3,530,000	14,000,000	\$40,709.994
Artesian Resources Corp	\$830.607	\$660.160	\$373.901	\$96.607	\$42.852	\$30.575	100,640	326,700	\$753.142
California Water Service Group	\$4,422.312	\$2,987.612	\$2,408.066	\$818.820	\$247.047	\$130.651	547,600	2,000,000	\$4,464.618
Essential Utilities, Inc.	\$13,511.141	\$10,918.773	\$11,936.944	\$2,118.336	\$962.242	\$645.661	1,820,049	5,000,000	\$19,367.647
Middlesex Water Co	\$1,130.147	\$914.945	\$754.035	\$157.635	\$73.891	\$44.210	121,300	500,000	\$1,796.065
SJW Corp.	\$3,857.583	\$2,634.038	\$2,706.605	\$589.061	\$209.060	\$104.636	398,000	1,526,000	\$4,075.071
York Water Company (The)	\$523.869	\$418.560	\$329.581	\$58.684	\$32.734	\$22.925	73,144	204,000	\$773.577
Average	\$6,970.981	\$5,374.566	\$4,949.246	\$1,016.741	\$462.520	\$303.097	859,779	3,069,588	\$9,520.652
Max	\$29,152.000	\$22,726.000	\$19,681.000	\$3,812.000	\$1,954.000	\$1,309.000	3,530,000	14,000,000	\$40,709.994
Min	\$523.869	\$418.560	\$329.581	\$58.684	\$32.734	\$22.925	73,144	204,000	\$753.142
Median	\$3,098.886	\$2,185.238	\$1,905.950	\$535.923	\$193.699	\$117.644	342,750	1,263,000	\$4,150.084

	Enterprise Value as a Multiple of								Population Per Customer
	Invest. Capital (x)	Gross PP&E (x)	Net PP&E (x)	Rev. (x)	EBITDA (x)	EBIT (x)	Customers (\$)	Population (\$)	
American States Water Co	3.01	1.81	2.43	8.75	23.69	30.81	\$14,696	\$4,225	3.48
American Water Works Company Inc	2.07	1.40	1.79	10.68	20.83	31.10	\$11,533	\$2,908	3.97
Artesian Resources Corp	2.01	0.91	1.14	7.80	17.58	24.63	\$7,484	\$2,305	3.25
California Water Service Group	1.85	1.01	1.49	5.45	18.07	34.17	\$8,153	\$2,232	3.65
Essential Utilities, Inc.	1.62	1.43	1.77	9.14	20.13	30.00	\$10,641	\$3,874	2.75
Middlesex Water Co	2.38	1.59	1.96	11.39	24.31	40.63	\$14,807	\$3,592	4.12
SJW Corp.	1.51	1.06	1.55	6.92	19.49	38.95	\$10,239	\$2,670	3.83
York Water Company (The)	2.35	1.48	1.85	13.18	23.63	33.74	\$10,576	\$3,792	2.79
Average	2.10	1.33	1.75	9.16	20.97	33.00	\$11,016	\$3,200	3.48
Max	3.01	1.81	2.43	13.18	24.31	40.63	\$14,807	\$4,225	4.12
Min	1.51	0.91	1.14	5.45	17.58	24.63	\$7,484	\$2,232	2.75
Median	2.04	1.41	1.78	8.95	20.48	32.42	\$10,609	\$3,250	3.57

Market Multiples Method
Brentwood Borough Wastewater System Assets
Quantification of the Effective Risk/Growth Adjustments

	Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple	1.78	1.41	2.04
Ratio to Net PPE		<u>79.21%</u>	
Not Contributed Multiple (NPPE = ICAP mult.)	2.04	1.62	
Base Risk Factor	x 80%	80%	
Subject Company Adjusted Multiple		<u>1.63</u>	<u>1.30</u>
Subject Company Adjusted Multiple	1.63	1.30	
Comparable Group Multiple	÷ 1.78	1.41	
Effective Risk/Growth Adjustment		<u>92%</u>	<u>92%</u>

	Net PP&E	Gross PP&E	
Plant Assets	100%	100%	
Ratio of Known "Cost Free" Capital	26%	26%	
Plant Assets Less Known "Cost Free" Capital	<u>74%</u>	<u>74%</u>	
Comparable Group Multiple	1.78	1.41	
Plant Assets Less Known "Cost Free" Capital	÷ 74%	74%	
Multiple Without "Cost Free" Capital	2.41	1.91	
Base Risk Factor	x 80%	80%	
Subject Company Adjusted Multiple		<u>1.92</u>	<u>1.52</u>
Subject Company Adjusted Multiple	1.92	1.52	
Comparable Group Multiple	÷ 1.78	1.41	
Effective Risk/Growth Adjustment		<u>108%</u>	<u>108%</u>

	Net PP&E	Customers
Comparable Group Multiple	1.78	10,609.00
Implied Capitalization Rate (1÷Multiple)	56.18%	0.0094%
Ratio of Net PP&E Mult. to Invest. Capital Mult.	114.61%	
Less 1	- 1.00	
Difference in Capital Source due to Contributions	<u>14.61%</u>	
Assumed Investor Financed (1-Difference in Capital Source)	85.39%	85.39%
Implied Capitalization Rate (1÷Multiple)	x	<u>0.0094%</u>
Not Contributed Cap. Rate		<u>0.0080%</u>
Not Contributed Multiple (1÷Cap. Rate)		12,424.17
Base Risk Factor	x	80%
Subject Company Adjusted Multiple		<u>9,939.34</u>
Subject Company Adjusted Multiple		9,939.34
Comparable Group Multiple	÷	<u>10,609.00</u>
Effective Risk/Growth Adjustment		<u>94%</u>

Selected Transactions Method
For Brentwood Borough Wastewater System Assets
Summary

	<u>Median</u>	<u>Mid-Point</u>	<u>Value</u>
<u>All Selected Transactions Companies (N = 20)</u>			
1. Asset Items			\$14,414,702
2. Ex-Ante (page 2)	\$14,401,464	\$16,520,755	
3. Ex-Post (page 3)	\$11,135,692	\$15,600,898	
4. Demographics Items			\$30,748,374
5. Ex-Ante (page 2)	\$24,971,125	\$36,525,624	
6. Ex-Post (page 3)	\$24,971,125	\$36,525,624	
7.		Indicated Value *	\$22,581,538
<u>Mostly Collection/Distribution Selected Transactions Companies (N = 12)</u>			
8. Asset Items			\$13,436,820
9. Ex-Ante (page 2)	\$11,220,284	\$16,520,755	
10. Ex-Post (page 3)	\$10,405,342	\$15,600,898	
11. Demographics Items			\$23,860,352
12. Ex-Ante (page 2)	\$17,149,046	\$30,571,657	
13. Ex-Post (page 3)	\$17,149,046	\$30,571,657	
14.		Indicated Value *	\$18,648,586

Conclusion of Selected Transactions Method Valuation

	<u>Indicated Values</u>	<u>Weight</u>	
15. Mostly Collection/Distribution Transactions	\$18,648,586	100%	\$18,648,586
16. All Selected Transactions Companies	22,581,538	0%	0
17.		Conclusion	\$18,648,586

* - Indicated Value based on weighting of 50% Asset Items and 50% Demographics Items

Selected Transactions Method - Ex-Ante
For Brentwood Borough Wastewater System Assets
Based on 2016 - 2021 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

Name	Service	System	Selected Transactions' Metrics								
			Announced Purchase Price was:	Investor Provided Capital	Gross PP&E	Net PP&E	Revenues	EBITDA	EBIT	Customers	Population
Municipal Authority of the City of Mckeesport	WW	INT	\$156,000,000	\$83,903,219	\$91,435,797	\$73,813,794	\$13,047,844	\$6,180,616	\$3,811,679	12,780	46,468
New Garden Township/Authority's WW System's Assets	WW	INT	\$29,500,000	\$23,001,140	\$25,988,330	\$17,967,319	\$2,261,294	\$907,386	\$499,638	1,796	12,085
Limerick Township Wastewater System's Assets	WW	INT	\$75,100,000	\$43,501,755	\$60,847,250	\$36,113,701	\$4,418,775	\$2,487,775	\$893,600	5,416	18,798
Steelton Borough (Water) Authority	W	INT	\$22,500,000	NA	NA	NA	NA	NA	NA	2,472	5,932
Exeter Township Wastewater System Assets	WW	INT	\$96,000,000	NA	NA	NA	\$7,735,788	\$4,660,967	\$4,660,967	8,984	27,609
Kane Borough Authority Wastewater System	WW	INT	\$17,560,000	\$10,809,115	\$20,265,926	\$8,897,773	\$1,433,978	\$684,830	\$181,672	2,019	4,645
Borough of Royersford Wastewater System Assets	WW	INT	\$13,000,000	\$4,702,972	\$6,883,116	\$4,545,699	\$863,000	\$280,365	\$280,365	1,596	5,154
York City Sewer Authority Wastewater System Assets	WW	INT	\$235,000,000	\$100,493,098	\$120,654,506	\$78,592,332	\$24,641,181	\$9,759,797	\$6,150,926	13,747	80,929
Sadsbury Township Wastewater Utility	WW	C/D	\$9,250,000	NA	NA	NA	NA	NA	NA	998	3,850
East Bradford Township Wastewater System Assets	WW	C/D	\$5,000,000	\$1,298,627	NA	NA	\$1,130,372	\$49,804	\$49,804	1,248	9,942
Township of Mahoning Water System Assets	W	C/D	\$4,734,800	NA	NA	NA	\$753,857	\$151,916	\$91,468	1,186	4,218
Township of Mahoning Sewer System Assets	WW	C/D	\$4,765,200	NA	NA	NA	\$1,193,055	(\$173,564)	(\$244,337)	1,451	4,218
Cheltenham Township Wastewater System Assets	WW	C/D	\$50,250,000	NA	NA	NA	\$9,290,500	\$4,506,168	\$4,506,168	10,219	37,841
East Norriton Township Wastewater System Assets	WW	C/D	\$21,000,000	\$4,055,138	NA	NA	\$3,320,000	\$612,827	\$612,827	4,966	14,296
Valley Township Water System Assets	W	C/D	\$7,325,000	NA	NA	NA	\$698,550	\$78,704	\$78,704	1,669	7,493
Valley Township Wastewater System Assets	WW	C/D	\$13,950,000	NA	NA	NA	\$2,743,957	(\$408,562)	(\$408,562)	3,125	7,493
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	\$13,750,000	NA	\$15,295,347	\$11,548,897	\$1,380,242	\$858,878	\$858,878	1,428	5,530
Lower Makefield Township Wastewater System Assets	WW	C/D	\$53,000,000	\$16,525,411	NA	\$17,592,071	\$10,012,924	\$4,053,817	\$3,520,813	11,151	33,197
Willistown Township Wastewater Systems Assets	WW	C/D	\$17,500,000	\$9,866,721	\$8,673,707	\$4,887,532	\$2,148,508	\$297,618	(\$8,933)	2,294	11,214
East Whiteland Township Wastewater System Assets	WW	C/D	\$54,930,000	\$42,513,245	\$48,672,940	\$34,143,673	\$4,328,000	\$1,942,553	\$1,209,102	3,895	14,720

Subject Company's Metrics								
Brentwood Borough Wastewater System Assets	\$0	\$9,942,185	\$6,925,302	\$3,764,000	\$676,433	\$673,627	3,980	9,971

Subject Company's Selected Transactions Multiples Valuations											
Municipal Authority of the City of Mckeesport	WW	INT	\$25,412,506	\$0	\$16,962,513	\$14,636,114	\$45,002,377	\$17,073,306	\$27,569,445	\$48,582,160	\$33,474,133
New Garden Township/Authority's WW System's Assets	WW	INT	\$27,904,600	\$0	\$11,285,622	\$11,370,445	\$49,103,743	\$21,991,494	\$39,772,812	\$65,373,051	\$24,339,636
Limerick Township Wastewater System's Assets	WW	INT	\$32,837,533	\$0	\$12,271,024	\$14,401,464	\$63,971,666	\$20,419,901	\$56,613,046	\$55,187,962	\$39,835,201
Steelton Borough (Water) Authority	W	INT	\$37,022,802	NA	NA	NA	NA	NA	NA	\$36,225,728	\$37,819,875
Exeter Township Wastewater System Assets	WW	INT	\$30,343,339	NA	NA	NA	\$46,710,691	\$13,932,209	\$13,874,424	\$42,528,940	\$34,670,434
Kane Borough Authority Wastewater System	WW	INT	\$27,892,575	\$0	\$8,614,695	\$13,667,274	\$46,092,646	\$17,344,689	\$65,111,284	\$34,615,552	\$37,694,459
Borough of Royersford Wastewater System Assets	WW	INT	\$26,931,385	\$0	\$18,777,601	\$19,805,299	\$56,699,884	\$31,364,931	\$31,234,841	\$32,418,546	\$25,149,981
York City Sewer Authority Wastewater System Assets	WW	INT	\$26,872,846	\$0	\$19,364,494	\$20,707,440	\$35,896,818	\$16,287,404	\$25,736,359	\$68,036,663	\$28,953,589
Sadsbury Township Wastewater Utility	WW	C/D	\$30,422,538	NA	NA	NA	NA	NA	NA	\$36,888,778	\$23,956,299
East Bradford Township Wastewater System Assets	WW	C/D	\$28,857,805	\$0	NA	NA	\$16,649,386	\$67,909,505	\$67,627,841	\$15,945,513	\$5,014,585
Township of Mahoning Water System Assets	W	C/D	\$21,335,011	NA	NA	NA	\$23,640,807	\$21,082,509	\$34,869,938	\$15,889,126	\$11,192,672
Township of Mahoning Sewer System Assets	WW	C/D	\$1,532,003	NA	NA	NA	\$15,033,854	(\$18,571,519)	(\$13,137,492)	\$13,070,638	\$11,264,535
Cheltenham Township Wastewater System Assets	WW	C/D	\$13,645,042	NA	NA	NA	\$20,358,538	\$7,543,163	\$7,511,876	\$19,570,897	\$13,240,738
East Norriton Township Wastewater System Assets	WW	C/D	\$16,924,799	\$0	NA	NA	\$23,808,434	\$23,179,613	\$23,083,473	\$16,830,447	\$14,646,824
Valley Township Water System Assets	W	C/D	\$38,466,972	NA	NA	NA	\$39,469,329	\$62,955,780	\$62,694,662	\$17,467,645	\$9,747,441
Valley Township Wastewater System Assets	WW	C/D	\$1,873,849	NA	NA	NA	\$19,135,795	(\$23,096,226)	(\$23,000,431)	\$17,766,720	\$18,563,386
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	\$19,915,499	NA	\$8,937,688	\$8,245,195	\$37,497,048	\$10,829,191	\$10,784,275	\$38,322,829	\$24,792,269
Lower Makefield Township Wastewater System Assets	WW	C/D	\$13,515,319	\$0	NA	\$20,864,002	\$19,923,451	\$8,843,751	\$10,140,344	\$18,916,689	\$15,918,999
Willistown Township Wastewater Systems Assets	WW	C/D	(\$144,814,808)	\$0	\$20,059,271	\$24,796,315	\$30,658,485	\$39,774,440	(\$1,319,729,023)	\$30,361,813	\$15,560,237
East Whiteland Township Wastewater System Assets	WW	C/D	\$26,650,173	\$0	\$11,220,284	\$11,141,357	\$47,771,839	\$19,127,650	\$30,603,165	\$56,128,729	\$37,208,358

Definitions: Where "INT" is "Fully Integrated Assets" and "C/D" is "Mostly Collection/Distribution Assets".
Where "WW" is wastewater and "W" is water.

Selected Transactions Method - Ex-Post
For Brentwood Borough Wastewater System Assets
Based on 2016 - 2021 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

Name	Service	System	Ex-Post Selected Transactions' Metrics									
			Announced Purchase Price was:	Investor Provided Capital	Ex-POST - OCN - Gross PP&E	Ex-Post - OCNLD - Net PP&E	Revenues	EBITDA	EBIT	Customers	Population	
Municipal Authority of the City of McKeesport	WW	INT	\$156,000,000	\$83,903,219	\$108,231,570	\$80,085,602	\$13,047,844	\$6,180,616	\$3,811,679	12,780	46,468	
New Garden Township/Authority's WW System's Assets	WW	INT	\$29,500,000	\$23,001,140	\$27,146,852	\$18,567,728	\$2,261,294	\$907,386	\$499,638	1,796	12,085	
Limerick Township Wastewater System's Assets	WW	INT	\$75,100,000	\$43,501,755	\$63,480,402	\$46,153,867	\$4,418,775	\$2,487,775	\$893,600	5,416	18,798	
Steelton Borough (Water) Authority	W	INT	\$22,500,000	NA	\$19,739,906	\$14,433,435	NA	NA	NA	2,472	5,932	
Exeter Township Wastewater System Assets	WW	INT	\$96,000,000	NA	\$68,404,345	\$42,678,351	\$7,735,788	\$4,660,967	\$4,660,967	8,984	27,609	
Kane Borough Authority Wastewater System	WW	INT	\$17,560,000	\$10,809,115	\$21,023,527	\$13,503,901	\$1,433,978	\$684,830	\$181,672	2,019	4,645	
Borough of Royersford Wastewater System Assets	WW	INT	\$13,000,000	\$4,702,972	\$7,666,493	\$5,453,064	\$863,000	\$280,365	\$280,365	1,596	5,154	
York City Sewer Authority Wastewater System Assets	WW	INT	\$235,900,000	\$100,493,098	\$155,875,776	\$115,727,779	\$24,641,181	\$9,759,797	\$6,150,926	13,747	80,929	
Sadsbury Township Wastewater Utility	WW	C/D	\$9,250,000	NA	\$7,480,601	\$6,128,876	NA	NA	NA	998	3,850	
East Bradford Township Wastewater System Assets	WW	C/D	\$5,000,000	\$1,298,627	\$8,294,931	\$5,473,948	\$1,130,372	\$49,804	\$49,804	1,248	9,942	
Township of Mahoning Water System Assets	W	C/D	\$4,734,800	NA	\$5,294,272	\$3,507,138	\$753,857	\$151,916	\$91,468	1,186	4,218	
Township of Mahoning Sewer System Assets	WW	C/D	\$4,765,200	NA	\$4,931,649	\$3,234,859	\$1,193,055	(\$173,564)	(\$244,337)	1,451	4,218	
Cheltenham Township Wastewater System Assets	WW	C/D	\$50,250,000	NA	\$19,818,216	\$15,408,458	\$9,290,500	\$4,506,168	\$4,506,168	10,219	37,841	
East Norriton Township Wastewater System Assets	WW	C/D	\$21,000,000	\$4,055,138	\$16,916,212	\$9,251,450	\$3,320,000	\$612,827	\$612,827	4,966	14,296	
Valley Township Water System Assets	W	C/D	\$7,325,000	NA	\$6,843,616	\$4,983,659	\$698,550	\$78,704	\$78,704	1,669	7,493	
Valley Township Wastewater System Assets	WW	C/D	\$13,950,000	NA	\$13,389,108	\$8,832,690	\$2,743,957	(\$408,562)	(\$408,562)	3,125	7,493	
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	\$13,750,000	NA	\$15,295,347	\$11,548,897	\$1,380,242	\$858,878	\$858,878	1,428	5,530	
Lower Makefield Township Wastewater System Assets	WW	C/D	\$53,000,000	\$16,525,411	\$32,003,924	\$19,808,274	\$10,012,924	\$4,053,817	\$3,520,813	11,151	33,197	
Willistown Township Wastewater Systems Assets	WW	C/D	\$17,500,000	\$9,866,721	\$19,641,520	\$13,367,274	\$2,148,508	\$297,618	(\$8,933)	2,294	11,214	
East Whiteland Township Wastewater System Assets	WW	C/D	\$54,930,000	\$42,513,245	\$43,447,309	\$32,955,596	\$4,328,000	\$1,942,553	\$1,209,102	3,895	14,720	

Subject Company's Metrics								
Brentwood Borough Wastewater System Assets	\$0	\$9,942,185	\$6,925,302	\$3,764,000	\$676,433	\$673,627	3,980	9,971

Ex-Post Subject Company's Selected Transactions Multiples Valuations											
Municipal Authority of the City of McKeesport	WW	INT	\$24,940,192	\$0	\$14,330,208	\$13,489,904	\$45,002,377	\$17,073,306	\$27,569,445	\$48,582,160	\$33,474,133
New Garden Township/Authority's WW System's Assets	WW	INT	\$27,798,437	\$0	\$10,803,995	\$11,002,768	\$49,103,743	\$21,991,494	\$39,772,812	\$65,373,051	\$24,339,636
Limerick Township Wastewater System's Assets	WW	INT	\$32,382,302	\$0	\$11,762,025	\$11,268,615	\$63,971,666	\$20,419,901	\$56,613,046	\$55,187,962	\$39,835,201
Steelton Borough (Water) Authority	W	INT	\$24,043,413	NA	\$11,332,332	\$10,795,718	NA	NA	NA	\$36,225,728	\$37,819,875
Exeter Township Wastewater System Assets	WW	INT	\$25,892,488	NA	\$13,953,057	\$15,577,663	\$46,710,691	\$13,932,209	\$13,874,424	\$42,528,940	\$34,670,434
Kane Borough Authority Wastewater System	WW	INT	\$27,271,038	\$0	\$8,304,257	\$9,005,420	\$46,092,646	\$17,344,689	\$65,111,284	\$34,615,552	\$37,694,459
Borough of Royersford Wastewater System Assets	WW	INT	\$26,279,605	\$0	\$16,858,869	\$16,509,787	\$56,699,884	\$31,364,931	\$31,234,841	\$32,418,546	\$25,149,981
York City Sewer Authority Wastewater System Assets	WW	INT	\$25,495,311	\$0	\$14,988,945	\$14,062,708	\$35,896,818	\$16,287,404	\$25,736,359	\$68,036,663	\$28,953,589
Sadsbury Township Wastewater Utility	WW	C/D	\$20,897,727	NA	\$12,293,827	\$10,452,005	NA	NA	NA	\$36,888,778	\$23,956,299
East Bradford Township Wastewater System Assets	WW	C/D	\$23,183,181	\$0	\$5,992,928	\$6,325,692	\$16,649,386	\$67,909,505	\$67,627,841	\$15,945,513	\$5,014,585
Township of Mahoning Water System Assets	W	C/D	\$17,845,154	NA	\$8,891,545	\$9,349,481	\$23,640,807	\$21,082,509	\$34,869,938	\$15,889,126	\$11,192,672
Township of Mahoning Sewer System Assets	WW	C/D	\$3,924,022	NA	\$9,606,624	\$10,201,511	\$15,033,854	(\$18,571,519)	(\$13,137,492)	\$13,070,638	\$11,264,535
Cheltenham Township Wastewater System Assets	WW	C/D	\$16,574,121	NA	\$25,208,868	\$22,584,766	\$20,358,538	\$7,543,163	\$7,511,876	\$19,570,897	\$13,240,738
East Norriton Township Wastewater System Assets	WW	C/D	\$16,201,374	\$0	\$12,342,354	\$15,719,843	\$23,808,434	\$23,179,613	\$23,083,473	\$16,830,447	\$14,646,824
Valley Township Water System Assets	W	C/D	\$30,450,745	NA	\$10,641,524	\$10,178,834	\$39,469,329	\$62,955,780	\$62,694,662	\$17,467,645	\$9,747,441
Valley Township Wastewater System Assets	WW	C/D	\$4,380,782	NA	\$10,358,680	\$10,937,547	\$19,135,795	(\$23,096,226)	(\$23,000,431)	\$17,766,720	\$18,563,386
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	\$19,915,499	NA	\$8,937,688	\$8,245,195	\$37,497,048	\$10,829,191	\$10,784,275	\$38,322,829	\$24,792,269
Lower Makefield Township Wastewater System Assets	WW	C/D	\$13,592,205	\$0	\$16,464,725	\$18,529,681	\$19,923,451	\$8,843,751	\$10,140,344	\$18,916,689	\$15,918,999
Willistown Township Wastewater Systems Assets	WW	C/D	(\$148,181,185)	\$0	\$8,858,186	\$9,066,380	\$30,658,485	\$39,774,440	(\$1,319,729,023)	\$30,361,813	\$15,560,237
East Whiteland Township Wastewater System Assets	WW	C/D	\$26,869,070	\$0	\$12,569,805	\$11,543,012	\$47,771,839	\$19,127,650	\$30,603,165	\$56,128,729	\$37,208,358

Definitions: Where "INT" is "Fully Integrated Assets" and "C/D" is "Mostly Collection/Distribution Assets".
Where "WW" is wastewater and "W" is water.

Summar of Selected Transactions Method - Wall Street Transactions
 For Brentwood Borough Wastewater System Assets
Based on Recent Walls Sreet Transactions Without Discount for Cost Free Capital

Brentwood Borough
 Wastewater System
 Assets's Indicated Value

Based on Recent SJW Group's Purchase of Connecticut Water Service Inc.	\$28,918,541
Based on Recent Aquarion Water Company's Purchase of New England Service Company, Inc.	\$24,100,305
Based on Recent Aquarion Water Company's Purchase of Torrington Water Company, Inc.	\$38,486,573

Summary of Selected Transactions Method - Wall Street Transactions

For Brentwood Borough Wastewater System Assets

Based on Recent SJW Group's Bid and Purchase of Connecticut Water Service Inc., With and Without Discount for Cost Free Capital

Connecticut Water Service Inc. (Financial information reported in 000 of \$)			Brentwood Borough Wastewater System Assets			
			Brentwood Borough Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation		Indicated Value *
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>				
Purchase Price was:	\$1,106,267					
Investor Provided Capital	\$573,223	1.93	\$0	NA		
Gross PP&E	\$939,050	1.18	\$9,942,185	\$11,712,594		
Net PP&E	\$697,723	1.59	\$6,925,302	\$10,980,337	\$11,346,465	
Revenues	\$107,054	10.33	\$3,764,000	\$38,896,157		
EBITDA	\$48,920	22.61	\$676,433	\$15,296,720		
EBIT	\$32,236	34.32	\$673,627	\$23,117,378		\$19,916,165
Customers	135,645	\$8,156	3,980	\$32,459,308		
Population	450,000	\$2,458	9,971	\$24,512,419	\$28,485,864	
Average				\$22,424,988		
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>				
Investor Provided Capital	\$573,223	1.93	\$0	NA		
Gross PP&E (Less "Cost Free" Capital)	\$646,723	1.71	\$9,942,185	\$17,006,846		
Net PP&E (Less "Cost Free" Capital)	\$480,521	2.30	\$6,925,302	\$15,943,597	\$16,475,222	
Revenues	\$107,054	10.33	\$3,764,000	\$38,896,157		
EBITDA	\$48,920	22.61	\$676,433	\$15,296,720		
EBIT	\$32,236	34.32	\$673,627	\$23,117,378		\$28,918,541
Customers (Adj. "Cost Free" Capital)	93,419	\$11,842	3,980	\$47,131,355		
Population (Adj. "Cost Free" Capital)	309,914	\$3,570	9,971	\$35,592,365	\$41,361,860	
Average				\$27,569,203		

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Summary of Selected Transactions Method - Wall Street Transactions

For Brentwood Borough Wastewater System Assets

Based on Recent Aquarion Water Company's Purchase of New England Service Company, Inc., With and Without Discount for Cost Free Capital

New England Service Company, Inc.		Brentwood Borough Wastewater System Assets			
			Brentwood Borough Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation	Indicated Value *
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>			
Purchase Price was:	\$49,290,414				
Investor Provided Capital	\$26,734,587	1.84	\$0	NA	
Gross PP&E	\$54,517,263	0.90	\$9,942,185	\$8,988,977	
Net PP&E	\$36,566,790	1.35	\$6,925,302	\$9,335,000	\$9,161,989
Revenues	\$7,994,088	6.17	\$3,764,000	\$23,208,290	
EBITDA	\$2,729,953	18.06	\$676,433	\$12,213,273	
EBIT	\$1,559,860	31.60	\$673,627	\$21,286,124	\$14,382,981
Customers	9,515	\$5,180	3,980	\$20,617,535	
Population	26,437	\$1,864	9,971	\$18,590,412	\$19,603,973
Average				\$16,319,944	
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>			
Investor Provided Capital	\$26,734,587	1.84	\$0	NA	
Gross PP&E (Less "Cost Free" Capital)	\$32,535,719	1.51	\$9,942,185	\$15,062,043	
Net PP&E (Less "Cost Free" Capital)	\$21,822,937	2.26	\$6,925,302	\$15,641,845	\$15,351,944
Revenues	\$7,994,088	6.17	\$3,764,000	\$23,208,290	
EBITDA	\$2,729,953	18.06	\$676,433	\$12,213,273	
EBIT	\$1,559,860	31.60	\$673,627	\$21,286,124	\$24,100,305
Customers (Adj. "Cost Free" Capital)	5,679	\$8,680	3,980	\$34,547,003	
Population (Adj. "Cost Free" Capital)	15,778	\$3,124	9,971	\$31,150,330	\$32,848,666
Average				\$21,872,701	

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Summary of Selected Transactions Method - Wall Street Transactions

For Brentwood Borough Wastewater System Assets

Based on Recent Aquarion Water Company's Bid For Torrington Water Company, With and Without Discount for Cost Free Capital

Torrington Water Company			Brentwood Borough Wastewater System Assets			
			Brentwood Borough Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation		Indicated Value *
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>				
Purchase Price was:	\$91,880,072					
Investor Provided Capital	\$36,395,842	2.52	\$0	NA		
Gross PP&E	\$75,202,417	1.22	\$9,942,185	\$12,147,065		
Net PP&E	\$48,743,673	1.88	\$6,925,302	\$13,053,945	\$12,600,505	
Revenues	\$7,835,144	11.73	\$3,764,000	\$44,139,149		
EBITDA	\$3,264,018	28.15	\$676,433	\$19,041,167		
EBIT	\$2,046,050	44.91	\$673,627	\$30,249,962		\$22,962,651
Customers	10,125	\$9,075	3,980	\$36,116,809		
Population	30,005	\$3,062	9,971	\$30,532,784	\$33,324,797	
Average				\$26,468,697		
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>				
Investor Provided Capital	\$36,395,842	2.52	\$0	NA		
Gross PP&E (Less "Cost Free" Capital)	\$44,868,813	2.05	\$9,942,185	\$20,359,100		
Net PP&E (Less "Cost Free" Capital)	\$29,082,453	3.16	\$6,925,302	\$21,879,078	\$21,119,089	
Revenues	\$7,835,144	11.73	\$3,764,000	\$44,139,149		
EBITDA	\$3,264,018	28.15	\$676,433	\$19,041,167		
EBIT	\$2,046,050	44.91	\$673,627	\$30,249,962		\$38,486,573
Customers (Adj. "Cost Free" Capital)	6,041	\$15,209	3,980	\$60,533,611		
Population (Adj. "Cost Free" Capital)	17,902	\$5,132	9,971	\$51,174,502	\$55,854,057	
Average				\$35,339,510		

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Market Approach
Brentwood Borough Wastewater System Assets
Market Approach Conclusion

<u>Method</u>	<u>Results</u>	<u>Wtd.</u>
1. Market Multiples Method	\$23,608,075	50%
2. Selected Transactions Method	<u>18,648,586</u>	50%
3. Conclusion (Wtd.)	<u><u>\$21,128,331</u></u>	
4. Check - Wall Street Transactions		
5. Min	\$24,100,305	
6. Max	38,486,573	

* - Indicated Value based on weighting of 50% Asset Items and 50% Demographics Items

Brentwood Borough Wastewater System Assets
 Summary of Approach Results and
Fair Market Value Conclusion at Appraisal Date

<u>Valuation Approach</u>	<u>Indicated Value</u>	<u>Conclusion</u>	<u>Consideration</u>
Cost Approach	\$19,856,726		33.33%
Income Approach	21,817,878		33.33%
Market Approach	21,128,331		33.34%
		Conclusion \$20,934,000	

WORKPAPERS

Daily Bond Yields and Key Indicators

Updated by 11 am ET with data from the previous business day. Data as of 4-Jan-23

Moody's Daily Long-term Corporate Bond Yield Averages			
	Utilities	Industrial	Corporate
Aaa	NA	4.59	4.59
Aa	5.19	4.66	4.93
A	5.42	5.11	5.27
Baa	5.73	5.78	5.76
Avg	5.45	5.04	5.25

Moody's Daily Treasury Yield Averages	
Short-Term (3-5 yrs)	3.49
Medium-Term (5-10 yrs)	3.01
Long-Term (10+ yrs)	3.7

Moody's Daily Public Utility Common Stock Yield Averages	
Price	543.51
Yield	3.61
New Dividend	19.64

Moody's Commodity and Scrap Price Indexes	
Spot Commodity Index	9,086.17
Industrial Metals Index	2,998.68

Index Name: S&P Municipal Bond Revenue Index

As of: Jan 26, 2023

Effective date	Yield To Maturity
1/9/2023	4.10%
1/10/2023	4.09%
1/11/2023	4.06%
1/12/2023	4.03%
1/13/2023	4.01%
1/17/2023	4.00%
1/18/2023	3.97%
1/19/2023	3.94%
1/20/2023	3.95%

FED H.15

DATE	DAAA	DBAA	DGS10	DGS20	DGS30
2023-01-09	4.42	5.55	3.53	3.83	3.66
2023-01-10	4.51	5.63	3.61	3.91	3.74
2023-01-11	4.40	5.53	3.54	3.84	3.67
2023-01-12	4.29	5.40	3.43	3.73	3.56
2023-01-13	4.34	5.44	3.49	3.79	3.61
2023-01-16	#N/A	#N/A	#N/A	#N/A	#N/A
2023-01-17	4.33	5.44	3.53	3.81	3.64
2023-01-18	4.23	5.33	3.37	3.65	3.54
2023-01-19	4.27	5.38	3.39	3.69	3.57

FED H.15

		AAA Corp	BAA CORP	10-yr T-bond	20-yr T-bond	30-yr T-bond
Spot	1/13/23	4.34	5.44	3.49	3.79	3.61

FED H.15

	1/13/23	AAA Corp	BAA CORP		A Rated Utility		
		4.34	5.44	Spread	-0.25	-0.32	
Moody's Spot ==>		4.59	5.76	Moody's Spot ==>	5.42	5.42	
		-0.25	-0.32	Implied	5.17	5.10	5.14

Moody's Daily Long-term Corporate Bond Yield Averages

	1/4/2023	Utilities	Industrial	Corporate
Spot	Aaa	NA	4.59	4.59
	Aa	5.19	4.66	4.93
	A	5.42	5.11	5.27
	Baa	5.73	5.78	5.76
	Avg	5.45	5.04	5.25

S&P Municipal Bond Revenue Index

1/13/23	4.01%
---------	-------

Utilities

Aa	
A	
Baa	5.14

	Decade Spread	Annual Spread
10-Year	3.49	
20-Year	3.79	0.300
30-Year	3.61	-0.180

REVENUE BOND INDEX

10-20 Yr	4.01
20-30 Yr	0.15
	-0.18

3.98

30-Yr Rev Bond Est.

3.98

Lt Debt	5.14	5.14
Prf Stk	6.68	130%
Pref Stock Est.	130%	6.68

1/13/23

A-Rated Rev Bonds	3.98
A-Rated PU Bonds	5.14
A-Rated PU Pref Stk	6.68
30-yr T-bond	3.61

	SBBI	SBBI
Equity Risk Premium	7.46	7.46
Beta (Value Line Med.)	<u>0.75</u>	<u>0.75</u>
Risk Adjusted Equity Premium	5.60	5.60
Yield (RF)	3.61	3.61
Size Premium	<u>2.48</u>	<u>0.00</u>
	<u>11.69</u>	<u>9.21</u>

High 11.69
Low 9.21

0.75

12.33 Total Return SBBI 1926-2021
4.87 Income Return SBBI 1926-2021

3.61 30-yr T-bond

	Recent Market Value (Mill \$)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	3,529.03	Mid-Cap	2	2.48	0.65
American Water Works Co Inc	28,886.99	Large-Cap	1	0	0.90
Artesian Resources Corp	567.22	Low-Cap	3	3.95	0.70
California Water Service Gp	3,420.47	Mid-Cap	2	2.48	0.70
Essential Utilities, Inc.	12,797.17	Mid-Cap	2	2.48	0.95
Middlesex Water Co	1,443.01	Low-Cap	3	3.95	0.70
SJW Corp	2,431.00	Low-Cap	3	3.95	0.80
York Water Co	648.57	Low-Cap	3	3.95	0.80
Average	<u>6,715.430</u>	<u>Mid-Cap</u>	<u>2</u>	<u>2.48</u>	<u>0.78</u>
Median	<u>2,925.736</u>	<u>Mid-Cap</u>	<u>2</u>	<u>2.48</u>	<u>0.75</u>

2/15/2023	9/30/22	Company Name	Ticker/Symbol	LT Debt-Total Qty	Preferred S Minority In Common Equity-Total Qty	Invested Capital-Total Qty	Market Value-Monthly	1/13/23			Market Ratios				
								Market Value-Monthly	LTD	Pref	Equity	LTD	Pref	Equity	
		AMERICAN ST.AWR		698,329	0.000	705,504	3,529,026	AMERICA	0.497	0.000	0.503	0.165	0.000	0.835	1,000
		AMERICAN W/AWK		11,289,000	0.000	7,758,000	28,886,994	AMERICA	0.593	0.000	0.407	0.281	0.000	0.719	1,000
		ARTESIAN RES.ARTN.A		1,776,499	0.000	1,878,873	567,222	ARTESIAN	0.484	0.000	0.516	0.237	0.000	0.763	1,000
		CALIFORNIA WCWT		1,059,734	0.000	1,273,459	3,420,469	CALIFORNIA	0.453	0.000	0.547	0.237	0.000	0.763	1,000
		ESSENTIAL UTWTRG		6,363,211	0.000	5,343,102	12,797,171	ESSENTIAL	0.544	0.000	0.456	0.332	0.000	0.668	1,000
		MIDDLESEX W/MSEX		313,376	2,084	398,075	1,443,013	MIDDLES	0.439	0.003	0.558	0.178	0.001	0.821	1,000
		SIW GROUP		1,458,088	0.000	1,049,347	2,431,003	SIW GROU	0.582	0.000	0.418	0.375	0.000	0.625	1,000
		THE YORK W.AYORW		125,005	0.000	204,576	648,573	THE YORI	0.379	0.000	0.621	0.162	0.000	0.838	1,000

Assumptions:
Debt Cost 5.14
Pref. Stock Cost 6.68
Equity Cost 11.69
Equity Cost 9.21

Ratio	Cost	Wt	Shield	Overall
23.70%	5.140	1.22	0.72	0.8770896
0.00%	6.680	0.00	1	0
76.30%	11.690	8.92	1	8.91947
		10.14		9.80
23.70%	5.140	1.22	0.72	0.8770896
0.00%	6.680	0.00	1	0
76.30%	9.205	7.02	1	7.023415
		8.24		7.90

Public Meeting held October 27, 2022

ROE

9.75

DSIC Weighted Cost of Capital

<u>Assumptions:</u>	<u>1/13/2023</u>
Debt Cost	5.14
Pref. Stock Cost	6.68
DSIC Equity Cost	9.75

	Ratio	Cost	Wt	Shield	Overall
Debt	49.10%	5.140	2.52	0.72	1.817093
Pref	0.00%	6.680	0.00	1	0
Equity	50.90%	9.750	4.96	1	4.96275
			7.49		6.78 <<<<ANSWER

71.59.88.179



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Aqua America's Pennsylvania Subsidiary Enters Agreement to Purchase Cheltenham Township Wastewater System

July 02, 2018 07:00 AM Eastern Daylight Time

BRYN MAWR, Pa.--(BUSINESS WIRE)--Aqua America announced today that its Pennsylvania subsidiary has signed an asset purchase agreement with Cheltenham Township to purchase its wastewater system, which serves approximately 10,500 connections in Montgomery County, for \$50.25 million. The agreement must be approved by the Pennsylvania Public Utility Commission.

The transaction will be Aqua Pennsylvania's fourth acquisition application referred to the Pennsylvania PUC since Act 12, commonly referred to as fair market value legislation, was enacted last year. Aqua Pennsylvania has asset purchase agreements with the 2,100-customer New Garden Township wastewater system in Chester County and the 5,400-customer Limerick Township wastewater system in Montgomery County. The company also has an agreement, signed in December 2017, with East Bradford Township in Chester County to purchase its 1,200-customer wastewater collection system. Aqua already provides water service to East Bradford, as it does with Cheltenham.

These four systems, including Cheltenham, total more than 19,000 wastewater connections and would nearly double Aqua Pennsylvania's current 22,000-customer wastewater operation.

The new law encourages a consolidation of the fragmented industry for the benefit of customers, the environment, and local governments. This transaction will benefit customers by leveraging compliance expertise, purchasing power gained through economies of scale and operational efficiencies to ultimately benefit service to our customers at affordable rates.

"We are pleased with the momentum we are gaining to reach agreements with municipal systems," said Aqua America Chairman and CEO Christopher Franklin. "Act 12 is having its intended impact, allowing municipalities to be compensated for the fair value of their water and wastewater assets and enabling utility professionals to bring expertise to systems in need."

Aqua Pennsylvania President Marc Lucca says his team is ready to work with the Cheltenham community on making needed system improvements.

"As with our pending agreements with New Garden, East Bradford and Limerick, the Aqua Pennsylvania team is looking forward to assuming Cheltenham's sewer utility responsibilities so the township can direct its attention and capital to other priorities," said Lucca. "We are anxious to begin the work necessary to help the township meet the requirements of an outstanding Pennsylvania Department of Environmental Protection consent order, specifically related to inflow and infiltration issues there."

In total, Aqua has plans to spend nearly \$50 million over the next 10 years to improve Cheltenham's wastewater system.

Aqua America is one of the largest U.S.-based, publicly traded water utilities and serves nearly 3 million people in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Indiana and Virginia. Aqua America is listed on the New York Stock Exchange under the ticker symbol WTR. Visit AquaAmerica.com for more information.

Forward-Looking Statements

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 including, among others: the company's ability to successfully close the acquisition of the wastewater systems noted in this release. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including: general economic business conditions, the successful integration of the customers and the facilities, the success of the company's growth efforts including its ability to utilize Act 12, and other factors discussed in our Annual Report on Form 10-K, which is on file with the Securities and Exchange Commission.

Cheltenham Township
1329 Proceeding
Cheltenham Twp. - Water Accounts reported for Sewer Billing

Type of Service	Gallons	Customers ¹
Commercial	280,938,300	534
Industrial	364,400	14
Public	9,962,700	23
Residential	484,692,800	9,648
Total	775,958,200	10,219

1. Customers include all Active and Inactive Accounts

The following table breaks down the above total figures by customer class as of December 31, 2017, 2016, and 2015 :

	2017	2016	2015
Customers:			
Residential	118,493	111,494	110,254
Commercial	9,386	8,626	8,569
Industrial	536	479	478
Public Authority	1,072	948	964
Fire Protection	3,178	2,876	2,815
Other (including non-metered accounts)	2,980	545	553
Total	<u>135,645</u>	<u>124,968</u>	<u>123,633</u>
Water Revenues (in thousands):			
Residential	\$ 62,831	\$ 59,884	\$ 58,439
Commercial	13,676	12,250	11,816
Industrial	3,196	3,176	3,229
Public Authority	3,845	3,510	3,193
Fire Protection	20,235	18,486	18,016
Other (including non-metered accounts)	3,271	1,361	1,348
Total	<u>\$ 107,054</u>	<u>\$ 98,667</u>	<u>\$ 96,041</u>
Customer Water Consumption (millions of gallons):			
Residential	6,408	6,583	6,551
Commercial	2,026	1,954	1,941
Industrial	711	724	777
Public Authority	575	539	503
Total	<u>9,720</u>	<u>9,800</u>	<u>9,772</u>

The Regulated Companies own various small, discrete parcels of land that are no longer required for water supply purposes. At December 31, 2017, this land totaled over 600 acres. Over the past several years, we have been disposing of these land parcels through sales and/or donations, primarily to towns and municipalities. For more information, please refer to *Segments of Our Business* below.

Additional information on land dispositions can be found in Item 7 – “Management’s Discussion and Analysis of Financial Conditions and Results of Operations – Commitments and Contingencies”.

Competition

Our Regulated Companies face competition from a few small privately-owned water systems operating within, or adjacent to, our franchise areas and from municipal and public authority systems whose service areas in some cases overlap portions of our franchise areas.

Employees

As of December 31, 2017, we employed a total of 294 people. Our employees are not covered by collective bargaining agreements.

DEALS AUGUST 6, 2018 / 5:11 PM / 6 MONTHS AGO

SJW Group makes \$1.1 billion all-cash offer for Connecticut Water

3 MIN READ



NEW YORK (Reuters) - SJW Group ([SJW.N](#)) and Connecticut Water Service Inc ([CTWS.O](#)) said on Monday they were changing from a merger to an acquisition agreement, with SJW offering to buy the New England utility for \$1.1 billion in cash instead of combining stock.

The switch to an all-cash offer is worth \$70 per Connecticut Water share, a 33 percent premium to Connecticut Water's share price prior to the original deal announced in March, according to a joint statement.

It was also higher than the implied \$61.86 per share value of the Clinton, Connecticut-based firm under the merger-of-equals transaction, which would have created a combined company in which existing SJW shareholders would hold 60 percent of the stock.

SJW closed 2.3 percent lower, while Connecticut Water was 9 percent higher at \$68.50.

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To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase ([JPM.N](#)). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

The new deal aims to conclude in the first quarter of 2019, subject to approvals from Connecticut Water’s shareholders, as well as regulators in Connecticut and Maine.

The duo’s original all-stock merger announcement in March triggered competing offers from Eversource Energy (ES.N) and California Water Service Group (CWT.N).

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“We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals,” SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

Switching to an acquisition, versus a merger structure, means that SJW shareholders will no longer be required to vote on approving the deal, the statement said.

CalWater has an open tender offer to acquire SJW that runs until Sept. 28.

However, asked if the change was aimed at heading off any shareholder challenge to the deal, Thornburg told Reuters it “wasn’t a consideration” and it had received nothing but support from its shareholders.

RBS sounds alarm over Brexit

CalWater declined to comment. A spokesman for Eversource said the company was evaluating developments but, as it has made clear, it will be disciplined in pursuing this or any other transaction.

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker
Our Standards: [The Thomson Reuters Trust Principles.](#)

MORE FROM REUTERS

Filed by Eversource Energy
 (Commission File No. 001-05324) pursuant
 to Rule 425 under the Securities Act of 1933

Subject Company: New England Service Company



JOINT NEWS RELEASE

New England Service Company To be Acquired by Aquarion Water Company

*Region's largest private water company expands operations in
 Connecticut, Massachusetts and New Hampshire*

BRIDGEPORT, CONN. – April 8, 2021 – Aquarion Company (Aquarion), parent of Aquarion Water Company, and New England Service Company (NESC) (OTC Pink Sheets Trading Symbol: NESW) today announced that they have entered into a definitive agreement whereby Aquarion will acquire all outstanding shares of NESC and NESC will become a wholly-owned subsidiary of Aquarion. Aquarion is a water supply company and holding company based in Bridgeport, Connecticut, providing regulated water service to customers in Connecticut, Massachusetts, and New Hampshire. NESC is a holding company based in Plainville, Connecticut providing regulated water service to customers in Connecticut, Massachusetts, and New Hampshire.

Under the agreement, which was unanimously approved by the Boards of Directors of both Aquarion and NESC, the acquisition will be executed through a stock-for-stock transaction that is structured to be a tax-free reorganization. The agreement provides that the stockholders of NESC will receive 0.51208 shares of the common shares of Aquarion's parent, Eversource Energy (Eversource) (NYSE: ES), in exchange for each share of NESC common stock. The fixed exchange ratio implies a \$44.90 per share price based on the \$87.68 closing price of Eversource Energy common shares on April 6, 2021. In connection with the exchange, Eversource Energy will issue approximately 463,000 shares of ES Common Stock at closing.

The merger includes NESC's Valley Water System in Connecticut, Colonial Water Company and Mountain Water Systems in Massachusetts, and Abenaki Water Company in New Hampshire, as well as unregulated service operations throughout New England. The merger will add nearly 10,000 customers to Aquarion's existing base of 216,000 customers. Under the agreement, all NESC employees will be retained.

"This merger will create long-term benefits for customers, employees, and the communities we serve," said Donald Morrissey, President of Aquarion Water Company. "We will make investments in these water systems focused on reliability and water quality and deliver a superior customer experience. We also welcome NESC's dedicated employees to the Aquarion team. I'm confident that we share a similar passion for delivering superior water service to customers and the communities we serve and being great stewards of the environment."

Over the last ten years, Aquarion has integrated over 70 water systems into its operations, strengthening the company's ability to deliver high-quality water to communities throughout the region.

"I am pleased to announce the NESC and Aquarion combination and look forward to working with Aquarion's leadership team on a smooth transition for our customers and employees," said Don Vaughan, NESC Chairman. He also noted, "Aquarion is well-positioned to deliver the reliable high-quality water service that our customers expect." NESC President, Nicholas LaChance, added "The stockholders, customers and employees of NESC will benefit from this deal with Aquarion. We view this transaction with Aquarion as a win for all of our stakeholders, and we look forward to working closely with their team."

The completion of the transaction will require approval by the stockholders of NESC, and the NESC Board of Directors has resolved to recommend the adoption of the merger agreement by the stockholders. The transaction is also subject to the approval of regulatory authorities, including the Connecticut Public Utilities Regulatory Authority, Massachusetts Department of Public Utilities, and New Hampshire Public Utilities Commission, and satisfaction of several other conditions. The parties plan to file all required regulatory applications over the coming months with an anticipated closing by the end of 2021.

Advisors and Counsel

Ropes & Gray LLP served as counsel to Aquarion Company and Eversource Energy in the transaction. Boenning & Scattergood, Inc. provided a fairness opinion to the Board of Directors of New England Service Company. Cranmore, FitzGerald and Meaney served as counsel to New England Service Company.

About Aquarion Water Company:

Aquarion Water Company is the public water supply company for more than 625,000 people in 52 cities and towns throughout Connecticut, as well as serving customers in Massachusetts and New Hampshire. It is the largest investor-owned water utility in New England and among the seven largest in the U.S. Based in Bridgeport, CT, Aquarion has been in the public water supply business since 1857. Across its operations, Aquarion strives to act as a responsible steward of the environment and to assist the communities it serves in promoting sustainable practices. Aquarion Company is a wholly-owned subsidiary of Eversource.

For more information on Aquarion Water Company, please visit www.aquarionwater.com or www.facebook.com/aquarionwater.

About New England Service Company

Headquartered in Plainville, Connecticut, NESC is predominantly involved in the operation, management and financing of water systems and other related activities. NESC was formed in 1997 to operate in both regulated and unregulated water markets. NESC is the sole stockholder of four regulated water companies.

For more information on New England Service Company please visit www.NewEnglandServiceCompany.com

This news release includes statements concerning Aquarion and Aquarion Water Company's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts, including statements regarding the planned merger with New England Service Company, the timing of such transaction and benefits anticipated from such transaction. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Generally, readers can identify these forward-looking statements through the use of words or phrases such as "will," "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements involve risks and uncertainties that may cause actual results or outcomes to differ materially from those included in the forward-looking statements. Factors that may cause actual results to differ materially from those included in the forward-looking statements include, but are not limited to: the transaction is subject to conditions to closing, including regulatory approvals, that may not be satisfied; it may take longer than anticipated to consummate the transaction; we may not realize the benefits we anticipate from the transaction; unforeseen liabilities; risks relating to integration of the acquired business; and other presently unknown or unforeseen factors.

Other risk factors are detailed in Eversource Energy's reports filed with the Securities and Exchange Commission (SEC) and updated as necessary, and are available on Eversource Energy's website at www.eversource.com and on the SEC's website at www.sec.gov. All such factors are difficult to predict and contain uncertainties that may materially affect Aquarion or Aquarion Water Company's actual results, many of which are beyond our control. You should not place undue reliance on the forward-looking statements; each speaks only as of the date on which such statement is made, except as required by federal securities laws, and Aquarion Water Company undertakes no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events.

Additional Information

This communication does not constitute an offer to buy or solicitation of any offer to sell securities. This communication relates to a proposed business combination transaction between Aquarion Company and New England Service Company. In connection with the proposed business combination, Eversource Energy will file a registration statement with the SEC. This communication is not a substitute for any registration statement, prospectus/proxy statement or other document Eversource Energy, Aquarion Company and/or New England Service Company may file with the SEC in connection with the proposed transaction. INVESTORS AND SECURITY HOLDERS OF NEW ENGLAND SERVICE COMPANY ARE URGED TO READ CAREFULLY THE REGISTRATION STATEMENT, PROSPECTUS, PROXY STATEMENT AND OTHER DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT EVERSOURCE ENERGY, AQUARION COMPANY, NEW ENGLAND SERVICE COMPANY AND THE PROPOSED TRANSACTION. Investors and security holders may obtain free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC's web site at www.sec.gov or by directing a request to Eversource's Investor Relations department at (860) 665-5154 or by email to jeffrey.kotkin@eversource.com.

Certain Information Regarding Participants

This filing may be deemed solicitation material in respect of the proposed business combination transaction between Aquarion Company and New England Service Company. The directors, trustees, executive officers and certain other members of management and employees of Eversource Energy, Aquarion Company and New England Service Company may be deemed "participants" in the solicitation of proxies from stockholders of New England Service Company in favor of the proposed merger. You can find information about Eversource's trustees and executive officers in Eversource's annual report on Form 10-K for the year ended December 31, 2020, which was filed with the SEC on February 17, 2021 and its proxy statement for its 2021 annual meeting filed with the SEC on March 26, 2021. Information regarding the persons who may, under the rules of the SEC, be considered participants in the solicitation of the stockholders of New England Service Company in connection with the proposed merger will be set forth in the registration statement, prospectus/proxy statement or other documents filed with the SEC if any when they become available. You may obtain these documents (when they become available) free of charge at the SEC's web site at www.sec.gov and from Investor Relations at Eversource as described above.

Media Contacts:**Aquarion Contact:**

Peter Fazekas
Director – Corporate Communications
Aquarion Water Company
Phone: (203) 336-7651
pfazekas@aquarionwater.com

New England Service Company Contact:

Nicholas LaChance
President and Chief Executive Officer
New England Service Company
37 Northwest Drive
Plainville, CT 06062
Phone: (860)-747-1665
NLaChance@NewEnglandServiceCompany.com

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MUNICIPALITIES SUPPLIED					
1. Show below the names of the municipalities in which the respondent supplies water and the number of customers in each.					
Line No.	Name (a)	Estimated Population Supplied*** (b)	Number of customers served by meter* (c)	Number of customers not served by meter** (d)	Total customers supplied (e)
1	Torrington	29,000	9,789	-	9,789
2	New Hartford	18	7	-	7
3	Litchfield	171	57	-	57
4	Harwinton	402	134	-	134
5	Burlington	414	138	-	138
6					
7					
8					
9					
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51					
52					
53					
54					
55	Total	30,005	10,125	-	10,125

Filed by Eversource Energy
(Commission File No. 001-05324) pursuant
to Rule 425 under the Securities Act of 1933
Subject Company: The Torrington Water Company

THE TORRINGTON WATER COMPANY LETTERHEAD

March 8, 2022

Dear Stockholder:

We are pleased to announce that on March 7, 2022, the Board of Directors of The Torrington Water Company (OTC Pink Sheets Trading Symbol: TORW) unanimously approved an Agreement and Plan of Merger (the "Agreement") with Aquarion Company ("Aquarion"), a wholly-owned subsidiary of Eversource Energy (NYSE: ES). Aquarion is a holding company based in Bridgeport, Connecticut with regulated water operations in Connecticut, Massachusetts, and New Hampshire. The Torrington Water Company ("TWC") is a public utility that provides water service to approximately 10,000 customers in the city of Torrington and the towns of Burlington, Harwinton, Litchfield and New Hartford, Connecticut.

Under the terms of the Agreement, which has been unanimously approved by the boards of directors of Aquarion and TWC, TWC would merge with and become a wholly-owned subsidiary of Aquarion, and the stockholders of TWC would receive in exchange for their TWC shares a number of validly issued, fully paid and nonassessable common shares, par value \$5.00 per share, of Eversource Energy. The exchange ratio ("Exchange Ratio") that determines the number of Eversource Energy common shares issued in the merger will float between 1.0241 and 1.07 IO and will be determined by dividing \$93.51 by Eversource's volume weighted average share price for IO full trading days ending on and including the second full trading day prior to closing date of the merger ("Eversource Share Value"). The Exchange Ratio becomes fixed at 1.0710 if the Eversource Share Value is less than \$87.32 and becomes fixed at 1.0241 if the Eversource Share Value is greater than \$91.32. An Exchange Ratio of 1.0710 implies a \$92.81 per share value based on the closing price of \$88.66 for Eversource Energy common shares on March 7, 2022, or a market premium of approximately 1.04% over TWC's \$45.50 closing price on March 7, 2022. Boenning & Scattergood, Inc. provided a fairness opinion to the Board of Directors of TWC. Based on an Exchange Ratio of 1.07 IO and the most recently declared dividends by TWC and Eversource Energy, TWC shareholders would receive an equivalent dividend of \$2.58 per share compared to their current dividend on TWC shares of \$1.38 per share.

The completion of the merger will require approval by the stockholders of TWC, and the TWC Board of Directors has resolved to recommend the adoption of the Agreement by the stockholders. The merger is also subject to the satisfaction of several other customary closing conditions, including the approval of the Connecticut Public Utilities Regulatory Authority. The parties plan to file for the approval of the Connecticut Public Utilities Regulatory Authority shortly, with an anticipated consummation of the merger by the end of 2022.

Within the coming weeks, you will be mailed a Proxy Statement/Prospectus for the TWC Stockholder Meeting, at which TWC stockholders will consider and vote with respect to the proposed merger.

Enclosed with this letter is the press release announcing the signing of the Agreement. The press release provides additional information that will answer many of your questions.

Sincerely yours,
Susan Suhanovsky
President

Forward-Looking Statements

This letter includes statements concerning The Torrington Water Company's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts, including statements regarding the planned merger with Aquarion Water Company, the timing of such transaction and benefits anticipated from such transaction. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Generally, readers can identify these forward-looking statements through the use of words or phrases such as "will," "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements involve risks and uncertainties that may cause actual results or outcomes to differ materially from those included in the forward-looking statements. Factors that may cause actual results to differ materially from those included in the forward-looking statements include, but are not limited to: the transaction is subject to conditions to closing, including regulatory approvals, that may not be satisfied; it may take longer than anticipated to consummate the transaction; we may not realize the benefits we anticipate from the transaction; unforeseen liabilities; risks relating to integration of the acquired business; and other presently unknown or unforeseen factors.

This Communication Does Not Constitute a Solicitation of Proxies

This communication does not constitute an offer to buy or solicitation of any offer to sell securities. This communication relates to a proposed business combination transaction between Aquarion Company and The Torrington Water Company. In connection with the proposed business combination, Eversource Energy will file a registration statement with the SEC. This communication is not a substitute for any registration statement, prospectus/proxy statement or other document Eversource Energy, Aquarion Company and/or The Torrington Water Company may file with the SEC in connection with the proposed transaction. INVESTORS AND SECURITY HOLDERS OF THE TORRINGTON WATER COMPANY ARE URGED TO READ CAREFULLY THE REGISTRATION STATEMENT, PROSPECTUS, PROXY STATEMENT AND OTHER DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT EVERSOURCE ENERGY, AQUARION COMPANY, THE TORRINGTON WATER COMPANY AND THE PROPOSED TRANSACTION. Investors and security holders may be able to obtain free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC's website at www.sec.gov. The materials may also be obtained for free by directing a written request to: Susan Suhanovsky, President, The Torrington Water Company, PO Box 867, Torrington, CT 06790, telephone (860) 489-4149. Investors should read the proxy materials/prospectus before making a decision regarding the merger.

This filing may be deemed solicitation material in respect of the proposed business combination transaction between Aquarion Company and The Torrington Water Company. The directors, trustees, executive officers and certain other members of management and employees of Eversource Energy, Aquarion Company and The Torrington Water Company may be deemed “participants” in the solicitation of proxies from stockholders of The Torrington Water Company in favor of the proposed merger. You can find information about Eversource’s trustees and executive officers in Eversource’s annual report on Form 10-K for the year ended December 31, 2021, which was filed with the SEC on February 17, 2022 and its proxy statement for its 2021 annual meeting filed with the SEC on March 26, 2021. Information regarding the persons who may, under the rules of the SEC, be considered participants in the solicitation of the stockholders of The Torrington Water Company in connection with the proposed merger will be set forth in the registration statement, prospectus/proxy statement or other documents filed with the SEC if any when they become available. You may obtain these documents (when they become available) free of charge at the SEC’s web site at www.sec.gov and from Susan Suhanovsky at The Torrington Water Company as described above.

About Aquarion Water Company:

Aquarion Water Company is the public water supply company for more than 700,000 people in 68 cities and towns in Connecticut, Massachusetts and New Hampshire. It is the largest investor-owned water utility in New England and among the seven largest in the U.S. Based in Bridgeport, CT, Aquarion has been in the public water supply business since 1857. Across its operations, Aquarion strives to act as a responsible steward of the environment and to assist the communities it serves in promoting sustainable practices. Aquarion Water Company is a wholly-owned subsidiary of Eversource.

For more information on Aquarion Water Company, please visit www.aquarionwater.com or www.facebook.com/aquarionwater.

VALLEY WATER SYSTEMS, INC.

Notes to Financial Statements
Years Ended December 31, 2020 and 2019

1. Description of the Company

Valley Water Systems, Inc. (the "Company"), a wholly owned subsidiary of New England Service Company ("NESC"), is a public utility distributing water to approximately 6,760 customers in the towns of Plainville, Farmington, and Southington, Connecticut area. As a public utility operating in Connecticut, the Company functions under rules and regulations prescribed by the State of Connecticut Public Utilities Regulatory Authority ("PURA").

2. Summary of Significant Accounting Policies***Basis of Presentation***

The Company maintains its accounts in accordance with the PURA Uniform System of Accounts as prescribed for Water Utilities Class A. The Company prepares its financial statements in accordance with accounting principles generally accepted in the United States of America which include the provisions of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 980, *Regulated Operations* ("ASC 980"). Under ASC 980, regulated companies defer costs and credits on the balance sheet as regulatory assets and liabilities when it is probable that those costs and credits will be recognized in the rate setting process in a period different from the period in which they would have been reflected in income by an unregulated company. These deferred regulatory assets and liabilities are then reflected in the income statement in the period in which the same amounts are reflected in rates charged for service.

Use of Estimates

The preparation of financial statements require management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported revenues and expenses. Accordingly, actual results could differ from these estimates.

Cash and Cash Equivalents

Cash and cash equivalents includes cash balances held in bank accounts and highly liquid debt instruments with maturities of three months or less at the time of purchase.

From time to time, the Company had on deposit at financial institutions cash and cash equivalents which exceed current federal deposit insurance limitations. The Company had not experienced any losses in such accounts to date and believes it is not exposed to any significant credit risk on cash and cash equivalents.

Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. The Company continuously monitors the creditworthiness of customers and establishes, when necessary, an allowance for amounts that may become uncollectible in the future based on current economic trends, historical payment and bad debt write-off experience.

Page 415			
CONSUMPTION INFORMATION (Dover Division)			
1. Estimated total population of territory covered by franchise			
2. Estimated population reached by the distributing system			
3. Estimated population actually supplied			1,809
4. Total consumption during the year in gallons			50,866,736
5. Average daily consumption (in gallons)			138,429
6. Day on which the greatest amount was pumped			8/13/2020
7. Gallons pumped on above day			368,000
8. Week during which greatest amount was pumped		8/9/20-8/15/20	
9. Gallons pumped during above week			1,906,000
10. Gallons per day per service			218
11. Consumption metered			50,866,736
12. Consumption metered,		100 percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
637	1	0	636
Name of City, Town, or District		Number of Customers as of December 31	
Dover, MA		636	
Sixty-four of these connections represent contractual service to Town of Dover plus one master meter at town connection.			

Page 415			
CONSUMPTION INFORMATION (Plymouth Division)			
1. Estimated total population of territory covered by franchise			2,513
2. Estimated population reached by the distributing system			2,513
3. Estimated population actually supplied			2,513
4. Total consumption during the year (GALS)			101,211,880
5. Average daily consumption			294,414
6. Day on which the greatest amount was pumped			7/27/2020
7. Gallons pumped on above day			724,300
8. Week during which greatest amount was pumped		7/26/2020-8/1/2020	
9. Gallons pumped during above week			4,544,900
10. Gallons per day per service			219
11. Consumption metered			101,211,880
12. Consumption metered,		100% percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
853	0	9	862
Name of City, Town, or District		Number of Customers as of December 31	
Plymouth, MA		862	

Page 415			
CONSUMPTION INFORMATION (Springdale Division)			
1. Estimated total population of territory covered by franchise			115
2. Estimated population reached by the distributing system			115
3. Estimated population actually supplied			115
4. Total consumption during the year (GALS)			7,463,606
5. Average daily consumption			20,448
6. Day on which the greatest amount was pumped			6/27/2020
7. Gallons pumped on above day			88,000
8. Week during which greatest amount was pumped		6/21/20-6/27/20	
9. Gallons pumped during above week			407,000
10. Gallons per day per service			418
11. Consumption metered			7,463,606
12. Consumption metered,		100 percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
41	0	1	42
Name of City, Town, or District		Number of Customers as of December 31	
Dover, MA		42	

A-6 LIST OF TOWNS SERVED

List by operating divisions the towns served directly, indicating those in which franchise is for limited area by an asterisk (*) after name. Give population of the area and the number of customers.

Line No.	Town	Population of Area	Number of Customers	Line No.	Town	Population of Area	Number of Customers
					Sub Totals Forward:	30,120	725
1	Belmont N. H.	7,356	160	16			
2	Bow, N.H.	7,519	95	17			
3	Carroll, N.H.	763	409	18			
4	Belmont, NH	7,356	22	19			
5	Gilford, NH	7,126	39	20			
6				21			
7				22			
8				23			
9				24			
10				25			
11				26			
12				27			
13				28			
14				29			
15	Sub Totals Forward:	30,120	725	30	Total	30,120	725

A-7 PAYMENTS TO INDIVIDUALS

List names of all individuals, partnerships, or corporations to whom payments totaling \$10,000 or more for services rendered were made or accrued during the year, and the amount paid or accrued to each. Where payments or accruals to the individual members of a partnership or firm together total \$10,000 or more, list each individual and the amount paid or due each.

Line No.	Name	Address	Amount
1	NESC	Plainville., Ct.	222,877
2	City of Laconia	Laconia, NH	91,004
3	Rowell's Services	Northfield, NH	57,242
4	Eversource	Boston, MA	43,226
5	CoBank	Greenwood Village, CO	43,000
6	Stephen P. St. Cyr & Associates	Biddeford, Me.	40,959
7	NH Brown Law	Somersworth, NH	37,206
8	PKF O'Conner Davies	Shelton, Ct.	36,020
9	State of NH	Concord, NH	16,544
10	Fortin Construction	Londonderry, NH	16,155
11	Town of Carroll	Carroll, NH	15,201
12	Town of Belmont	Belmont, NH	14,953
13	Harcros Chemicals	Chicago, IL	12,909
14			
15			
16			
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22			
23			
24			
25			
26			
27			
28			
29			
30	Total		\$ 647,296

Page 415

CONSUMPTION INFORMATION

1. Estimated total population of territory covered by franchise	1100
2. Estimated population reached by the distributing system	1100
3. Estimated population actually supplied	1100
4. Total consumption during the year	31,956,826 gals.
5. Average daily consumption	87,553 gals.
6. Day on which the greatest amount was pumped	7/20/2020
7. Gallons pumped on above day	173,596
8. Week during which greatest amount was pumped	7/16/20-7/25/20
9. Gallons pumped during above week	975,066
10. Gallons per day per service	180
11. Consumption metered	31,956,826 gals.
12. Consumption metered,	100 % of total consumption

13. CUSTOMERS

Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
487	0		487

Name of City, Town, or District	Number of Customers as of December 31
Sheffield, MA *487 metered customers, 3 fixed fee customers	490

Wastewater treatment is provided by the Borough of West Chester pursuant to a Sewer Capacity Agreement dated November 14, 2017, by and between the Borough and East Bradford Township. Copies of West Chester's 2017 Chapter 94 Reports to DEP for the Goose Creek WWTP and for the Taylor Run WWTP are attached hereto as Exhibit E3 and Exhibit E4.

15. The Goose Creek WWTP has a permitted treatment capacity of 1.672 MGD. The Taylor Run WWTP has a permitted treatment capacity of 1.50 MGD. The elevation of the Goose Creek WWTP is generally about EL 370. The elevation of the Taylor Run WWTP is generally about EL 260. The elevation of the Requested Territory ranges from approximately EL 365 to EL 280.

16. Water service in the Requested Territory is provided by both Aqua Pennsylvania, Inc. and private wells.

17. The original cost, by year and major plant category, of the East Bradford Township used and useful plant in service is \$8,294,931 with a related calculation depreciation reserve of \$2,820,983. The original cost value includes a series of capped sewers along the North Benjamin Drive area of the Township. The capped sewers include approximately 3,300 linear feet of 8" Gravity PVC pipe and 20 manholes, with an estimated original cost value of approximately \$100,000 as estimated by Aqua. The pipe and manholes are included in the totals on page 2-11 and 2-12 of Exhibit W. Aqua will categorize the capped sewer pipe and manholes as plant held for future use in its asset allocation upon closing. The area of capped sewers along North Benjamin Drive is not included in the Requested Territory.

18. Tentative journal entries to record the transaction are presented in Section IV.

IV. ASSET PURCHASE AGREEMENT

19. The *Assets Purchase Agreement* is dated December 20, 2017. The *First Amendment to Assets Purchase Agreement* is dated April 18, 2018. The purchase price is Five Million Dollars

(\$5,000,000.00). In addition to the purchase price, Section 1.5 of the Agreement provides that Aqua will assume certain defined liabilities and pay certain out-of-pocket costs incurred by East Bradford Township.

20. The purchase price and Agreement are based on arm's length negotiations. Aqua and East Bradford Township are not affiliated with each other. Aqua will use short term debt initially for the purchase of the assets with the expectation that the short term debt will be converted to long term debt and equity capital at a later date.

21. The wastewater system assets to be acquired are the "Assets" and have the meaning specified in Section 1.1 of the Agreement. The Assets include the assets, properties and rights of East Bradford Township that comprise the wastewater system or that are owned by East Bradford Township and used by it solely in connection with operation of the system.

22. "Excluded Assets," which are those assets not being transferred to Aqua, have the meaning specified in Section 1.4 of the Agreement. Excluded Assets include customer service laterals that run from the curb area to individual customer residences or structures; piping and fixtures internal to each customer residence or structure; cash and cash equivalents; and the items set forth in Schedule 1.4 of the Agreement.

23. "Assumed Liabilities" has the meaning specified in Section 1.6 of the Agreement and include the liabilities and obligations under the Assumed Contracts that arise after Closing, liabilities incurred or arising from and after Closing under or from failure to comply with permits, approvals or licenses related to the system that are transferred to Aqua and the obligation to provide wastewater service after Closing. The Assumed Contracts, which are listed in Schedule 1.6 of the APA and attached hereto as **Exhibit F1** and **Exhibit F2**, are the Sewer Capacity Agreement dated November 14, 2017, by and between the Borough of West Chester and East Bradford Township and the Intergovernmental Cooperation Agreement dated March 15, 1999, between East Bradford and Birmingham Township.

East Bradford Township

	# of Customers	Annual Gallons Treated (2017)
Residential- Single Family	399	23,783,560
Residential- Townhomes	814	36,390,635
Commercial		
Bradford Retail - The Bistro		112,800
Bradford Retail - Strip Stores		688,000
Brookworth Plaza - Dunkin Donuts		147,200
Brookworth Plaza - CVS		35,300
Brookworth Plaza - empty building		-
Brookworth Plaza - Strip Stores		142,000
Brookworth Plaza - PNC Bank		17,000
Countryside Food Mart		52,700
Antique Ice Museum		3,600
Mrs. Mike's Restaurant		103,110
Brandywine Hall Nursing Home		8,281,000
Daily Local News - now empty building		24,400
Bradford Plaza - Strip Stores		1,991,430
Bradford Plaza - Giant Food Store		2,527,700
Bradford Plaza - Walgreens		47,000
Bradford Plaza - Giant Gas Station		6,200
Chester County Art Association		120,100
Industrial		
Diesel Systems		66,300
Chem Service		173,400
Other Class(?)*		
Goddard School		252,800
Hillsdale Elementary School		649,700
WCU S Campus Apts - 144		24,200
WCU S Campus Apts - 167		583,900
WCU S Campus Apts - 168		500,900
WCU S Campus Apts - 169		441,900
WCU S Campus Apts - 170		570,900
WCU S Campus Apts - 171		318,900
WCU S Campus Apts - 172		422,000
WCU S Campus Apts - 173		306,400
WCU S Campus Apts - 174		424,500
WCU S Campus Apts - 175		323,400
WCU S Campus Apts - 176		340,000
WCU S Campus Apts - 177		356,000
University Student Housing 1		4,463,500
University Student Housing 2		5,429,000
Total		90,121,435

*May include church, school, public, etc... (please insert a line for each)

420,000
153,300,000

35
399
814
1,248

1 **Q. How many customers will the acquisition add?**

2 A. The acquisition of East Norriton will add 4,966 customers to Aqua’s existing 28,000
3 wastewater customers. This is an increase in customers of 17.7% (or about 20%).²³

4 **Q. Will the acquisition increase rates for the customers to be acquired?**

5 A. Yes. Aqua witness Packer states that he reasonably expects that rates for East Norriton
6 customers will increase under Aqua ownership.²⁴ As discussed above, Aqua calculates
7 that if the entire revenue deficiency resulting from the acquisition is applied to East
8 Norriton Township customers, the adjusted average bill for customers using four thousand
9 gallons per month would increase from approximately \$39 per month to \$52 per month,
10 which would be a 35% rate increase.²⁵

11 **Q. Will the acquisition increase rates for existing Aqua customers?**

12 A. Yes. Mr. Packer’s testimony shows that, as a result of the acquisition, rates for existing
13 Aqua water customers and existing Aqua wastewater customers will increase if the revenue
14 deficiency is not fully borne by the East Norriton Township customers. Mr. Packer’s
15 schedules show estimated increases to existing total Aqua water and wastewater customers
16 ranging from \$0.17 per month to \$1.66 per month (\$2.04 per year to \$19.92 per year).²⁶ If
17 the costs were spread to only existing wastewater customers, and not water customers, the

²³ Exhibit U, Direct Testimony of William C. Packer, p. 9, lines 2-3 and 11-12, p. 16, lines 11-12.

²⁴ Exhibit U, Direct Testimony of William C. Packer, p. 18, lines 17-20 and Appendix A, p.1; Response to OCA-II-4, Attachment 1, p. 22 (attached as OCA Exhibit DJG-12).

²⁵ Exhibit U, Direct Testimony of William C. Packer, Appendix A, pp. 1-2 (\$38.52 + \$13.42 = \$51.94). ($\$13.42 \div \$38.52 \times 100 = 34.84\%$).

²⁶ Exhibit U, Direct Testimony of William C. Packer, Appendix A, p. 1.

1 **Q. Describe the scope and organization of your testimony.**

2 A. My testimony addresses the application filed by Aqua Pennsylvania Wastewater, Inc.
3 (“Aqua” or the “Company”) for the acquisition of the East Norriton Township (the
4 “Township”) wastewater collection system assets. My testimony responds to the fair
5 market value (“FMV”) approaches addressed in the testimonies of Harold Walker, III of
6 Gannett Fleming, who sponsors the FMV appraisals commissioned by the Company, and
7 Jerome C. Weinert, who sponsors the appraisal commissioned by the Township. I also
8 discuss the sufficiency of the notices sent to the customers of Aqua and the Township
9 regarding the impact on rates of the proposed acquisition.

II. EXECUTIVE SUMMARY

A. Overview

10 **Q. Please summarize Aqua’s application in this proceeding.**

11 A. Aqua’s application proposes to acquire the Township’s wastewater assets under Sections
12 1102 and 1329 of the Public Utility Code (the “Code”). According to Section 1329(c)(2)
13 of the Code, the ratemaking rate base is the lesser of the negotiated purchase price and the
14 average of two FMV appraisals. The FMV estimated by Gannett Fleming and AUS
15 Consultants is \$24.2 million and \$25.1 million, respectively. The purchase price negotiated
16 by Aqua and the Township is \$21 million. Thus, the proposed rate base in the application
17 is \$21 million.

Report by Class

Account	Name Service Address	Tax ID	Book	Status	Alert Code
97990.00	F M BROWN SONS INC 790 DANIEL BOONE ROAD	43-5345-07-68-8539 BIRDSBORO	PA	A 19508-8737	
99991.00	DIEROLF, CANDACE 21 PINE AVENUE	BIRDSBORO	PA	A 19508	
99992.00	TELFORD, MARK 19-6 CRANBERRY RIDGE	READING	PA	A 19606-3934	

Total Class: R: 8,708

Class: TRAILER PARK

20000.00	KLIEWER, KIM B 4851 PERKIOMEN AVENUE	43-5325-08-79- READING	100 PA	A 19606	
(610)670-0191 20010.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34- READING	201 PA	A 19606-3655	
20020.00	BORDIC MOBILE HOME PARK 214 BORDIC ROAD	43-5335-09-16- READING	200 PA	A 19606-3605	
20030.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-10-35- READING	201 PA	A 19606-3655	
20060.00	ALSACE TOWNSHIP 240 SPIES CHURCH ROAD	READING	101 PA	A 19606	
20070.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34-2494 READING	PA	A 19606-3655	
91230.00	PENN VIEW MOBILE PARK BROADWAY AVENUE	43-5327-14-42- READING	200 PA	A 19606	
(610)779-4202					

Total Class: T: 7

Total: 8,984

Exeter Township supervisors agree to sell municipal wastewater system for \$96 million

 readingeagle.com/news/article/exeter-township-supervisors-agree-to-sell-municipal-wastewater-system-for-96-million

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The sale to Pennsylvania American Water Co. will keep taxes steady for 10 years and do other things for Exeter, the township manager said.

Written by Mike Urban
Exeter Township, PA —

The Exeter Township supervisors have agreed to sell the township's wastewater treatment plant and system to a private company for \$96 million, a move they expect will save taxpayers money and put the township on much better financial footing.

The supervisors voted 4-1 on April 23 to approve the sale to Pennsylvania American Water Co., which supplies water to the township and operates 15 wastewater treatment systems statewide.

The two sides must finalize the asset purchase agreement, and the sale will require Pennsylvania Utility Commission approval, meaning the earliest the company is likely to take ownership would be early next year.

Township Manager John A. Granger said that if the sale goes through as planned, it will allow the township to hold real estate taxes steady for 10 years or more; pay for future capital projects including equipment replacement, township building relocation and storm sewer improvements; and still leave \$48 million in the bank.

The current property tax rate is 2.14 mills, but that would have increased 32.6 percent to 2.8 mills in 2019 if the township retained ownership of the plant, he said.

The township is expected to raise sewer rates 29 percent before the sale is completed, but that rate hike would likely have been higher if the township held onto the system and made necessary upgrades, said Supervisor John Cusatis.

And the supervisors plan to enact a homestead tax exemption that would more than cover the rate increase for most homeowners, he said.

There are about 9,000 properties in Exeter connected to the wastewater system, and Pennsylvania American spokesman Terry M. Maenza said that they shouldn't notice any changes in sewer service once the company takes control of the system.

"It should be seamless," he said.

The company plans to retain the township's six wastewater employees, he said.

Cusatis and fellow Supervisors Lisa VanderLaan, William F. White and David G. Speece Jr. voted for the sale, saying it was a tough decision but the economic benefits were too good to turn down.

"The sale will pay off the library and sewer debt, stabilize the tax base and improve the township's credit rating," Cusatis said.

Supervisor Gary E. Lloyd Jr. voted against the sale, saying he didn't want to lose the valuable asset.

Cusatis said that most Exeter residents he spoke with support the move, but at the April 23 meeting several expressed concern about selling public property to private industry and giving up control of the wastewater system.

A written handout from resident Sherrie Greene noted that: "I have done some research and read that many municipalities have taken this route, then regretted it later. Once our sewer system is sold, it is gone forever and we cannot get it back."

Pennsylvania American, headquartered in Hershey, is a subsidiary of American Water Works Co., based in Vorhees, N.J.

This would be Pennsylvania American's first wastewater treatment system in Berks.

(Correspondent Valdis I. Lacin contributed to this story.)

Contact Mike Urban: 610-371-5023 or murban@readingeagle.com.

- 1 1. The collection of a DSIC prior to inclusion of the acquired assets in a base
2 rate case;
- 3 2. The accrual of Allowance for Funds Used During Construction (AFUDC)
4 on non-DSIC eligible post-acquisition improvements; and
- 5 3. The deferral of depreciation for book and ratemaking purposes on non-
6 DSIC eligible post-acquisition improvements.

7
8 **Q. Please briefly summarize the Acquisition Transaction that the Joint Applicants**
9 **are proposing.**

10 A. Under the terms of the Proposed Transaction, PAWC would acquire the wastewater
11 utility assets of Kane for \$17.56 million.

12
13 **Q. Please describe the Kane wastewater utility.**

14 A. Kane owns and operates a sanitary wastewater collection system that provides
15 sanitary wastewater service to approximately 2,019 customers in Kane Borough and
16 a portion of Westmore Township in McKean County. The breakout of Kane's
17 customer count is: 1,847 residential, 162 commercial, 3 industrial, and 7 municipal.
18 The \$17.56 million purchase price for a wastewater utility assets serving 2,019
19 customers equates to a cost of approximately \$8,700 per customer.

20
21 **Q. Does the Application provide the terms of the Proposed Transaction?**

22 A. Yes, the Asset Purchase Agreement ("APA") dated November 4, 2019 was included
23 with the Application. The APA states that the purchase price is Seventeen Million,
24 Five Hundred Sixty Thousand Dollars (\$17,560,000). The Application indicates that
25 the purchase price is based on arm's length negotiations. PAWC and Kane Borough
26 are not affiliated with each other.

Customer Number	Edu Purchased	Service Address	Group Code	Drainage Basin	SPA Amt	SPA Qty	SWR Amt	SWR Qty	Svr Base Amt	PEN Amt	INT Amt
12133	16	3793 900 FOXMEADOW DR	King Road	SOUTHEAST (6)	-	116,300.00	F	-	\$ 1,348.80	-	-
12134	16	3794 1000 FOXMEADOW DR	King Road	SOUTHEAST (6)	-	94,400.00	F	-	\$ 1,348.80	-	-
12135	16	3795 1100 FOXMEADOW DR	King Road	SOUTHEAST (6)	\$ 216.44	153,200.00	F	-	\$ 1,348.80	-	-
12136	16	3796 1200 FOXMEADOW DR	King Road	SOUTHEAST (6)	\$ 69.15	130,400.00	F	-	\$ 1,348.80	-	-
12139	16	3799 1500 FOXMEADOW CIR	King Road	SOUTHEAST (6)	\$ 43.95	126,500.00	F	-	\$ 1,348.80	-	-
12140	16	3800 1600 FOXMEADOW CIR	King Road	SOUTHEAST (6)	-	82,300.00	F	-	\$ 1,348.80	-	-
12141	16	3801 1700 FOXMEADOW CIR	King Road	SOUTHEAST (6)	-	94,300.00	F	-	\$ 1,348.80	-	-
12142	16	3802 1800 FOXMEADOW CIR	King Road	SOUTHEAST (6)	-	92,500.00	F	-	\$ 1,348.80	-	-
12143	16	3803 1900 FOXMEADOW DR	King Road	SOUTHEAST (6)	-	111,200.00	F	-	\$ 1,348.80	-	-
12144	16	3804 2000 FOXMEADOW CIR	King Road	SOUTHEAST (6)	\$ 8.42	121,000.00	F	-	\$ 1,348.80	-	-
12145	16	3805 2100 FOXMEADOW CIR	King Road	SOUTHEAST (6)	\$ 160.88	144,600.00	F	-	\$ 1,348.80	-	-
12146	16	3806 2200 FOXMEADOW DR	King Road	SOUTHEAST (6)	-	101,000.00	F	-	\$ 1,348.80	-	-
12147	16	3807 2300 FOXMEADOW DR	King Road	SOUTHEAST (6)	\$ 176.38	147,000.00	F	-	\$ 1,348.80	-	-
12148	16	3808 2400 FOXMEADOW CIR	King Road	SOUTHEAST (6)	\$ 94.99	134,400.00	F	-	\$ 1,348.80	-	-
12149	16	3809 2500 FOXMEADOW CIR	King Road	SOUTHEAST (6)	\$ 107.26	136,300.00	F	-	\$ 1,348.80	-	-
275	17	161 640 N LEWIS RD	King Road	SOUTHEAST (6)	\$ 1,932.95	306,700.00	F	-	\$ 84.30	-	-
12005	18	3674 7-27 W RIDGE PIKE/STRP ML	King Road	282 GRATERFORD RD (20)	\$ 63.37	92,100.00	F	-	\$ 927.30	-	-
12065	18	3772 15 KEYSTONE DR	King Road	TRINLEY (5)	\$ 1,198.45	193,000.00	F	-	\$ 84.30	-	-
60965	18	5199 256 SWAMP PIKE/SCHOOL	Possum Hollow	RAVENS CLAW (18)	\$ 2,452.98	387,200.00	F	-	\$ 84.30	-	-
276	19	162 339 N LEWIS RD	King Road	SOUTHEAST (6)	\$ 2,015.24	334,400.00	F	-	\$ 252.90	-	-
12039	19	3706 W RIDGE PIKE/STRIP/BANK	King Road	SOUTH LIMERICK (3)	\$ 1,256.59	202,000.00	F	-	\$ 84.30	-	-
12084	19	3745 542 N LEWIS RD	King Road	TRINLEY (5)	\$ 1,373.73	272,500.00	F	-	\$ 674.40	-	-
70011	20	3411 70 BUCKWALTER RD/1350/APPLEB	King Road	TRINLEY (5)	\$ 112.65	32,400.00	F	-	\$ 168.60	-	-
11771	20	5389 206 JONES BLVD/MICROCOAX	Possum Hollow	BROOKE EVANS (16)	\$ 3,375.47	530,000.00	F	-	\$ 84.30	-	-
12040	21	3445 70 BUCKWALTER RD/1250/TEXAS	King Road	SOUTHEAST (6)	\$ 14,938.23	2,319,900.00	F	-	\$ 84.30	-	-
12113	23	3707 22 ANCHOR PARKWAY	King Road	SOUTHEAST (6)	\$ 2,419.39	382,000.00	F	-	\$ 84.30	-	-
170	24	64 677 ELM ST	Royersford	ORCHARD TERRACE (OT)	\$ 1,208.14	194,500.00	F	-	\$ 84.30	-	-
12208	24	3863 430 W LINFIELD TRAPPE RD	King Road	TRINLEY (5)	\$ 4,782.46	747,800.00	F	-	\$ 84.30	-	-
2573	28	794 1101 ENTERPRISE DR	King Road	TRINLEY (5)	\$ 1,182.95	190,600.00	F	-	\$ 84.30	-	-
10679	29	2502 196 W RIDGE PK/FLEA MRKT	King Road	RIDGE PIKE (10)	\$ 629.07	247,000.00	F	-	\$ 1,686.00	\$ 1.80	-
12214	30	3869 420 LINFIELD TRAPPE RD	King Road	TRINLEY (5)	\$ 852.20	139,400.00	F	-	\$ 84.30	-	-
11727	34	5410 14 W LIGHTCAP RD	Possum Hollow	POSSUM HOLLOW (17)	\$ 7,741.14	1,205,800.00	F	-	\$ 84.30	-	-
216	36	107 475 N LEWIS RD	King Road	SOUTHEAST (6)	\$ 5,421.59	846,736.00	F	-	\$ 84.30	-	-
12101	52	3761 88 ANCHOR PARKWAY	King Road	SOUTHEAST (6)	\$ 3,921.34	614,500.00	F	-	\$ 84.30	-	-
10357	59	2292 420 W LINFIELD TRAPPE RD	King Road	TRINLEY (5)	\$ 3,746.92	587,500.00	F	-	\$ 84.30	-	-
282	60	167 350 S LEWIS RD	King Road	TRINLEY (5)	\$ 5,568.64	869,500.00	F	-	\$ 84.30	-	-
10630	80	2465 827 N LEWIS RD	King Road	SOUTH LIMERICK (3)	\$ 3,791.50	594,400.00	F	-	\$ 84.30	-	-
11378	97	3091 FOX RIDGE APTS	King Road	SOUTH LIMERICK (3)	-	150,200.00	F	-	\$ 6,744.00	-	-
10913	115	2685 165 W RIDGE PIKE/TRLR PK	King Road	SOUTH LIMERICK (6)	\$ 2,050.04	1,043,000.00	F	-	\$ 8,177.10	-	-
70019	137	5397 EXELON LIM GEN STA	Possum Hollow	POSSUM HOLLOW (17)	\$ 6,018.69	1,792,000.00	F	-	\$ 9,694.50	-	-
70022	200	5400 18 LIGHTCAP RD	Possum Hollow	POSSUM HOLLOW (17)	\$ 4,006.31	1,278,500.00	F	-	\$ 7,418.40	-	-
5416	8402				\$ 299,707.92	89,160,697	\$ 25,039.14	7,288,556	\$ 600,843.05	\$ 14,296.74	\$ 1,169.98

ASSET PURCHASE AGREEMENT

7. Aqua and Limerick are parties to an Asset Purchase Agreement dated November 16, 2016. Aqua Exhibit 1, Application ¶ 5 and ¶ 18; *see also* Aqua Exhibit No. 1, Exhibit C.

8. The negotiated purchase price, which is based on arms' length negotiation, is Seventy-Five Million One Hundred Thousand Dollars (\$75,100,000.00). Aqua and Limerick are not affiliated with each other. Aqua Exhibit No. 1, Application ¶ 18 and Aqua St. No. 1 at 6, lines 6 through 10.

9. Aqua will use short term credit lines to fund the transaction. The short term credit funding will be converted to a mix of long-term debt and equity capital shortly after closing. Aqua St. No. 1 at 7, lines 18 through 20; *see also* Aqua Exhibit No. 1, Application ¶ 18.

ASSETS BEING TRANSFERRED

10. The wastewater system assets to be transferred are the "Acquired Assets" and have the meaning specified in Section 2.01 of the Agreement. The Acquired Assets include all real property Limerick owns and uses in the operation of the wastewater system and all sanitary wastewater related treatment and conveyance facilities, including the Possum Hollow Waste Water Treatment Plant ("PHWWTP"), the King Road Waste Water Treatment Plant ("KRWWTTP") and all pipes, pumping stations, manholes and pipelines and billing and collections related assets necessary to run the system. Aqua Exhibit No. 1, Application ¶ 19.

11. Acquired Assets also include the contracts identified on Schedule 4.15 of the Agreement to which Limerick is a party (the "Assigned Contracts"). Since contract parties, other than Limerick, are identified by name, Schedule 4.15 and the Assigned Contracts are considered CONFIDENTIAL. Copies of CONFIDENTIAL Schedule 4.15 and the CONFIDENTIAL Assigned Contracts were included with the Application as Confidential Exhibit F and admitted into evidence as CONFIDENTIAL Aqua Exhibit No. 4. Aqua Exhibit No. 1, Application ¶ 20 and Tr. 13 and 20.

\$5,572,770. Exh. A-14-a, SWPA St. 1 at 11-12. The allocated purchase price for the water system is \$4,734,800 and the wastewater system is \$4,765,200. Appendix A-14, SWPA St. 2 at 4-5.

The valuation experts were paid \$59,145 for the Fair Market Value Appraisal Reports for both the water and wastewater systems. Exh. A-8-a. SWPA also indicates that it will incur transaction and closing costs of approximately \$1,000,000 between the Water System and the Wastewater System, which will be included in rate base. Appendix A-14, SWPA St.1 at 5-6; Appendix A-12.

OCA will examine the ratemaking rate base claims to determine if the claims are reasonable and appropriate for ratemaking purposes.

2. Proposed Rates: SWPA proposes to charge customers of the Mahoning Township system the Mahoning Township water and wastewater rates in effect at closing. Application at 6, 11; Appendix A-13. Those rates will remain in effect until SWPA's next base rate case but SWPA may impose any fee or surcharge permitted by its Commission-approved tariff. Id.

The proposed rates do not appear to match the existing Mahoning Township rates. The OCA will investigate this apparent discrepancy. The OCA will investigate the impacts on the current customers as well as on Mahoning Township customers of the various assumptions and proposals.

3. The OCA submits that additional information is necessary to determine how the transaction will substantially and affirmatively benefit Suez's existing customers.

4. Conditions: Whether any conditions should be imposed upon the proposed transfer to ensure that Suez's customers are treated in a fair and just manner in accord with Pennsylvania law and Commission rules and regulations.

MAHONING TOWNSHIP CUSTOMER LIST

Customer No	Name	Service Address	Service	SWR EDUs	EDU	Count
11470.01	T & S REALTY	304 HOLLOW DR	Sewer	1	1	1431
11471.01	T & S REALTY	306 HOLLOW DR	Sewer	1	1	1432
11472.01	T & S REALTY	308 HOLLOW DR	Sewer	1	1	1433
11473.01	T & S REALTY	310 HOLLOW DR	Sewer	1	1	1434
11474.01	T & S REALTY	312 HOLLOW DR	Sewer	1	1	1435
11475.01	DAVID & JOANNE BROOKO\	32 TERRE LANE	Sewer	1	1	1436
11476.02	JAYA SUGUNARAJ & JESSIT\	214 ABBEY RD	Sewer	1	1	1437
11478.01	DAVID BULBIN & BARBARA	74 WOODLAND DR	Sewer	1	1	1438
11479.01	JEFFREY MOLINARO	1318 BLOOM RD	Sewer	1	1	1439
11480.01	CRYSTAL DOMETITA	91 WOODLAND DR	Sewer	1	1	1440
11482.01	AYUSA SINHA	672 LOWER ST	Sewer	1	1	1441
11483.01	MADIAN YAHYA	676 LOWER ST	Sewer	1	1	1442
11484.01	JEFF WATSON	168 KASEVILLE RD	Sewer	1	1	1443
11485.01	ANWER & SARAH QURESHI	656 LOWER ST	Sewer	1	1	1444
11486.01	ROSS & ASHLEY PETERS	83 TERRE LN	Sewer	1	1	1445
11488.01	QUESHI ANWER	664 LOWER STREET	Sewer	1	1	1446
11489.01	MATHUR HERSH	660 LOWER STREET	Sewer	1	1	1447
11490.01	PRASANNA SANKEPALLI & S	668 LOWER ST	Sewer	1	1	1448
11491.01	MARK GATSKI & CATHERINE	82 DELWOOD DR	Sewer	1	1	1449
11492.01	JONATHAN & LAURA SPAHF	78 TERRE LN	Sewer	1	1	1450
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	Sewer	0	1	1451
TOTALS					2195	1451

Table Lists - Meter Counts by Customer Type/Meter Size

5/30/18

Commercial
Water Meters
70

Residential
Water Meters
1116

2" + 1" = 15 Wesner Lane added 5/24/18

Total Meters = 1186

Report Criteria:
Customer.Final bill date = {IS NULL}

Customer #	Name	Service Address	Meter ID	Customer Type	Size
11104.01	ANIMAL CARE	32 ENTERPRISE DR	0049503582	Commercial	1
11107.01	EMMANUEL HOME	MONTOUR BLVD. 11107	8280982952	Commercial	1
11120.02	REDEEMER ORTHODOX PRESBYTER	1820 MONTOUR BLVD.	1540802894	Commercial	1
11121.01	FAB-TEX	29 WOODBINE LANE	0004695133	Commercial	1
11137.01	GEISINGER HEALTH SYSTEMS - MCB	MCBRIDE	1541355520	Commercial	1
11151.01	ROAT-KRINER ROAT	1133 BLOOM RD.	1541286282	Commercial	1
11157.01	TRINITY METHODIST CHURCH	84 LOMBARD AVE	1018010545	Commercial	1
11159.01	VINTAGE KNOLLS ASSISTED LIVING	9 JUSTIN DR 101	1541313242	Commercial	1
11160.01	GEISINGER COMMUNITY HEALTH - VI	44 WOODBINE LANE	0048920994	Commercial	1
11165.01	RINEHART DENTAL	20 WESNER LANE	1481726108	Commercial	1
Total 1:					10
Total 1.5:					10
11115.01	BUSY BEAVER	23 WESNER LN	0053635505	Commercial	1.5
11125.01	MEADOWS COMM.	77 TOWER VIEW CIRCLE	0051583844	Commercial	1.5
11175.01	SHANER HOTEL GRP	43 PINE BARN PLACE	1832339361	Commercial	1.5
11170.01	HAWKINS CHEVROLET	1856 MONTOUR BLVD.	1852732193	Commercial	1.5
11135.01	GEORGE HEIM CAR WASH	1802 MONTOUR BLVD	1541551330	Commercial	1.5
Total 1.5:					5
Total 5:					5
11165.01	ATLANTIC EQUIP	15 ENTERPRISE DR	0048304212	Commercial	2
11105.01	EMMANUEL NAZARETH	1707 MONTOUR BLVD. 11108	1007034764	Commercial	2
11175.01	T & S REALTY	1083 BLOOM RD	0046645520	Commercial	2
11126.01	GUM REALTY GROUP LLC	74 SCHOOL HOUSE RD STE 101	0022379100	Commercial	2
11134.01	MARIA JOSEPH AL CENTER	MONTOUR BLVD. 11134	1832120637	Commercial	2
11136.01	GEISINGER HEALTH SYSTEMS - HUG	HUGHES CENTER SOUTH	0052693508	Commercial	2
11146.01	SHANER HOTEL GRP	43 PINE BARN PLACE A	0043702654	Commercial	2
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	1548931502	Commercial	2
Total 2:					8
11101.01	NAILS TO TAILS GROOMING SALON	938 BLOOM RD.	1810172132	Commercial	3/4
11109.01	BROKESHIRE JOHN	769 BLOOM RD.	1541276964	Commercial	3/4
11111.01	CERO JAMES PATRICK	795 BLOOM RD	1541282452	Commercial	3/4
11113.01	COLE'S HARDWARE	25 ENTERPRISE ROAD	1541310306	Commercial	3/4
11115.01	HAWKINS JAMES	1581 MONTOUR BLVD.	1852924202	Commercial	3/4
11116.01	HAWKINS COLLISION CENTER	MONTOUR BLVD. 11116	1541425432	Commercial	3/4

21. Second, Ms. Vicari used inconsistent purchase price values to calculate the average costs per customer. Id. at 21-22.

(a) Incorrect Use of Projected Customers

Ms. Vicari used an incorrect number of customers for MACM. In Appendix A-17-a, it states that MACM has 12,780 customers, yet Ms. Vicari used 21,953 customers. OCA St. 1 at 20-21. She explained that she used that number because she counted the individual connections for each bulk customer. Id. She never supplied her calculation of the individual connections for the four bulk customers. Id.

Ms. Vicari does not necessarily apply that logic to the other acquisitions in her sample group by reflecting individual connections for any bulk customers. OCA St. 1S at 16-17. By using the actual number of customers for the other systems, she achieved a higher average cost per customer. She then multiplied this overstated cost per customer times the unsupported number of bulk customers' individual connection, compounding the error. Ms. Everette was not able to confirm whether all of the customer numbers in Ms. Vicari's sample group were consistently counted. She therefore used the 21,953 customer number used by Ms. Vicari to minimize the issues in the proceeding.

(b) Inconsistent Purchase Price Values

Similar to the problem with the customer count, MACM witness Vicari did not use consistent purchase price values. OCA St. 1 at 21-22. For the comparative acquisitions, she used the purchase price plus the value of capital improvements required by the agreement of sale. For MACM, however, she uses only the purchase price and does not consider the \$62.7 million of capital investments that PAWC anticipates making over the next 10 years. Including the cost



McKeesport sewer system to be sold for \$156 million

September 16, 2016 12:00 AM

By Deana Carpenter

The Municipal Authority of the City of McKeesport has agreed to sell its sewer system to Pennsylvania American Water for approximately \$156 million.

The sale is needed to bring the city to more stable financial ground and avoid Act 47, the program for financially distressed municipalities, or municipal bankruptcy, McKeesport Mayor Michael Cherepko said at the Sept. 7 council meeting.

“It became very clear to this administration that the only way to save our community from municipal bankruptcy, while continuing to offer the same level of services our residents deserve, would be to transfer our local sewage system to a regional or national utility company,” Mr. Cherepko said in a news release.

A purchase agreement was signed by both parties last Friday following votes by city council and the municipal authority to sell the sewer system. The sale is expected to be finalized in the second half of next year pending regulatory approvals and other closing conditions.

The system serves 22,000 customers in McKeesport and the communities of Dravosburg, Duquesne, East McKeesport, Elizabeth Township, Glassport, Liberty, Lincoln, North Versailles, Port Vue, Versailles and White Oak.

“We look forward to closing the proposed acquisition and to providing wastewater services that reflect our commitment to environmental stewardship and quality customer service,” said

Kathy L. Pape, president of Pennsylvania American Water, said that after the deal is closed, the company looks forward “to welcoming the Municipal Authority of the City of McKeesport’s employees and customers to the Pennsylvania American Water family.”

She said the company also looks forward to “providing wastewater services that reflect our commitment to environmental stewardship and quality customer service.”

The next step is approval of the acquisition by the Pennsylvania Public Utility Commission along with other approvals, such as from the state Department of Environmental Protection.

In June, state Auditor General Eugene DePasquale said McKeesport erred when it accidentally spent \$729,275 in state funds earmarked for pension costs and subsequently couldn't pay its \$2.3 million annual pension obligation last year.

McKeesport officials said then they would remedy the shortfall through “the sale of an asset in the near future.”

“The total proceeds of the pending sale of the Municipal Authority of the City of McKeesport will solidify the City of McKeesport’s financial position for years to come,” Mr. Cherepko said this week. “The down payment associated with this

sale will generate enough revenue to cover all of the city's outstanding financial obligations, including the minimum municipal obligations associated with the city's pension funds." Page 44 of 337

Deana Carpenter, freelance writer: suburbanliving@post-gazette.com.

EAST END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	2,070,000	2,060,000	1,831,000	2,284,000	2,971,000	2,665,000	1,498,000	1,278,000
CO2	739,000	1,050,000	885,000	793,000	1,028,000	1,061,000	873,000	873,000
IND								
MIX	15,000	9,000	10,000	4,000	17,000	14,000	12,000	18,000
RES	13,780,000	13,367,000	12,924,000	13,280,000	12,700,000	14,137,000	14,241,000	12,874,000
Grand Total	16,604,000	16,486,000	15,650,000	16,361,000	16,716,000	17,877,000	16,624,000	15,043,000

# DAYS	94	90	89	91	87	94	93	91
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Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	22,021	22,889	20,573	25,099	34,149	28,351	16,108	14,044
CO2	7,862	11,667	9,944	8,714	11,816	11,287	9,387	9,593
IND								
MIX	160	100	112	44	195	149	129	198
RES	146,596	148,522	145,213	145,934	145,977	150,394	153,129	141,473
Grand Total	176,638	183,178	175,843	179,791	192,138	190,181	178,753	165,308

Type	Total Units	Total Active Units	Total Accounts
CO1	145	109	65
CO2	40	16	13
IND			
MIX	8	7	3
RES	1,043	1012	823
Grand Total	1,236	1,144	904

Type	2015 Total	2014 Total
CO1	8,245,000	8,412,000
CO2	3,467,000	3,835,000
IND		
MIX	38,000	61,000
RES	53,351,000	53,952,000
Grand Total	65,101,000	66,260,000

Service Area	Total Units	Total Active Units	Total Accounts
BP	290	282	107
BR	52	51	52
BW	99	90	56
CR	5	4	5
CW	110	109	110
EE	1		1
GL	132	110	70
HD	127	110	112
PD	31	31	31
PM	48	47	48
PS	66	66	66
SC	65	37	40
SH	132	132	132
SRO	2	2	2
WB	76	73	72
Grand Total	1,236	1,144	904

SOUTH END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	163,000	68,000	33,000	27,000	277,000	265,000	28,000	25,000
RES	7,444,000	7,494,000	7,172,000	7,565,000	7,109,000	7,576,000	7,233,000	7,750,000
Grand Total	7,607,000	7,562,000	7,205,000	7,592,000	7,386,000	7,841,000	7,261,000	7,775,000

# DAYS	94	90	89	91	87	94	93	91
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Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	1,734	756	371	297	3,184	2,819	301	275
RES	79,191	83,267	80,584	83,132	81,713	80,596	77,774	85,165
Grand Total	80,926	84,022	80,955	83,429	84,897	83,415	78,075	85,440

Type	Total Units	Total Active Units	Total Accounts
CO1	6	2	2
RES	611	605	607
Grand Total	617	607	609

Type	2015 Total	2014 Total
CO1	291,000	595,000
RES	29,675,000	29,668,000
Grand Total	29,966,000	30,263,000

Service Area	Total Units	Total Active Units	Total Accounts
ES	178	174	174
HGN	129	125	125
HGS	30	29	30
MG	21	21	21
WS	259	258	259
Grand Total	617	607	609

AVONDALE SEWER ACCOUNTS SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	2,833,000	3,044,000	2,895,000	3,014,000	2,844,000	2,681,000	2,598,000	2,992,000
CO2	191,000	208,000	235,000	228,000	224,000	195,000	192,000	179,000
MIX	301,000	312,000	255,000	273,000	227,000	258,000	276,000	332,000
RES	4,090,000	3,750,000	3,588,000	4,089,000	3,506,000	4,183,000	4,716,000	3,705,000
TWP	31,000	24,000	20,000	19,000	21,000	22,000	19,000	74,000
Grand Total	7,446,000	7,338,000	6,993,000	7,623,000	6,822,000	7,339,000	7,801,000	7,282,000

# DAYS	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	30,138	33,822	32,528	33,121	32,690	28,521	27,935	32,879
CO2	2,032	2,311	2,640	2,505	2,575	2,074	2,065	1,967
MIX	3,202	3,467	2,865	3,000	2,609	2,745	2,968	3,648
RES	43,511	41,667	40,315	44,934	40,299	44,500	50,710	40,714
TWP	330	267	225	209	241	234	204	813
Grand Total	79,213	81,533	78,573	83,769	78,414	78,074	83,882	80,022

Type	Total Units	Total Active Units	Total Accounts
CO1	397	48	38
CO2	4	4	4
MIX	8	22	8
RES	306	282	230
TWP	3	3	3
Grand Total	718	359	283

Type	2015 Total	2014 Total
CO1	11,786,000	11,115,000
CO2	862,000	790,000
MIX	1,141,000	1,093,000
RES	15,517,000	16,110,000
TWP	94,000	136,000
Grand Total	29,400,000	29,244,000

Service Area	Total Units	Total Active Units	Total Accounts
41	308	76	46
BH	123	120	121
BH2	6	6	6
RR	130	119	79
TK	151	38	31
Grand Total	718	359	283



The PA PUC Approves First Wastewater Sale Under New Act 12

06/14/2017

June 14, 2017 (Philadelphia, PA) - On June 14, 2017, the Pennsylvania Public Utility Commission approved, in a four-to-one vote, Aqua Pennsylvania Wastewater, Inc.'s application to acquire the wastewater system of New Garden Township and its Sewer Authority, and to begin providing wastewater service to the residents of New Garden and Kennett Townships in Chester County. The transaction is the first to be approved using the fair market valuation approach established by the Pennsylvania State Legislature and Governor Tom Wolf with Act 12 of 2016 (Act of Apr. 14, 2016, P.L. 76, No. 12, 66 Pa. C.S. § 1329).

Act 12 is changing the landscape for municipal sales of water and wastewater systems to PUC-regulated public utility companies. The new law allows the parties to the transaction to opt in to a new method of valuation, which takes the value of the system for ratemaking purposes as either the lower of the average of two independent fair market value appraisals—one obtained by the utility buyer and one by the municipal seller—or by the negotiated purchase price. Prior to Act 12, system value for ratemaking was based on depreciated original cost, which would likely always result in a lower sale price than fair market value. In addition, the new law requires the PUC to act within six months of the acceptance of the application.

Act 12 became effective mid-June 2016, and the PUC issued its final implementation order in October 2016. The New Garden transaction was the first Act 12 application, submitted for approval in December 2016. Aqua, New Garden, and the Authority agreed to a negotiated purchase price of \$29,500,000, which turned out to be less than the average of the two appraisals commissioned by Aqua and New Garden. The valuation for ratemaking purposes was therefore set at \$29,500,000.

A protest to Aqua's application for PUC approval pursuant to Act 12 in the New Garden transaction was filed by the Bureau of Investigation and Enforcement, which sought a review of both of the fair market appraisals used, additional information about the proposed rate freeze agreed to by the parties, and a determination of whether the transaction was in the public interest under Section 1102 of the Public Utility Code.

An additional protest was filed by the Office of Consumer Advocates requesting further information to determine whether supplementary conditions should be imposed on the transaction to ensure that Aqua's existing customers are treated in a fair and just manner; how the transaction will substantially and affirmatively benefit Aqua's existing customers; and whether the agreement sufficiently provides for safe, adequate, and reasonable service at just and reasonable rates.

An evidentiary hearing was held before an administrative law judge on February 16, 2017. After the hearing, the judge recommended the denial of Aqua's application, concluding that Aqua had failed to demonstrate by a preponderance of the evidence that the acquisition was in the public interest because it failed to demonstrate that the transaction will result in affirmative public benefits to its existing customers. The judge also concluded that Aqua had failed to support its rate stabilization plan with evidence to show its basis and impact. The judge did

Related Lawyers

Skye C.A. Nickalls

Marc A. Feller

Related Practices

Corporate and Business

Related Offices

Philadelphia, PA

1 invest in necessary capital improvements and resources, and experienced managerial and
 2 operating personnel necessary to provide safe and reliable sewer services to the residents of
 3 the TOS and surrounding areas. PAWC is currently the water provider within TOS and is
 4 the operator of TOS’s System pump station.

5
 6 **Q. PLEASE DESCRIBE PAWC’S HISTORICAL RELATIONSHIP WITH TOS.**

7 A. Since PAWC’s acquisition of the water and wastewater assets of the City of Coatesville
 8 Authority (“CCA”) in March 2001, PAWC has been the regional wastewater (and water)
 9 provider in the City of Coatesville and surrounding communities. . PAWC’s treats the
 10 wastewater from the communities of Sadsbury Township, City of Coatesville, East
 11 Fallowfield Township, Caln Township, West Caln Township, Valley Township, West
 12 Sadsbury Township, Highland Township, West Brandywine Township and Parksburg
 13 Borough. TOS has been a bulk wastewater customer of PAWC since PAWC’s acquisition
 14 of CCA’s water and wastewater system assets. We maintain a relationship with TOS and
 15 other local municipalities by participating in local events, providing environmental and
 16 firefighting grants, offering the “H2O Assistance Program,” and supporting economic
 17 growth through infrastructure improvements in the communities we serve.

18
 19 **Q. HOW MANY CUSTOMERS DOES THE TOS SYSTEM CURRENTLY SERVE
 20 AND HOW MANY CUSTOMERS DOES PAWC CURRENTLY SERVE?**

21 A. As of December 31, 2016, TOS furnished wastewater services to 998 customers. This
 22 number includes 950 residential and 48 commercial customer connections. Of these

1 interest in discussing the potential acquisition of the System and the use of Section 1329,
 2 the fair market value approach. TOS's representatives executed the Letter of Interest on
 3 December 6 and 7, 2016 and returned it to PAWC. This "Letter of Interest" was extended
 4 through amendments on March 9, 2017, May 2, 2017, June 6, 2017, and July 5, 2017 to
 5 allow the parties to enter into a definitive agreement. Through these extensions, PAWC
 6 and TOS jointly retained the services of Herbert E. MacCombie, Jr., P.E., of Media
 7 Pennsylvania to complete the Engineer's Assessment of Tangible Assets pursuant to
 8 Section 1329. The Engineer's Assessment of Tangible Assets is included as **Schedule 1.1**
 9 of the APA and included with the UVE fair market valuation reports at **Appendix A-5**.
 10 PAWC, pursuant to Section 1329, retained the services of AUS Consultants of Greenfield
 11 Wisconsin to complete an appraisal of the System. TOS retained the services of Herbert,
 12 Rowland & Grubic, Inc. of Harrisburg, Pennsylvania to also complete an appraisal of the
 13 System. These appraisals accompany the Application at **Appendix A-5** (together with
 14 electronic working documents at **Appendix A-4**) and are included as **Schedule 2.2** of the
 15 APA. After receipt of the two appraisals and subsequent arms-length negotiations, on May
 16 1, 2018 TOS's Board of Supervisors approved the APA, which was subsequently executed
 17 by PAWC and TOS that day too. This APA includes a negotiated purchase price of
 18 \$9,250,000.

19
 20 **Q. CAN YOU PLEASE PROVIDE AN OVERVIEW OF THE APA?**

21 **A.** Yes. The APA is attached as **Appendix A-24-a** to the Application (**PAWC Exhibit KEG-**
 22 **1**). The APA sets forth the terms and conditions pursuant to which the TOS will sell, and
 23 PAWC will purchase, the System, as well as substantially all assets, properties and rights

Elizabeth Rose Triscari, Esquire
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033
(717) 520-4606
elizabeth.triscari@amwater.com

The Applicant's attorneys are authorized to receive all notices and communications regarding this Application.

6. PAWC is a regulated public utility corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania, and is engaged in the business of collecting, treating, storing, supplying, distributing and selling water to the public, and collecting, treating, transporting and disposing of wastewater for the public. Water and wastewater services are furnished by PAWC to the public in a service territory encompassing more than 400 communities across the Commonwealth with a combined population of over 2,400,000. A description of PAWC's existing certificated water and wastewater service territory is found in **Appendix B**, along with a detailed corporate history, outlining all of the mergers, acquisitions and consolidations, which have created PAWC as it exists on the date of this Application.

7. Steelton is a municipal water authority, organized by the Borough of Steelton in accordance with the Municipality Authorities Act, 53 Pa. C.S. §5601, et seq., with its offices located at 123 North Front Street, Steelton, Pennsylvania. Steelton owns and operates the Steelton System, providing water service to the public in the Borough of Steelton and a portion of Swatara Township (the "Service Area"), in Dauphin County, Pennsylvania.

8. As of November 30, 2018, Steelton furnishes water service to 2,472 customers including 2,289 residential, 124 commercial, 13 industrial, 34 institutional, 11 municipal, and one bulk sales customer connection.

PENNSYLVANIA REAL-TIME NEWS

Steelton water sale closer to completion as Pa. American Water signs \$22.5 million agreement

Updated Nov 15, 2018;
Posted Nov 15, 2018



Pennsylvania American Water announced today it signed an agreement to acquire the water assets of the Steelton Borough Authority. Pending regulatory approvals, the sale should be complete by the third quarter of 2019.

1

8
shares

By [Steve Marroni | smarroni@pennlive.com](mailto:smarroni@pennlive.com)

The sale of Steelton's water system is one step closer to completion.

Pennsylvania American Water announced today it has signed an agreement to acquire the water assets of the Steelton Borough Authority for \$22.5 million.

The two will next seek approval of the acquisition from the Pennsylvania Public Utility Commission and other necessary approvals from the Pennsylvania Department of Environmental Protection, according to the company.



Borough of Royersford

Table Lists - Master Billing List - Numeric

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Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
133438358	Morath, Christina	Commercial	None	1	SEWER	1
133453937	Baeder, William	Commercial	None	1	SEWER	1
133521786	Sanders, Debra	Commercial	None	1	SEWER	1
133757653	Advanced Auto Parts	Commercial	None	1	SEWER	1
134016546	Nelson's Ice Cream	Commercial	None	1	SEWER	1
134030702	Pitcher, Paul	Commercial	None	1	SEWER	1
134083232	Beck, Katharine G	Commercial	None	1	SEWER	1
134862572	LK Miller Properties LLC	Commercial	None	1	SEWER	1
102939458	Fuhrman, Steve	Commercial	None	1	SEWER	1
103198199	Sarangpur Realty LLC	Commercial	None	1	SEWER	1
103373167	Wilhelm, Rosemarie	Commercial	None	1	SEWER	1
104397982	Pragi Enterprises LLC	Commercial	None	1	SEWER	1
106085025	Plank Jr, Robert E	Commercial	None	1	SEWER	1
106197065	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
106197096	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
107394708	Fissingner, Matthew	Commercial	None	1	SEWER	1
107425268	Snyder, Joseph	Commercial	None	1	SEWER	1
107461417	Varlotta, Michael	Commercial	None	1	SEWER	1
107487679	CG Complex LLC	Commercial	None	1	SEWER	1
107519040	Bristol Road Partners Inc.	Commercial	None	1	SEWER	1
108908308	Superior Credit Union	Commercial	None	1	SEWER	1
109217890	Hoff Properties LLC	Commercial	None	1	SEWER	1
110722804	AMA Realty Properties LLC	Commercial	None	1	SEWER	1
111184863	Attilio, Thomas	Commercial	None	1	SEWER	1
112032330	310 Chestnut Street LLC	Commercial	None	1	SEWER	1
113068080	Branch Banking & Trust Company	Commercial	None	1	SEWER	1
113286185	White, Elaine & Bruce	Commercial	None	1	SEWER	1
115089717	C&R Property Management LLC	Commercial	None	1	SEWER	1
115089748	C&R Property Management LLC	Commercial	None	1	SEWER	1
115292810	Preston, Aaron	Commercial	None	1	SEWER	1
116240812	Shalom, Jan	Commercial	None	1	SEWER	1
116276750	Copenhafer, Fay	Commercial	None	1	SEWER	1
116612479	Donohue, Patrick R	Commercial	None	1	SEWER	1
117470098	Lewis Group Ltd Partnership	Commercial	None	1	SEWER	1
117961983	Qawasmy, John	Commercial	None	1	SEWER	1
118085592	Christman, Lewis	Commercial	None	1	SEWER	1
118305104	Tarquini Herrera, Rachel	Commercial	None	1	SEWER	1
118888302	Florence Attilio Rental Acct.	Commercial	None	1	SEWER	1
118888319	Attilio, Thomas	Commercial	None	1	SEWER	1
119364687	Conigliaro, Vito	Commercial	None	1	SEWER	1
121630875	Chesterview Apartments	Commercial	None	1	SEWER	1
122621041	Main Street Royersford LLC	Commercial	None	1	SEWER	1
122621096	Spring Mountain Brewing Co	Commercial	None	1	SEWER	1
123796115	Kassam, Tashir	Commercial	None	1	SEWER	1
126295581	JD Arnold LLC	Commercial	None	1	SEWER	1
126393133	Ostebo, Kurt	Commercial	None	1	SEWER	1

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Report Criteria:

Billing.Service No = 1

Customer.Customer Type = Commercial, Industrial, Residential

Borough of Royersford

Table Lists - Master Billing List - Numeric

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Report Criteria:

Billing.Service No = 1

Customer.Customer Type = Industrial, Residential

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
128611137	Lewis Group Ltd. Partnership	Industrial	None	1	SEWER	1
128619292	Giftwares Co Inc	Industrial	None	1	SEWER	1
128619407	Specialty Chemical Systems Inc	Industrial	None	1	SEWER	1
128619759	Accumetrics Limited	Industrial	None	1	SEWER	1
128619773	Accumetrics Limited	Industrial	None	1	SEWER	1
128620339	Nelson's Ice Cream Inc.	Industrial	None	1	SEWER	1
128620858	American Machine & Tool Co.	Industrial	None	1	SEWER	1
129486532	A.C. Miller Concrete Company	Industrial	None	1	SEWER	1
129651213	Borough of Royersford	Industrial	None	1	SEWER	1
129709754	Royersford Spring Company	Industrial	None	1	SEWER	1
129784885	Advanced Fluid Systems Inc	Industrial	None	1	SEWER	1

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Borough of Royersford

Table Lists - Master Billing List - Numeric

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Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
J25581487	Sakal, Brian J	Residential	None	1	SEWER	1
J25581852	Barbara Berman Ricci	Residential	None	1	SEWER	1
J25590276	Tallman, William	Residential	None	1	SEWER	1
J25596441	Tarantino, Joseph	Residential	None	1	SEWER	1
J25635087	Benson, Merrill G	Residential	None	1	SEWER	1
J25760044	Blamey, Chad & Katrin	Residential	None	1	SEWER	1
J25762972	Whitmore, Andrew	Residential	None	1	SEWER	1
J25807684	Mecca, Jessica	Residential	None	1	SEWER	1
J25824139	Gerber, Jenna	Residential	None	1	SEWER	1
J25859012	Creciun, Peter	Residential	None	1	SEWER	1
J25869156	Seiders, Lester & Monica	Residential	None	1	SEWER	1
J25879108	Chesterview Apartments	Residential	None	1	SEWER	1
J25930898	US Bank NA	Residential	None	1	SEWER	1
J25948684	Findley, Nicole M	Residential	None	1	SEWER	1
J25987108	Craft, Elena	Residential	None	1	SEWER	1
J26021179	John McDonald & Karlyn Eyre	Residential	None	1	SEWER	1
J26043841	Blanche, Camile	Residential	None	1	SEWER	1
J26160869	Hirst, Sharon A	Residential	None	1	SEWER	1
J26161459	John Marlatt & Rebecca Gardner	Residential	None	1	SEWER	1
J26204967	Niemczuk, Joseph W	Residential	None	1	SEWER	1
J26223333	Weiss, Joseph	Residential	None	1	SEWER	1
J26239376	C&R Property Management LLC	Residential	None	1	SEWER	1
J26300278	Millard, Barry & Sheryl	Residential	None	1	SEWER	1
J26310954	Nevin, Sean	Residential	None	1	SEWER	1
J26326843	Davis, Jeff	Residential	None	1	SEWER	1
J26340238	Jacobs, Jamie	Residential	None	1	SEWER	1
J26352002	Slifer, Richard	Residential	None	1	SEWER	1
J26353432	Lynch, Heather	Residential	None	1	SEWER	1
J26380250	Tallman, William	Residential	None	1	SEWER	1
J26381130	Stem, Matt & Heather	Residential	None	1	SEWER	1
J26403078	Petaccio, Andrea	Residential	None	1	SEWER	1
J26630702	O'Donnell, Kaitlyn	Residential	None	1	SEWER	1
J26660253	Ilyas, Asif	Residential	None	1	SEWER	1
J26713911	Hernandez, S & Murphy, M	Residential	None	1	SEWER	1
J26746591	Gieske and Niemann LLC	Residential	None	1	SEWER	1
J26875659	Speck, Erin	Residential	None	1	SEWER	1
J26880804	Raser, Randy	Residential	None	1	SEWER	1
J26909682	Perez, Waldemar & Aracelis	Residential	None	1	SEWER	1
J26969219	Macelwee-Todd, Lisa	Residential	None	1	SEWER	1

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Report Criteria:

Billing.Service No = 1
Customer.Customer Type = Residential

permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.15, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01. Purchase Price. The purchase price for the Acquired Assets is Thirteen Million Dollars (\$13,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall provide for payment in full of the total amount of Outstanding Indebtedness directly to Seller's obligees on account of the Purchase Price;

(b) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(c), to Seller by wire transfer of immediately available funds the balance of the Purchase Price (remaining after the debt repayment pursuant to Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(c) Final Billing: The Buyer is entitled to all customer billings with respect to sanitary wastewater customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

Report Criteria:

Service.Service number = 10,16
 Group Code.Group code = "A","B","C"
 Customer.Final bill date = {IS NULL}
 Billing.Temporary disconnect date = {IS NULL}
 Billing.Final disconnect date = {IS NULL}

Customer Number	Customer Name	Service Address	Customer Type	Units
10				
UP Commercial				
18011257.01	POTTSTOWN 1257 INC	1257 N CHARLOTTE ST	UP Commercial	2
18011277.01	CONIGLIARO, VITO	1277 N CHARLOTTE ST	UP Commercial	1
18011293.01	BURGER KING #4651	1293 N CHARLOTTE ST	UP Commercial	8
24010861.02	DCM PROPERTY INVESTMENTS LLC	861 WILLOW ST	UP Commercial	1
24010929.01	CREATIVE HEALTH SERVICES	929 WILLOW ST	UP Commercial	4
25100799.01	FULTON FINANCIAL CORP	799 STATE ST - FULTON BANK	UP Commercial	1
41020175.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	RENT-A-CENTER #50	UP Commercial	2
41020177.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	DOLLAR ADVANTAGE	UP Commercial	2
41020178.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	RADIO SHACK #60	UP Commercial	2
41021066.01	GEORGE EVANS	1066 FARMINGTON AVE	UP Commercial	1
41021173.01	SHUKOWITSH, STEVEN & JESSICA	1173 FARMINGTON AVE	UP Commercial	1
41021189.01	ARTIM, ROBERT	1189 FARMINGTON AVE	UP Commercial	1
41021320.01	STROGUS, BARRY	1320 FARMINGTON AVE	UP Commercial	1
41021346.01	AMERICAN METAL FINISHERS	1346 FARMINGTON AVE	UP Commercial	1
41021359.02	BOWERS, TODD	1359 FARMINGTON AVE	UP Commercial	1
41021391.01	MCGINNIS, DENNIS	1361 FARMINGTON AVE	UP Commercial	1
41021393.01	SDM INVESTMENTS LLC	1393 FARMINGTON AVE	UP Commercial	1
41021403.01	ARTIMS AUTOMOTIVE INC	1403 FARMINGTON AVE	UP Commercial	2
41021446.02	1446 FARMINGTON AVE LLC	1446 FARMINGTON AVE	UP Commercial	4
41021507.01	RICHARDSON, GLORIA MAUGER & THOMAS	1507 FARMINGTON AVE	UP Commercial	1
41021525.01	YOUNG, SHANE & KATHY	1525 FARMINGTON AVE	UP Commercial	1
41021587.01	BURGYONE, BARRY	1587 FARMINGTON AVE	UP Commercial	1
Total UP Commercial:				40
22				
UP Mixed Use				
20010875.01	SJW PROPERTIES LLC	875 N HANOVER ST -salon & apts	UP Mixed Use	2
20010933.02	MCGONIGLE, MICHAEL	933 N HANOVER ST	UP Mixed Use	2
20010943.01	STRAUSS, PAUL	943 N HANOVER ST	UP Mixed Use	3
20010955.01	BRODI, GERALD & ELAINE	955 N HANOVER ST	UP Mixed Use	11
21070842.01	DAVIDHEISER, ALLEN & BEVERLY	842 FARMINGTON AVE	UP Mixed Use	1
24010940.01	TOLENTINO, ROBERT & ASUNCION	940 WILLOW ST	UP Mixed Use	3
41050013.01	OLOCK, ANDREW	941 N HANOVER ST	UP Mixed Use	4
Total UP Mixed Use:				26
7				
UP Public				
16030233.01	HOLY TRINITY ORTHODOX CHURCH	1256 JUNIPER ST	UP Public	1
20011351.01	POTTSGROVE SCHOOL DISTRICT - ADMIN BLDG	1351 N HANOVER ST - MULTI	UP Public	30
41230093.01	CHURCH OF LATTER - DAY SAINTS	93 MAUGERS MILL RD	UP Public	1
Total UP Public:				32
3				
UP Residential				
10140863.02	MILLS, LUCAS	863 FARMINGTON AVE	UP Residential	1
10140871.01	POLLOCK, ANTHONY FILLMAN & BRENDA	871 FARMINGTON AVE	UP Residential	1

Customer Number	Customer Name	Service Address	Customer Type	Units
42061525.02	HUTELMYER, JULIA & GREG	1525 CLOVERHILL RD	UP Residential	1
42071000.01	HEATH, TERENCE M & CATHERINE	1000 FALLBROOK LN	UP Residential	1
42071002.02	DAVIS, STEPHEN & KATHRYN	1002 FALLBROOK LN	UP Residential	1
42071004.02	GALLINA, GAETANO	1004 FALLBROOK LN	UP Residential	1
42071006.02	LIANG, JIE LIN & XIUYAN	1006 FALLBROOK LN	UP Residential	1
42071007.01	STEELE, CORTNEY & DANIEL	1007 FALLBROOK LN	UP Residential	1
42071008.02	FENOGLIO, CASEY & RICHARD	1008 FALLBROOK LN	UP Residential	1
42071009.02	SHAW, SCOTT & THERESA	1009 FALLBROOK LN	UP Residential	1
42071010.02	JOHNSON, FRANKLIN & KIMBERLY	1010 FALLBROOK LN	UP Residential	1
42071011.01	HUBBARD, ANNA	1011 FALLBROOK LN	UP Residential	1
42071012.02	DIXON, JULIAN & ERICA	1012 FALLBROOK LN	UP Residential	1
42071013.01	HARISH, BIDADI & LAKSHMI	1013 FALLBROOK LN	UP Residential	1
42071014.02	RICHARDSON, KATRINA	1014 FALLBROOK LN	UP Residential	1
42071015.02	DZIUNYCZ, MATTHEW & EMILY	1015 FALLBROOK LN	UP Residential	1
42071016.02	ISHLER, KARI KLAUS & MICHAEL	1016 FALLBROOK LN	UP Residential	1
42071017.03	CONNER IV, SAMUEL	1017 FALLBROOK LN	UP Residential	1
42071018.01	SHORT, CHRISTOPHER & RONNA	1018 FALLBROOK LN	UP Residential	1
42071019.01	MCPHILLIMEY, MARK & ANN KOREEN	1019 FALLBROOK LN	UP Residential	1
42071020.01	MCWILLIAMS, DAVID & LAURI	1020 FALLBROOK LN	UP Residential	1
42071021.01	RIZZETTO, NINA	1021 FALLBROOK LN	UP Residential	1
42071022.02	PASQUAL, MICHAEL & MARIA	1022 FALLBROOK LN	UP Residential	1
42071024.01	COLLINGS, MARK	1024 FALLBROOK LN	UP Residential	1
42071026.01	GAINES, NICOLE	1026 FALLBROOK LN	UP Residential	1
42071028.02	SPRING HILL REALTY	1028 FALLBROOK LN	UP Residential	1
42071030.03	HOUSEAL JR, JOSEPH & CARA	1030 FALLBROOK LN	UP Residential	1
42071032.03	DAILY, ALBERT & REGINA	1032 FALLBROOK LN	UP Residential	1
42071034.01	FELTENBERGER, CHAD & HEATHER	1034 FALLBROOK LN	UP Residential	1
42071036.02	SOLIVAN, GINA & ADRIAN	1036 FALLBROOK LN	UP Residential	1
42071038.03	THAO, DAVID	1038 FALLBROOK LN	UP Residential	1
42071040.01	JORGENSEN, TRISHA & ERICK	1040 FALLBROOK LN	UP Residential	1
42071042.01	KROENING, TERRY	1042 FALLBROOK LN	UP Residential	1
42071044.01	SCHURR, JEFFREY KENT	1044 FALLBROOK LN	UP Residential	1
42071045.01	PURKAYASTHA, DEBASHISH & SUDDATTA	1045 FALLBROOK LN	UP Residential	1
42071046.03	WILLIS, FRANK & FAITH	1046 FALLBROOK LN	UP Residential	1
42071047.02	CONG, MY	1047 FALLBROOK LN	UP Residential	1
42071048.01	HAINES, LARRY & DONNA	1048 FALLBROOK LN	UP Residential	1
42071050.02	MIDDLETON, JAMES	1050 FALLBROOK LN	UP Residential	1
42071052.01	SEMETER, DANIEL	1052 FALLBROOK LN	UP Residential	1
42071513.04	ROMANO, DANIEL & SARA	1513 CLOVER HILL RD	UP Residential	1
42081600.02	GOMEZ, ODETTE	1600 APPLGATE LN	UP Residential	1
42081601.01	RODRIGUEZ, RUTH & JUAN	1601 APPLGATE LN	UP Residential	1
42081602.02	EGARIAN, CHRISTOPHER	1602 APPLGATE LN	UP Residential	1
42081604.01	LAWLOR, CARL & LORETTA	1604 APPLGATE LN	UP Residential	1
42081606.01	COHEN, SIDNEY & RUTH	1606 APPLGATE LN	UP Residential	1
42081608.01	ROCHA, WILL & CARMEN	1608 APPLGATE LN	UP Residential	1
42081609.01	EVANS, GARETH	1609 APPLGATE LN	UP Residential	1
42081610.01	DUNKEL, CAROL	1610 APPLGATE LN	UP Residential	1
42081611.02	SORG, GREGORY & TRICIA	1611 APPLGATE LN	UP Residential	1
42081612.01	MANCINI, MICHAEL & AMIE	1612 APPLGATE LN	UP Residential	1
42091501.02	HULL, KEVIN & AMY	1501 MAYWOOD LN	UP Residential	1
42091503.02	EPSTEIN, CARL & LINDA	1503 MAYWOOD LN	UP Residential	1
410512005.01	CUTLER, ROBERT & ELIZABETH	2005 PROUT FARM RD	UP Residential	
4102152012.01	SCHAEFFER, JACK & AUDREY	1520 FARMINGTON AVE	UP Residential	1
4152006901.01	BUCK, WILLIAM	69 MICKLITZ DR	UP Residential	1

Total UP Residential:
1,390

1429

Borough of Pottstown

Table Lists - Customer EDU Count Sewer UP

Customer Number	Customer Name	Service Address	Customer Type	Units
Total 10:				1527
1,422				
16				
UP Commercial				
10140882.01	DICKENSON, CHARLES	882 FARMINGTON AVE	UP Commercial	2
10140902.01	CMD SERVICES INC	902 FARMINGTON AVE	UP Commercial	3
18011263.02	H & E PALERMO REAL ESTATE	1263 N CHARLOTTE ST	UP Commercial	2
20010863.01	SJW PROPERTIES LLC	871 N HANOVER ST -comm.bldg	UP Commercial	6
41020179.01	APPLEBEES RESTAURANT - ROSE CAS DIN LP	815 STATE ST	UP Commercial	30
41021495.01	KIM, JONG Y & YUN K	1495 FARMINGTON AVE	UP Commercial	3
Total UP Commercial:				46
6				
Total 16:				46
6				
Grand Totals:				1573
1,428				

Report Criteria:

Service.Service number = 10,16
 Group Code.Group code = "A","B","C"
 Customer.Final bill date = {IS NULL}
 Billing.Temporary disconnect date = {IS NULL}
 Billing.Final disconnect date = {IS NULL}

https://www.pottsmmerc.com/news/upper-pottsgrove-votes-4-1-to-sell-sewer-system-for-13-7m/article_f8f493d8-8408-11ea-8425-07388a90f968.html

FEATURED

Upper Pottsgrove votes 4-1 to sell sewer system for \$13.7M

Evan Brandt ebrandt@21st-centurymedia.com @PottstownNews on Twitter
Apr 22, 2020



Upper Pottsgrove Township Commissioner Martin Schreiber, framed in yellow, outlines his objections to the sale of the township's sewer collection system during Monday's online meeting.

Photo from Screenshot

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UPPER POTTS GROVE — Township Commissioners voted 4-1 Monday night to sell the township's sewer collection system for \$13.75 million to Pennsylvania American Water.

Commissioners Martin Schreiber cast the lone vote against the sale.

As The Mercury reported on April 8, the presentation provided at four online informational sessions earlier in the month forecast that sewer rates would drop by about 9.6 percent under Pennsylvania American Water ownership.

However, the decrease — from the current \$71.87 per month to \$65 per month — would be short-lived, according to Bernie Grundusky, senior director for business development for the water company.

A chart he shared as part of the online meetings showed rates would return to the current rate in three or four years after the sale, and then increase annually by an average of 4.5 to 5.2 percent.

By comparison, the township's sewer rates, which have increased in a more haphazard fashion, average out to between 4.6 to 6 percent a year, according to the presentation.

Now that the sale has been approved, the average homeowner will save \$1,260 between the time rates were dropped to when they return to their current level, according to the presentation.

The deal must still be approved by the Pennsylvania Public Utility Commission, a process that could take longer than a year to be finalized.

As a result of the vote, PFM Financial Advisors LLC will be paid more than \$250,000.

As noted by Commissioners' Chairman Trace Slinkerd, who, prior to the vote, praised the consultants for taking a risk, if the commissioners had voted against the sale, PFM would have been paid only its \$7,500 fee for preliminary work.

Scott Shearer, PFM's managing director, insisted during Monday's meeting that the firm "did not make a recommendation. We're not trying to sell this system."

During the four public information sessions the township staged online, not one negative aspect of the sale was identified. Township Manager Michelle Reddick said the presentations were put together by PFM and the staff.

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During those meetings, Slinkerd restricted all interaction to questions from residents, which were mostly answered by the consultants or township staff. He said public comments would be accepted at the April 20 meeting.

When that happened Monday night, the online meeting was attended by more than 50 people.

Eight residents spoke. All but one asked the commissioners to vote against the sale or, even more frequently, delay the vote until next month or later.

Many cited the fact that the Pennsylvania American Water's bid does not expire until June 30, and there is still time to answer residents' questions.

Don Read, a former member of the Pottstown Borough Authority and a current member of the township's sewer committee, was the only person to speak fully in favor of the sale.

As he did at the April 16 meeting, Read said the best reason to sell the system is the risk inherent in running it.

He said the potential capital costs of problems with sewer lines and pump stations, as well as capital costs imposed by the Pottstown Borough Authority, which runs the plant that receives and treats Upper Pottsgrove's sewage, are too big a financial risk for a four-person staff.

"The price is on the high side of what we projected," he said of the winning bid. The other bidder was Aqua America.

"What's another month going to do? It's frustrating to watch people come in at the last hour and ask for a delay," said Read.

He was referring, presumably, to other speakers who said they were unaware of the potential sale of the system until they received a township letter in the mail, a letter which arrived after the first two public information sessions had already occurred.

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"I am imploring you all to take an opportunity to table the vote until the May 20 meeting," said Turnberry Farms resident Stephanie Rowe.

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"This is beneficial in several ways, the first being it allows all residents to be able to digest and question this decision that seems to be on a fast track for a reason that has not been satisfied by any of the presentations that you allowed to happen with little or no response from the board — almost every question was deferred to either PFM or PA American Water," Rowe said.

Darryle Tillman, who appeared in scrubs while caring "for 104 patients, one third to one half of which have COVID-19," also urged a delay.

"This plan has its good points and its bad points, but it is ridiculous to do this in a Zoom meeting in the middle of a pandemic," he said in reference to the on-line platform used for the meeting.

Al Leach, who is also the vice president of the Pottsgrove School Board, also urged a pause.

"I'm sure you've all done your due diligence, but a lot of residents are just finding out about this and would like to see if they can get more involved," Leach said.

"There are a lot of questions that need to get answered, like how the board intends to spend the proceeds, and the open space question," he said.

Although the presentation has identified the proceeds as paying down the sewer system debt; making the pension system whole and paying off general fund and road fund debt, two other proposed uses have raised questions.

One is paying off debt undertaken by the open space fund, which is paid off with a voter-approved earned income tax; and infrastructure improvements to the police station and township offices in the firehouse.

No specific plan for those improvements has been presented as part of the sewer system sale proposal, said resident Doug Kern.

"We have no access to the paperwork, no ability to examine this ourselves," said Kern, who said he did not find out about the proposal until two of the public information sessions had already passed.

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"All I have is a bunch of slides which changed after almost every meeting, and a lot of 'take-my-word-for-it-answers. It sounds like you have a 90-day window to make a decision," said Kern, urging a delay or a no vote.

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Dustin Schreiber said his research indicates American Water, the parent company of the highest bidder, "is owned by a German conglomerate called RFWAG. I'd prefer we support an American company if we sell, and I'm not convinced we should sell."

Hanover Drive resident Keith Plumadore said he sees the sale as a short-term fix for the township's finances. "It's a temporary reprieve from amateur fiscal management. The township did a good job with the (request for proposals) but I see no evidence the township will execute and bring better fiscal governance with the proceeds."

"When I moved here in 2000, the commissioners and the people all worked together," said Leach. "I implore you to at least consider the idea of tabling this motion, It would be so easy to delay this vote so we can get all our ducks in a row and demonstrate transparency we always used to have in this community."

Slinkerd closed public comment and then called on Schreiber to outline the objections he has been posting on his Facebook page and the Turnberry Farms Facebook page.

However, as Schreiber spoke, Slinkerd repeatedly interrupted him, talked over him and told him his points were not relevant to the subject at hand.

"The sewer customers paid for the sewer, if they were stockholders, they should be getting a bonus check, they're getting the short end of the stick," said Schreiber.

"What about people who pay school taxes but don't have any children in the system," Slinkerd interjected. "Should they not be taxed?"

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The areas in green on this map of Upper Pottsgrove show the areas served by the township sewer system.
Official township sewer map

"Everyone has a chance to send to send students to school," Schreiber replied. "What about open space, Martin?" Slinkerd interrupted again. "That's paid with earned income tax, but seniors don't pay that. Should we put signs up telling them they can't use the open space?" Slinkerd asked.

"We taxed ourselves for that," Schreiber started to reply and Slinkerd pressed on. "We don't separate our residents into senior sewer residents. Are you saying that's the way we should go?"

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As Schreiber tried to raise further points, Slinkerd continued to interrupt him. "That's what you've been doing, going down this rabbit hole trying to dislodge what we're talking about," Slinkerd said.

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"You keep trying to throw things at the wall at the 11th hour to see what sticks to make it seem like you did research," he continued. "You've had a year to think about this stuff."

"Are you going to let me finish?" Schreiber finally asked. "I never stopped you," Slinkerd replied, finally allowing Schreiber to speak uninterrupted.

The other commissioners, Dave Waldt, Cathy Parette and Renee Spaide all were permitted to speak uninterrupted, except when Schreiber spoke, thinking Parette was finished with her point.

He apologized for interrupting her and urged her to go on.

The other commissioners joined in disputing Schreiber's points.

Spaide, who has served on the board for many years with Schreiber, read from a prepared statement that noted, in part, "all the commissioners have been involved."

She said she agrees with Read that running the sewer system is a risk. "We have a road crew, not a sewer crew and Pennsylvania American Water does this for a living," said Spaide.

Waldt said he and Parette "ran on concern about the township's finances. People were very unhappy." He disputed Schreiber's characterization that he was left out of discussions. "We've spent hours on the budget and I never see you. You never participate," said Waldt.

"Dave and I started to get to get acquainted with this while we were running," said Parette. "We don't have any business running a sewer business. If we keep it, our taxes would rise and the rates would be higher than if we didn't own it."

She added, "I don't wait to be invited into things, I ask for the information I need."

When Schreiber tried to point out he had asked Reddick for information and it took two days to get an answer, the other commissioners leaped to her defense. "Michelle has a lot on her plate," said Parette.

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"Michelle has done an outstanding job," said Slinkerd.

Parette pointed out that while people last night were complaining about having the meeting over Zoom, it had more participants than most in-person township meetings.

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"It's great to see so many people participate. This is not as many as we get at regular meetings. I've had people tell me they like this better," said Paretti. "You're never going to make everyone happy."

But even in a pandemic, "the one thing that can't stop is your government," Paretti said.

After the vote, Slinkerd said the next steps would be discussed at a future meeting.

This article first appeared as a post in The Digital Notebook blog.

"All I have is a bunch of slides, which changed after almost every meeting, and a lot of 'take-my-word-for-it-answers.'"

— Doug Kern, Upper Pottsgrove resident

"This plan has its good points and its bad points, but it is ridiculous to do this in a Zoom meeting in the middle of a pandemic."

— Darryle Tillman, Upper Pottsgrove resident

"What's another month going to do? It's frustrating to watch people come in at the last hour and ask for a delay."

— Don Read, Upper Pottsgrove Sewer Committee

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"I am imploring you all to take an opportunity to table the vote until the May 20 meeting."

— Stephanie Rowe, Upper Pottsgrove resident

"You keep trying to throw things at the wall at the 11th hour to see what sticks to make it seem like you did research."

— Trace Slinkerd, Upper Pottsgrove Commissioners chairman

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Evan Brandt has been a staff reporter for The Mercury for more than 20 years. He covers municipal, school district, political, state government, federal government and environmental news.

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Bill ID: 20-3-30 Bill Date: 03/30/2020 Due Date: 04/30/2020

Service Charge Rate Current Charge Prior Due Total Billed *Penalty

Billing Summary By Class

Class	# of Units # of Accounts	Consumption Charges	Fixed charges	Special charges	Unit charges	Taxes	Prior Due	Total Billed	Consumption
CH	0.00 6	\$1,903.57	\$0.00	\$0.00	\$0.00	\$0.00	\$588.17	\$2,491.74	0.00
COM	0.00 119	\$57,834.48	\$0.00	\$0.00	\$0.00	\$0.00	\$4,543.43	\$62,377.91	1,636.00
DAY	0.00 2	\$2,006.87	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,006.87	0.00
IND	0.00 13	\$11,785.09	\$0.00	\$0.00	\$0.00	\$0.00	-\$967.10	\$10,817.99	27.00
MH	0.00 4	\$1,087.76	\$0.00	\$0.00	\$0.00	\$0.00	\$1,003.61	\$2,091.37	0.00
RES	1.00 3,022	\$943,941.94	\$0.00	\$0.00	\$0.00	\$0.00	\$224,214.75	\$1,168,156.69	31,458.00
SCH	0.00 3	\$4,074.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,074.10	338.00
Grand Totals	1.00	\$1,022,633.81	\$0.00	\$0.00	\$0.00	\$0.00	\$229,382.86	\$1,252,016.67	33,459.00

	Metered Sewer	Sewer	Trash	Water	Total
CH	0.00 0	0.00 6	0.00 6	0.00 0	0.00 6
	\$0.00	\$1463.00	\$440.57	\$0.00	\$1903.57
	0.00	0.00	0.00	0.00	0.00
COM	0.00 26	0.00 90	0.00 17	0.00 27	0.00 119
	\$9447.60	\$41339.82	\$1258.76	\$5788.30	\$57834.48
	555.00	526.00	0.00	555.00	1,636.00
DAY	0.00 0	0.00 2	0.00 1	0.00 0	0.00 2
	\$0.00	\$1881.00	\$125.87	\$0.00	\$2006.87
	0.00	0.00	0.00	0.00	0.00
IND	0.00 0	0.00 12	0.00 1	0.00 1	0.00 13
	\$0.00	\$11495.00	\$62.94	\$227.15	\$11785.09
	0.00	0.00	0.00	27.00	27.00
MH	0.00 0	0.00 4	0.00 4	0.00 0	0.00 4
	\$0.00	\$836.00	\$251.76	\$0.00	\$1087.76
	0.00	0.00	0.00	0.00	0.00

Bill ID: 20-3-30 Bill Date: 03/30/2020 Due Date: 04/30/2020

Service	Charge	Rate	Current Charge	Prior Due	Total Billed	w\Penalty
RES	Metered Sewer					
	0.00	0.00	0.00		1.00	
	1,638	1,641	3,022		3,022	
SCH						
	\$326585.47	\$163777.78	\$943941.94		\$943941.94	
	15,718.00	15,740.00	31,458.00		31,458.00	
Total						
	0.00	0.00	0.00		0.00	
	\$2026.80	\$1420.30	\$4074.10		\$4074.10	
	169.00	169.00		338.00		
	0.00	0.00	0.00		1.00	
	1,666	1,671	3,169		3,169	
	\$338059.87	\$171213.53	\$1022633.81		\$1022633.81	
	16,442.00	16,491.00	33,459.00		33,459.00	

District	Accounts	Consumption charges	Fixed charges	Special charges	Unit charges	Total Taxes	Prior Due	Total	Consumption
01	98	\$31,793.07	\$0.00	\$0.00	\$0.00	\$0.00	\$7,493.77	\$39,286.84	1,308.00
02	227	\$89,098.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11,780.00	\$100,878.00	5,375.00
03	180	\$66,337.00	\$0.00	\$0.00	\$0.00	\$0.00	\$7,045.26	\$73,382.26	3,734.00
04	373	\$140,804.30	\$0.00	\$0.00	\$0.00	\$0.00	\$12,388.59	\$153,192.89	8,152.00
05	128	\$45,371.52	\$0.00	\$0.00	\$0.00	\$0.00	\$3,462.92	\$48,834.44	2,402.00
06	79	\$29,618.51	\$0.00	\$0.00	\$0.00	\$0.00	\$1,527.02	\$31,145.53	1,676.00
A	507	\$168,878.38	\$0.00	\$0.00	\$0.00	\$0.00	-\$1,009.62	\$167,868.76	7,332.00
B	522	\$156,120.45	\$0.00	\$0.00	\$0.00	\$0.00	\$53,216.98	\$209,337.43	1,346.00
C	662	\$191,212.44	\$0.00	\$0.00	\$0.00	\$0.00	\$96,144.83	\$287,357.27	1,172.00
EF	364	\$92,570.36	\$0.00	\$0.00	\$0.00	\$0.00	\$36,930.04	\$129,500.40	436.00
WC	9	\$3,446.52	\$0.00	\$0.00	\$0.00	\$0.00	\$91.36	\$3,537.88	218.00
	20	\$7,383.26	\$0.00	\$0.00	\$0.00	\$0.00	\$311.71	\$7,694.97	308.00
Grand Totals		\$1,022,633.81	\$0.00	\$0.00	\$0.00	\$0.00	\$229,382.86	\$1,252,016.67	33,459.00

Billing Summary By District

(b) Until such time as a Nonassignable Asset is transferred to Buyer pursuant to this Article II, Buyer and Seller shall cooperate in any commercially reasonable and economically feasible arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties the economic and, to the extent permitted under Law, operational equivalent of the transfer of such Nonassignable Asset to Buyer at the Closing and the performance by Buyer of its obligations with respect thereto, and so long as Seller transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Thirteen Million Nine Hundred Fifty Thousand Dollars (\$13,950,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b), to Seller by wire transfer of immediately available funds the Purchase Price (remaining after the payments required in Section 3.01(a)) to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

Bill ID: 20-3-30 Bill Date: 03/30/2020 Due Date: 04/30/2020

Service Charge Rate Current Charge Prior Due Total Billed *Penalty

Billing Summary By Class

Class	# of Units # of Accounts	Consumption Charges	Fixed charges	Special charges	Unit charges	Taxes	Prior Due	Total Billed	Consumption
CH	0.00 6	\$1,903.57	\$0.00	\$0.00	\$0.00	\$0.00	\$588.17	\$2,491.74	0.00
COM	0.00 119	\$57,834.48	\$0.00	\$0.00	\$0.00	\$0.00	\$4,543.43	\$62,377.91	1,636.00
DAY	0.00 2	\$2,006.87	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,006.87	0.00
IND	0.00 13	\$11,785.09	\$0.00	\$0.00	\$0.00	\$0.00	-\$967.10	\$10,817.99	27.00
MH	0.00 4	\$1,087.76	\$0.00	\$0.00	\$0.00	\$0.00	\$1,003.61	\$2,091.37	0.00
RES	1.00 3,022	\$943,941.94	\$0.00	\$0.00	\$0.00	\$0.00	\$224,214.75	\$1,168,156.69	31,458.00
SCH	0.00 3	\$4,074.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,074.10	338.00
Grand Totals	1.00	\$1,022,633.81	\$0.00	\$0.00	\$0.00	\$0.00	\$229,382.86	\$1,252,016.67	33,459.00

	Metered Sewer	Sewer	Trash	Water	Total
CH	0.00 0 \$0.00 0.00	0.00 6 \$1463.00 0.00	0.00 6 \$440.57 0.00	0.00 0 \$0.00 0.00	0.00 6 \$1903.57 0.00
COM	0.00 26 \$9447.60 555.00	0.00 90 \$41339.82 526.00	0.00 17 \$1258.76 0.00	0.00 27 \$5788.30 555.00	0.00 119 \$57834.48 1,636.00
DAY	0.00 0 \$0.00 0.00	0.00 2 \$1881.00 0.00	0.00 1 \$125.87 0.00	0.00 0 \$0.00 0.00	0.00 2 \$2006.87 0.00
IND	0.00 0 \$0.00 0.00	0.00 12 \$11495.00 0.00	0.00 1 \$62.94 0.00	0.00 1 \$227.15 27.00	0.00 13 \$11785.09 27.00
MH	0.00 0 \$0.00 0.00	0.00 4 \$836.00 0.00	0.00 4 \$251.76 0.00	0.00 0 \$0.00 0.00	0.00 4 \$1087.76 0.00

Bill ID: 20-3-30 Bill Date: 03/30/2020 Due Date: 04/30/2020

Service	Charge	Rate	Current Charge	Prior Due	Total Billed	w/Penalty
RES	Metered Sewer					
		0.00	0.00		1.00	
SCH		1,638	1,641		3,022	
		\$326585.47	\$163777.78		\$943941.94	
Total		15,718.00	15,740.00		31,458.00	
		0.00	0.00		0.00	
		\$2026.80	\$1420.30		\$4074.10	
		169.00	169.00		338.00	
		0.00	0.00		1.00	
		1,666	1,671		3,169	
		\$338059.87	\$171213.53		\$1022633.81	
		16,442.00	16,491.00		33,459.00	

District	Accounts	Consumption charges	Fixed charges	Special charges	Unit charges	Total Taxes	Prior Due	Total	Consumption
01	98	\$31,793.07	\$0.00	\$0.00	\$0.00	\$0.00	\$7,493.77	\$39,286.84	1,308.00
02	227	\$89,098.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11,780.00	\$100,878.00	5,375.00
03	180	\$66,337.00	\$0.00	\$0.00	\$0.00	\$0.00	\$7,045.26	\$73,382.26	3,734.00
04	373	\$140,804.30	\$0.00	\$0.00	\$0.00	\$0.00	\$12,388.59	\$153,192.89	8,152.00
05	128	\$45,371.52	\$0.00	\$0.00	\$0.00	\$0.00	\$3,462.92	\$48,834.44	2,402.00
06	79	\$29,618.51	\$0.00	\$0.00	\$0.00	\$0.00	\$1,527.02	\$31,145.53	1,676.00
A	507	\$168,878.38	\$0.00	\$0.00	\$0.00	\$0.00	-\$1,009.62	\$167,868.76	7,332.00
B	522	\$156,120.45	\$0.00	\$0.00	\$0.00	\$0.00	\$53,216.98	\$209,337.43	1,346.00
C	662	\$191,212.44	\$0.00	\$0.00	\$0.00	\$0.00	\$96,144.83	\$287,357.27	1,172.00
EF	364	\$92,570.36	\$0.00	\$0.00	\$0.00	\$0.00	\$36,930.04	\$129,500.40	436.00
WC	9	\$3,446.52	\$0.00	\$0.00	\$0.00	\$0.00	\$91.36	\$3,537.88	218.00
	20	\$7,383.26	\$0.00	\$0.00	\$0.00	\$0.00	\$311.71	\$7,694.97	308.00
Grand Totals		\$1,022,633.81	\$0.00	\$0.00	\$0.00	\$0.00	\$229,382.86	\$1,252,016.67	33,459.00

Billing Summary By District

and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under Law and the terms of any applicable contract that is a Nonassignable Asset, as agent or subcontractor for Seller, pay, perform and discharge the liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would be Assumed Liabilities if the applicable consent or approval had been obtained on or before the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under Law, Seller shall hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and before the Closing, Buyer identifies any contract to which Seller is a party which is not set forth on Schedule 4.13, and Buyer reasonably determines such contract is necessary or useful to the operation of the System, Buyer shall notify Seller of such determination and Seller shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.13 reflecting the addition of such contract, and such contract will be an "Assigned Contract" for all purposes hereunder.

(d) If during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller was a party as of the Closing and which (i) was not set forth on Schedule 4.13 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary or useful to the operation of the System, Seller shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract is deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE AND ADDITIONAL PURCHASE PRICE

Section 3.01. Purchase Price.

The purchase price for the Acquired Assets is Seven Million Three Hundred Twenty-Five Thousand Dollars (\$7,325,000) (the "Purchase Price") which Buyer shall pay as follows at Closing:

(a) Buyer shall pay, subject to any adjustment pursuant to Section 3.01(b) and to release Liens, to Seller by wire transfer of immediately available funds the Purchase Price to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(b) Final Billing: The Buyer is entitled to all customer billings with respect to drinking water customers services for the period on or after the Closing Effective Time, and Seller is entitled to all such billings for the period before the Closing Effective Time. The Parties

respect thereto, and so long as Seller or the City transfers and turns over all economic and beneficial rights with respect to each such Nonassignable Asset, Buyer shall, to the extent permitted under applicable Law and the terms of any applicable contract that constitutes a Nonassignable Asset, as agent or subcontractor for Seller or the City, pay, perform and discharge the Liabilities and obligations of Seller thereunder from and after the Closing Date, but only to the extent that such liabilities and obligations would constitute Assumed Liabilities if the applicable consent or approval had been obtained on or prior to the Closing Date and such Nonassignable Asset had been assigned to Buyer at Closing. To the extent permitted under applicable Law, Seller or the City shall, at Seller's or the City's expense, hold in trust for and pay to Buyer promptly upon receipt thereof, such Nonassignable Asset and all income, proceeds and other monies received by Seller with respect to such Nonassignable Asset in connection with the arrangements under this Article II.

(c) If, following the Effective Date and prior to the Closing, Buyer identifies any contract to which Seller or the City is a party which is not identified on Schedule 4.15 as an Assigned Contract as of the Effective Date, and Buyer reasonably determines such contract is necessary to the operation of the System, Buyer shall give notice of such determination to Seller or the City and Seller or the City shall, promptly following receipt of such notice, deliver to Buyer an updated Schedule 4.15 identifying such contract, and such contract shall thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) In the event that, during the twelve (12) month period following the Closing, Buyer identifies any contract to which Seller or the City was a party as of the Closing and which (i) was not set forth on or properly identified on Schedule 4.15 (as may be updated pursuant to (c)) and (ii) Buyer reasonably believes is necessary to the operation of the System, Seller or the City shall, promptly following Buyer's written request therefor, execute, acknowledge and deliver, or cause to be executed, acknowledged and delivered, such other instruments of conveyance and transfer and other documents, and perform or cause to be performed such further acts, as may be reasonably required to evidence or effectuate, or more fully evidence or effectuate the assignment of such contract to Buyer for no additional consideration, and upon such assignment, such contract shall be deemed an Assigned Contract for all purposes hereunder.

ARTICLE III.

PURCHASE PRICE

Section 3.01 Purchase Price; Agreement Proposal Security.

(a) **Purchase Price for the Assets; Adjustment for City Deposit.** Subject to the terms and conditions of this Agreement, the purchase price ("**Purchase Price**") for the Acquired Assets shall be (i) \$235,000,000, *plus* (ii) the Average Daily AR Payment. The Purchase Price shall be delivered as follows:

(i) Within 60 days of the Effective Date, Buyer shall deposit Twenty Million Dollars (\$20,000,000) of the Purchase Price, payable to the City in immediately available funds ("**City Deposit**"), subject to Sections 4.03, 6.06, 9.05 and 13.02 and secured by the City with a tax and revenue anticipation note (the "**Deposit Note**") substantially in the form attached hereto as Exhibit A; and

EXHIBIT 23
Page 76 of 337

Appendix A-5.2 (Gannett)
Application of Pennsylvania-American Water Company for the Acquisition of the Wastewater Collection and Treatment System Owned by the York City Sewer Authority (the "Authority") and Operated by the City of York (the "City") (collectively "York")

66 Pa. C.S. § 1329
Application Filing Checklist – Water/Wastewater
Docket No. A-2021-3024681

17. Customers.
- a. State the seller's actual number of customers by class and quantify the related consumption or gallons treated in the current calendar year and future number of connections anticipated for the next 10 years.

RESPONSE:

- a. As of April 2021, York provided direct wastewater service to approximately 13,747 customers and seven bulk customers:
 1. Manchester Township
 2. West Manchester Township
 3. York Township
 4. North York Borough
 5. The York Water Company (owner of the West York Borough Collection System)
 6. Spring Garden Township
 7. Springettsbury Township

The York does not differentiate by customer class.

Consumption (annual):

Based on 2020 monthly average flow data from the 2020 Chapter 94 Report, the annual gallon treated is 3,341,575,000 gallons, inclusive of the seven bulk customers' sewage.

Please refer to **Appendix A-20-c**, Chapter 94 Report for future EDU projections.

system at an agreed-upon price of \$53,000,000.⁹ Thereafter, Aqua and the Township agreed to use the process presented in Section 1329 of the Code to determine the FMV of the wastewater system assets and the ratemaking rate base. As required by Section 1329, Aqua and LMT jointly retained the services of Ebert Engineering, Inc., Consulting Engineers (Ebert) to complete the engineering assessment and original cost estimate of the wastewater system (Assessment of Tangible Property). Aqua St. 1 at 20; Application at ¶ 11. Aqua selected Gannett Fleming, and the Township selected AUS, as their respective UVEs to prepare FMV appraisals of the wastewater system. Application at ¶ 53. Gannett Fleming's FMV report concluded that the value of the wastewater system was \$55,505,000; AUS' FMV was \$54,430,591. Application Exhs. Q and R. Both appraisals were prepared in compliance with the USPAP standards. Application at ¶ 61; Application Exhs. T1 and T2.

In its Application, Aqua proposed a ratemaking rate base of \$53,000,000 based on the agreed-to purchase price of \$53,000,000. This amount is less than the average of the two UVE appraisals for the wastewater system ($(\$55,505,000 + \$54,430,591)/2 = \$54,967,796$). OCA M.B. at 6; *See* 66 Pa. C.S. § 1329(c)(2).

In addition, Aqua is seeking approval of the APA with LMT. Application Exh. B. The APA requires Aqua to implement rates that are no higher than the Township's rates in effect at closing. Application Exh. B at Section 7.04. The APA also provides that Aqua intends to bill customers on a monthly basis instead of an annual basis. *Id.* Moreover, in accordance with Section 1102 of the Code, Aqua is requesting a Certificate in order to provide wastewater services to the Township customers. Application at ¶ 5. Separate customer notices were sent to the Township customers and

⁹ All assets are located in the Township except for a portion of a main that collects wastewater from a small segment of residents in Yardley Borough. The main is located on University Blvd. and is owned by LMT which loops into, then out of, Yardley Borough. The residents in Yardley Borough that are connected to this main are billed by Yardley Borough. Application at 3.

adopted without comment unless they are either expressly or by necessary implication rejected or modified by this Opinion and Order.

As we proceed in our review of the various positions of the Parties in this proceeding, we are reminded that the Commission is not required to consider expressly or at length each contention or argument raised by the parties. *Consolidated Rail Corp. v. Pa. PUC*, 625 A.2d 741 (Pa. Cmwlth. 1993); *also see, generally, University of Pennsylvania v. Pa. PUC*, 485 A.2d 1217 (Pa. Cmwlth. 1984). Exceptions that we do not specifically address shall be deemed to have been duly considered and denied without further discussion.

III. Transaction Overview

Aqua is a certificated provider of wastewater service, duly organized and existing under the laws of the Commonwealth of Pennsylvania. Aqua provides wastewater service to approximately 45,000 customer accounts in various counties throughout Pennsylvania including parts of Bucks County. Application at ¶ 7.

LMT owns a sanitary wastewater collection system operated by the Municipal Sewer Authority of the Township of Lower Makefield, which provides direct wastewater service to 11,151 customers in the Township. Application at ¶ 8; Aqua St. 2 at 10. LMT does not own a wastewater treatment plant. Wastewater treatment is mainly provided by the Municipal Authority of the Borough of Morrisville and also by Yardley Borough Sewer Authority. Application at ¶ 15.

On September 17, 2020, Aqua and LMT entered into an APA for the sale of substantially all of the assets, properties, and rights related to the Township's wastewater

II. Transaction Overview

Aqua is a certificated provider of wastewater service, duly organized and existing under the laws of the Commonwealth of Pennsylvania. Aqua provides wastewater service to approximately 45,000 customer accounts in various counties throughout Pennsylvania, including parts of Chester County and within the Township itself, and currently operates thirty-nine wastewater treatment plants. Application at ¶ 7; Aqua St. 1 at 8-9.

EWT is a Pennsylvania Second Class township, which owns the sanitary wastewater collection system (the System) providing sanitary wastewater service to approximately 3,895 customers in EWT. Application at ¶ 8. Although EWT owns the Malvern Hunt Wastewater Treatment Plant (WWTP), wastewater treatment is mainly provided by the Valley Forge Sewer Authority (VFSA).³ Application at ¶ 15.

On January 8, 2021, Aqua and EWT entered into an APA for the sale of the assets, properties, and rights related to the Township's System at an agreed-upon price of \$54,930,000. Thereafter, Aqua and the Township agreed to use the process presented in Section 1329 of the Code to determine the fair market value (FMV) of the System assets and the ratemaking rate base. As required by Section 1329, Aqua and EWT jointly retained the services of Pennoni Associates, Inc. (Pennoni) to complete the engineering assessment and original cost estimate of the System (Engineering Assessment).

³ In the Application, Aqua stated that Malvern Hunt WWTP was in the process of being decommissioned and converted to a pump station. Following the decommissioning, all wastewater flows will be treated at the VFSA WWTP. EWT, in addition, collects/conveys flow to/from its system from the Borough of Malvern, Tredyffrin Township, Charlestown Township, and Willistown Township, which then flows for treatment at the VFSA. EWT also has several areas of its system that are on the border between EWT and East Goshen Township. While EWT owns the facilities within its borders, flows from these customers are sent to the East Goshen Municipal Authority (EGMA) WWTP. Aqua St. 2 at 5-6.

Willistown is a Pennsylvania Second Class township, which owns the sanitary wastewater collection and treatment system (the System) providing sanitary wastewater service to approximately 2,294 customers in Willistown. Application at ¶ 8. Although Willistown owns one wastewater treatment plant (WWTP), Penn's Preserve, which treats wastewater to a small community system, wastewater treatment is mainly provided by the Valley Forge Sewer Authority (VFSA).⁵ Application at ¶ 15.

On January 20, 2021, Aqua and Willistown entered into an APA for the sale of the assets, properties, and rights related to the Township's wastewater system at an agreed-upon price of \$17,500,000. Thereafter, Aqua and the Township agreed to use the process presented in Section 1329 of the Code to determine the FMV of the wastewater system assets and the ratemaking rate base. As required by Section 1329, Aqua and Willistown jointly retained the services of Pennoni Associates, Inc. (Pennoni) to complete the engineering assessment and original cost estimate of the System (Engineering Assessment). Aqua St. 1 at 19; Application at ¶ 11. Aqua selected Gannett Fleming, and the Township selected AUS, as their respective Utility Valuation Engineers (UVEs) to prepare FMV appraisals of the System. Application at ¶ 53. Gannett Fleming's FMV report concluded that the value of the System was \$25,612,805; AUS' FMV was \$19,113,140. Application Exhs. Q and R, respectively.^{6,7} Both appraisals were prepared in compliance with the Uniform Standards of Professional Appraisal Practice (USPAP) standards. Application at ¶ 61; Application Exhs. T1 and T2.

⁵ Willistown accepts flows into the System from users on the borders of Willistown, including from neighboring municipalities: Borough of Malvern (Malvern), East Goshen Township (East Goshen), and East Whiteland Township (EWT). While most flows from these users flow to the VFSA WWTP for treatment, some flows sent to East Goshen are treated at the East Goshen Municipal Authority (EGMA) Ridley Creek WWTP or the West Goshen Sewer Authority (WGSA) WWTP. Aqua St. 2 at 5-6.

⁶ Application Exhibit Q, Gannett Fleming Fair Market Value Appraisal Report (hereinafter "Application Exh. Q" or "Gannett Fleming FMV Appraisal").

⁷ Aqua Application, Exhibit R, AUS Fair Market Value Appraisal Report (hereinafter "Application Exh. R" or "AUS FMV Appraisal").

Borough of Brentwood
Management's Discussion and Analysis
December 31, 2018

2018 Highlighted Budget Components (Cont'd)

Capital Improvement Program (Cont'd)

- Debt Service (\$723,000)

These payments include general obligation bonds and leases that are associated with previously completed capital projects. In 2018, the Borough retired debt related to the procurement of Public Works Department vehicles, and, based upon the implementation of a new purchasing schedule, it is not anticipated that loans will be necessary to fund future auto acquisitions.

Municipal Building Project (\$355,000)

The Borough of Brentwood is one step closer to developing a new home for its municipal operations. Professional consultants updated design schematics and performed vital preliminary engineering work, while contractors were retained to remediate site hazards such as asbestos flooring and a discontinued underground gasoline storage tank. A vendor was selected to demolish the dilapidated Snee Dairy structure and to prepare the building site for the general contractor.

The Borough has established a separate enterprise fund to more efficiently and transparently account for building-related expenditures. The Borough additionally closed on a bond that will pay for the majority of construction costs. This funding mechanism features favorable terms that should safeguard the Borough from any need for a tax increase over a medium-term horizon.

Sanitary Sewer Projects (\$572,000)

Because the Borough contracts with ALCOSAN for wastewater treatment services, the Borough is bound by the terms of a federal consent order to reduce inflow and infiltration into the sanitary sewer system. The Borough is aggressively working to improve the quality of this infrastructure now so as to lessen the financial burden of upgrades in future years. The Borough utilizes traditional excavation and replacement methods, as well as trenchless lining and bursting techniques, to eliminate structural defects within these pipes. The Borough also uses CCTV to document the conditions of municipal sewers and to plan for future repairs. Additionally, the Borough continues to budget for important but often overlooked maintenance items, such as the cleaning and inspection of manholes and lamp holes.

Operational and Maintenance Improvements

The Borough is highly limited in its capacity to realize savings without negatively impacting its ability to provide quality services to its residents. Nonetheless, the Borough continuously strives to cut costs and augment efficiency where possible, including through the following:

- The Borough signed a new agreement with its Public Works Department that, in exchange for a slight increase in pay, yielded an opportunity for genuine operational improvements. Employees agreed to consent to a reduced vacation schedule and a cap on compensatory time. Both of these alterations will help to abate summer staffing deficiencies that have historically created a backlog of routine projects.

Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2018

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$1,969,194	\$3,642,995	\$8,177,058	\$410,481	\$14,199,728
Taxes Receivable, Net	611,265	-	-	-	611,265
Due from Other Funds	541,953	-	358,053	650	900,656
Due from Other Governments	29,172	-	90,000	-	119,172
Other Receivables	193,567	839,014	-	-	1,032,581
Prepaid Items	<u>65,728</u>	<u>44,887</u>	<u>-</u>	<u>-</u>	<u>110,615</u>
TOTAL ASSETS	<u>\$3,410,879</u>	<u>\$4,526,896</u>	<u>\$8,625,111</u>	<u>\$411,131</u>	<u>\$16,974,017</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 368,733	\$ 514,925	\$ 23,140	\$ 3,888	\$ 910,686
Accounts Payable	123,241	556,647	13,827	-	693,715
Contracts Payable	-	18,962	97,139	-	116,101
Accrued Salaries and Benefits	103,967	-	-	-	103,967
Payroll Deductions and Withholdings	8,759	-	-	-	8,759
Unearned Revenues	<u>30,000</u>	<u>40,159</u>	<u>-</u>	<u>-</u>	<u>70,159</u>
Total Liabilities	<u>634,700</u>	<u>1,130,693</u>	<u>134,106</u>	<u>3,888</u>	<u>1,903,387</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	<u>304,919</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>304,919</u>
Fund Balances					
Nonspendable	65,728	44,887	-	-	110,615
Restricted	-	-	-	207,415	207,415
Committed	-	3,351,316	8,491,005	199,828	12,042,149
Unassigned	<u>2,405,532</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>2,405,532</u>
Total Fund Balances	<u>2,471,260</u>	<u>3,396,203</u>	<u>8,491,005</u>	<u>407,243</u>	<u>14,765,711</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$3,410,879</u>	<u>\$4,526,896</u>	<u>\$8,625,111</u>	<u>\$411,131</u>	<u>\$16,974,017</u>

See Accompanying Notes

Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2018

	General Fund	Sewer Fund	Capital Projects Fund	Nonmajor Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,769,458	\$ -	\$ -	\$197,000	\$ 5,966,458
Licenses and Permits	209,029	-	-	-	209,029
Fines and Forfeits	101,502	-	-	-	101,502
Interest, Rents and Royalties	100,413	16,612	20,018	1,947	138,990
Intergovernmental	255,208	63,664	210,000	417,408	946,280
Charges for Services	1,304,580	3,818,653	102,760	43,023	5,269,016
Miscellaneous	29,446	-	5,100	-	34,546
Total Revenues	<u>7,769,636</u>	<u>3,898,929</u>	<u>337,878</u>	<u>659,378</u>	<u>12,665,821</u>
Expenditures					
Current:					
General Government	644,716	-	673,746	-	1,318,462
Public Safety	2,755,181	-	52,602	7,089	2,814,872
Public Works - Sanitation	559,450	2,498,401	16,222	-	3,114,073
Public Works - Highways	1,038,292	-	817,107	251,416	2,106,815
Public Works - Other	20,626	-	-	-	20,626
Culture - Recreation	332,837	-	246,496	385,611	964,944
Conservation and Development	2,981	-	-	-	2,981
Miscellaneous	627,617	-	-	-	627,617
Debt Service:					
Principal	-	114,048	470,098	-	584,146
Interest	4,884	4,552	230,600	-	240,036
Fiscal Fees	-	-	1,059	-	1,059
Total Expenditures	<u>6,026,584</u>	<u>2,617,001</u>	<u>2,507,930</u>	<u>644,116</u>	<u>11,795,631</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,743,052</u>	<u>1,281,928</u>	<u>(2,170,052)</u>	<u>15,262</u>	<u>870,190</u>
Other Financing Sources (Uses)					
Refunding Bond Proceeds	-	-	6,850,000	-	6,850,000
Premium on Bonds Issued	-	-	319,391	-	319,391
Transfers In	505,000	-	1,530,000	-	2,035,000
Sale/Compensation for Capital Assets	8,532	-	-	-	8,532
Transfers Out	(1,430,000)	(605,000)	-	-	(2,035,000)
Total Other Financing Sources (Uses)	<u>(916,468)</u>	<u>(605,000)</u>	<u>8,699,391</u>	<u>-</u>	<u>7,177,923</u>
Net Changes in Fund Balances	826,584	676,928	6,529,339	15,262	8,048,113
Fund Balances - January 1, 2018	<u>1,644,676</u>	<u>2,719,275</u>	<u>1,961,666</u>	<u>391,981</u>	<u>6,717,598</u>
Fund Balances - December 31, 2018	<u>\$ 2,471,260</u>	<u>\$3,396,203</u>	<u>\$ 8,491,005</u>	<u>\$407,243</u>	<u>\$14,765,711</u>

See Accompanying Notes

Borough of Brentwood
Notes to Financial Statements
December 31, 2018

Note 6 - Interfund Balances (Cont'd)

Balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made. All the balances above are expected to be collected in the subsequent year.

Note 7 - Interfund Transfers

For the year ended December 31, 2018, interfund transfers consisted of the following:

<u>Transfer To</u>	<u>Transfer From</u>		Totals
	General Fund	Sewer Fund	
General Fund	\$ -	\$505,000	\$ 505,000
Capital Projects Fund	<u>1,430,000</u>	<u>100,000</u>	<u>1,530,000</u>
	<u>\$1,430,000</u>	<u>\$605,000</u>	<u>\$2,035,000</u>

The transfer from the general fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the general fund was to reimburse the general fund for expenditures it had previously paid. The transfer from the debt service fund to the capital projects fund was to close out the account.

Note 8 - Long-Term Debt

Long-term liability activity for the year ended December 31, 2018 was as follows:

	Balance 01/01/18	Additions	Retirements	Balance 12/31/18	Due Within One Year
Governmental Activities					
Bonds Payable					
General Obligation Bonds	\$8,185,000	\$6,850,000	\$395,000	\$14,640,000	\$405,000
Add: Bond Premium	-	319,391	4,095	315,296	-
Less: Bond Discount	<u>(62,994)</u>	<u>-</u>	<u>(4,852)</u>	<u>(58,142)</u>	<u>-</u>
Total Bonds Payable	<u>8,122,006</u>	<u>7,169,391</u>	<u>394,243</u>	<u>14,897,154</u>	<u>405,000</u>

**Borough of Brentwood
 Management's Discussion and Analysis
 December 31, 2019**

- Pool (\$478,000)

Design fees contributed towards \$128,000 of the 2019 expenditures associated with the Brentwood Pool. The highly anticipated Pool Renovations Project was awarded and commenced. Only \$350,000 of the \$3.2 million project was invoiced in 2019. This project will continue in 2020 with a completion date of October 2020.

- Park (\$368,700)

The majority of the 2019 expenditures, (\$351,400), were associated with Legal Fees and an ultimate settlement associated with the continuing lawsuit with the Phase III park contractor. Repairs to the Jim Attanucci field and the removal and planting of new trees (\$17,300) were also completed in 2019.

- 2019 Sanitary Sewer GIS Project (\$10,000)

Associated with the mandated Consent Decree the Borough is required to map and track all repairs/inspections to its many miles of underground sanitary sewer system. As such, the Borough has contracted with the Gateway Engineers to utilize Geographical Information System (GIS) to map and record all activity associated with the Sanitary Sewer System.

- 2019 Sanitary Sewer Repairs Project-Consent Order Phase I (\$569,500)

This project involved sanitary sewer repair including any combination of the following items: sanitary sewer excavation point repair and replacement, wye branch and lateral repairs, CCTV verification of the repair locations and post repair CCTV documentation, additional CCTV, location and adjustment of buried sanitary sewer manholes, lamp hole replacement, manhole installation and sanitary sewer pipe cleaning. All related traffic control and residence notification and the restoration of disturbed areas including driveways, sidewalks, roadways, curbs, walls, lawn areas; shrubbery, etc. are included in the project.

The Borough is required by the Consent Order to Closed Circuit Televising (CCTV) and makes repairs to structural Level 5 defects in the sewers.

New Additions and Promotions to the Borough Family

The Borough welcomed three (3) new fulltime employee to the Borough. Ms. Amy Medway was hired as full-time delinquent sewage collections/clerical. Ms. Pam Williams was hired as a full-time police clerical. Officer Scott Massey was hired as the newest member to Brentwood's Police Department.

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2019**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$2,768,357	\$3,835,711	\$6,489,579	\$450,013	\$13,543,660
Taxes Receivable, Net	631,689	-	-	-	631,689
Due from Other Funds	16,625	-	210,903	650	228,178
Due from Other Governments	31,905	-	65,000	-	96,905
Other Receivables	192,656	817,456	-	-	1,010,112
Prepaid Items	68,060	44,887	-	1,501	114,448
TOTAL ASSETS	\$3,709,292	\$4,698,054	\$6,765,482	\$452,164	\$15,624,992
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 220,933	\$ 4,693	\$ -	\$ 12,582	\$ 238,208
Accounts Payable	132,668	536,978	359,074	44,251	1,072,971
Contracts Payable	-	18,109	84,651	-	102,760
Accrued Salaries and Benefits	146,843	-	-	-	146,843
Payroll Deductions and Withholdings	9,428	-	-	-	9,428
Unearned Revenues	30,811	28,450	-	-	59,261
Total Liabilities	540,683	588,230	443,725	56,833	1,629,471
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	303,667	-	-	-	303,667
Fund Balances					
Nonspendable	68,060	44,887	-	1,501	114,448
Restricted	-	-	-	190,948	190,948
Committed	-	4,064,937	6,321,757	202,882	10,589,576
Unassigned	2,796,882	-	-	-	2,796,882
Total Fund Balances	2,864,942	4,109,824	6,321,757	395,331	13,691,854
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	\$3,709,292	\$4,698,054	\$6,765,482	\$452,164	\$15,624,992

See Accompanying Notes

Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2019

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$5,659,094	\$ -	\$ -	\$ 197,000	\$ 5,856,094
Licenses and Permits	215,625	-	-	-	215,625
Fines and Forfeits	81,943	-	-	-	81,943
Interest, Rents and Royalties	99,951	35,014	97,190	2,229	234,384
Intergovernmental	271,528	4,351	85,961	431,324	793,164
Charges for Services	1,251,145	3,777,696	49,184	16,799	5,094,824
Miscellaneous	57,003	761	82,882	22,129	162,775
Total Revenues	7,636,289	3,817,822	315,217	669,481	12,438,809
Expenditures					
Current:					
General Government	634,241	-	1,496,767	-	2,131,008
Public Safety	2,923,463	-	10,590	-	2,934,053
Public Works - Sanitation	668,649	2,452,191	209,698	-	3,330,538
Public Works - Highway	1,089,337	-	439,531	291,461	1,820,329
Public Works - Other	16,586	-	-	-	16,586
Culture - Recreation	226,501	-	1,125,515	389,932	1,741,948
Conservation and Development	4,197	-	-	-	4,197
Miscellaneous	580,838	-	-	-	580,838
Debt Service:					
Principal	-	21,914	442,839	-	464,753
Interest	-	3,222	506,759	-	509,981
Fiscal Fees	-	-	1,500	-	1,500
Total Expenditures	6,143,812	2,477,327	4,233,199	681,393	13,535,731
Excess (Deficiency) of Revenues					
Over Expenditures	1,492,477	1,340,495	(3,917,982)	(11,912)	(1,096,922)
Other Financing Sources (Uses)					
Transfers In	526,140	-	1,748,734	-	2,274,874
Sale/Compensation for Fixed Assets	23,065	-	-	-	23,065
Transfers Out	(1,648,000)	(626,874)	-	-	(2,274,874)
Total Other Financing					
Sources (Uses)	(1,098,795)	(626,874)	1,748,734	-	23,065
Net Changes in Fund Balances	393,682	713,621	(2,169,248)	(11,912)	(1,073,857)
Fund Balances - January 1, 2019	2,471,260	3,396,203	8,491,005	407,243	14,765,711
Fund Balances - December 31, 2019	\$2,864,942	\$4,109,824	\$ 6,321,757	\$ 395,331	\$13,691,854

See Accompanying Notes

Borough of Brentwood
Notes to Financial Statements
December 31, 2019

Depreciation expense was charged to functions/programs as follows:

Governmental Activities

General Government	\$ 38,010
Public Safety	50,529
Public Works	99,153
Culture - Recreation	<u>335,734</u>
Total Depreciation Expense	<u>\$ 523,426</u>

Note 5 - Interfund Balances

Interfund balances at December 31, 2019, were:

Fund	Interfund Receivable	Interfund Payable
General Fund	\$ 16,625	\$ 220,933
Sewer Fund	-	4,693
Capital Projects Fund	210,903	-
Nonmajor Funds	650	12,582
Fiduciary Fund	<u>10,960</u>	<u>930</u>
	<u>\$ 239,138</u>	<u>\$ 239,138</u>

Balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made. All the balances above are expected to be collected in the subsequent year.

Note 6 - Interfund Transfers

For the year ended December 31, 2019, interfund transfers consisted of the following:

Transfers To	Transfer From		Totals
	General Fund	Sewer Fund	
General Fund	\$ -	\$ 526,140	\$ 526,140
Capital Projects Fund	<u>1,648,000</u>	<u>100,734</u>	<u>1,748,734</u>
	<u>\$1,648,000</u>	<u>\$ 626,874</u>	<u>\$2,274,874</u>

The transfer from the general fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the general fund was to reimburse the general fund for expenditures it had previously paid.

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2020**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$ 3,204,952	\$ 3,399,537	\$ 757,997	\$ 524,893	\$ 7,887,379
Taxes Receivable, Net	777,059	-	-	-	777,059
Due from Other Funds	138,611	344,978	345,081	650	829,320
Due from Other Governments	25,156	-	804,450	-	829,606
Other Receivables	268,775	1,018,504	-	-	1,287,279
Prepaid Items	70,782	44,887	-	-	115,669
TOTAL ASSETS	<u>\$ 4,485,335</u>	<u>\$ 4,807,906</u>	<u>\$ 1,907,528</u>	<u>\$ 525,543</u>	<u>\$ 11,726,312</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$ 355,658	\$ -	\$ 470,518	\$ 13,174	\$ 839,350
Accounts Payable	130,164	599,935	557,356	58,992	1,346,447
Contracts Payable	-	11,034	111,389	-	122,423
Accrued Salaries and Benefits	163,246	-	-	-	163,246
Payroll Deductions and Withholdings	10,529	-	-	-	10,529
Unearned Revenues	17,190	69,850	-	-	87,040
Other Current Liabilities	159,818	-	-	-	159,818
Total Liabilities	<u>836,605</u>	<u>680,819</u>	<u>1,139,263</u>	<u>72,166</u>	<u>2,728,853</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	353,955	-	-	-	353,955
Fund Balances					
Nonspendable	70,782	44,887	-	-	115,669
Restricted	-	-	-	196,831	196,831
Committed	-	4,082,200	768,265	256,546	5,107,011
Unassigned	3,223,993	-	-	-	3,223,993
Total Fund Balances	<u>3,294,775</u>	<u>4,127,087</u>	<u>768,265</u>	<u>453,377</u>	<u>8,643,504</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$ 4,485,335</u>	<u>\$ 4,807,906</u>	<u>\$ 1,907,528</u>	<u>\$ 525,543</u>	<u>\$ 11,726,312</u>

See Accompanying Notes

Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2020

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$ 5,587,808	\$ -	\$ -	\$ 197,000	\$ 5,784,808
Licenses and Permits	178,326	-	-	-	178,326
Fines and Forfeits	103,645	-	-	-	103,645
Interest, Rents and Royalties	94,324	40,791	29,723	887	165,725
Intergovernmental	390,560	145,845	814,450	490,559	1,841,414
Charges for Services	1,122,527	3,885,852	30,081	5,650	5,044,110
Miscellaneous	33,679	3,300	-	15,938	52,917
Total Revenues	<u>7,510,869</u>	<u>4,075,788</u>	<u>874,254</u>	<u>710,034</u>	<u>13,170,945</u>
Expenditures					
Current:					
General Government	680,039	-	3,798,063	-	4,478,102
Public Safety	3,055,567	-	108,844	-	3,164,411
Public Works - Sanitation	689,480	2,690,695	33,202	-	3,413,377
Public Works - Highway	1,104,713	-	775,554	272,980	2,153,247
Public Works - Other	11,052	-	-	-	11,052
Culture - Recreation	197,313	-	2,945,443	380,183	3,522,939
Conservation and Development	15	-	-	-	15
Miscellaneous	541,732	-	107,287	-	649,019
Debt Service:					
Principal	-	22,573	374,530	-	397,103
Interest	-	2,563	427,517	-	430,080
Total Expenditures	<u>6,279,911</u>	<u>2,715,831</u>	<u>8,570,440</u>	<u>653,163</u>	<u>18,219,345</u>
Excess (Deficiency) of Revenues Over Expenditures	<u>1,230,958</u>	<u>1,359,957</u>	<u>(7,696,186)</u>	<u>56,871</u>	<u>(5,048,400)</u>
Other Financing Sources (Uses)					
Transfers In	590,000	-	2,142,694	1,175	2,733,869
Sale/Compensation for Fixed Assets	50	-	-	-	50
Transfers Out	(1,391,175)	(1,342,694)	-	-	(2,733,869)
Total Other Financing Sources (Uses)	<u>(801,125)</u>	<u>(1,342,694)</u>	<u>2,142,694</u>	<u>1,175</u>	<u>50</u>
Net Changes in Fund Balances	<u>429,833</u>	<u>17,263</u>	<u>(5,553,492)</u>	<u>58,046</u>	<u>(5,048,350)</u>
Fund Balances - January 1, 2020	<u>2,864,942</u>	<u>4,109,824</u>	<u>6,321,757</u>	<u>395,331</u>	<u>13,691,854</u>
Fund Balances - December 31, 2020	<u>\$ 3,294,775</u>	<u>\$ 4,127,087</u>	<u>\$ 768,265</u>	<u>\$ 453,377</u>	<u>\$ 8,643,504</u>

See Accompanying Notes

**Borough of Brentwood
Notes to Financial Statements
December 31, 2020**

Note 7 - Interfund Transfers

For the year ended December 31, 2020, interfund transfers consisted of the following:

Transfers To	Transfer From		Totals
	General Fund	Sewer Fund	
General Fund	\$ -	\$ 590,000	\$ 590,000
Capital Projects Fund	1,390,000	752,694	2,142,694
Nonmajor Funds	1,175	-	1,175
	\$ 1,391,175	\$ 1,342,694	\$ 2,733,869

The transfer from the general fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the general fund to the nonmajor funds was to help fund various liquid fuels expenditures in the Borough. The transfer from the sewer fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the general fund was to reimburse the general fund for expenditures it had previously paid.

Note 8 - Long-Term Liabilities

Long-term liability for the year ended December 31, 2020 was as follows:

	Balance 01/01/20	Additions	Retirements	Balance 12/31/20	Due Within One Year
Governmental Activities					
Bonds Payable					
General Obligation Bonds	\$ 14,430,000	\$ -	\$ 335,000	\$ 14,095,000	\$ 455,000
Add: Bond Premium	339,091	-	14,690	324,401	-
Total Bonds Payable	14,769,091	-	349,690	14,419,401	455,000
General Obligation Notes	96,607	-	22,573	74,034	23,254
Capital Leases	128,027	-	39,530	88,497	28,112
Compensated Absences	201,724	95,022	-	296,746	10,000
Long-Term Liabilities	\$ 15,195,449	\$ 95,022	\$ 411,793	\$ 14,878,678	\$ 516,366

As of December 31, 2020, the long-term debt arising from loans payable from governmental fund resources, consisted of the following:

**Borough of Brentwood
Balance Sheet
Governmental Funds
December 31, 2021**

Exhibit 3

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
ASSETS					
Cash and Cash Equivalents	\$2,015,811	\$3,580,426	\$1,561,688	\$314,496	\$7,472,421
Taxes Receivable, Net	749,242	-	-	-	749,242
Due from Other Funds	421,870	425,037	230,336	650	1,077,893
Due from Other Governments	6,817	-	1,072,600	-	1,079,417
Other Receivables	259,096	635,047	-	-	894,143
Prepaid Items	85,179	-	-	-	85,179
TOTAL ASSETS	<u>\$3,538,015</u>	<u>\$4,640,510</u>	<u>\$2,864,624</u>	<u>\$315,146</u>	<u>\$11,358,295</u>
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES					
Liabilities					
Due to Other Funds	\$666,053	\$-	\$418,046	\$3,824	\$1,087,923
Accounts Payable	118,249	482,470	20,040	-	620,759
Contracts Payable	-	15,879	102,442	-	118,321
Accrued Salaries and Benefits	170,063	-	-	-	170,063
Payroll Deductions and Withholdings	14,516	-	-	-	14,516
Unearned Revenues	-	-	11,020	-	11,020
Other Current Liabilities	182,417	-	-	-	182,417
Total Liabilities	<u>1,151,298</u>	<u>498,349</u>	<u>551,548</u>	<u>3,824</u>	<u>2,205,019</u>
Deferred Inflows of Resources					
Unavailable Revenues - Property Taxes	394,602	-	-	-	394,602
Fund Balances					
Nonspendable	85,179	-	-	-	85,179
Restricted	-	-	-	34,228	34,228
Committed	-	4,142,161	2,313,076	277,094	6,732,331
Unassigned	1,906,936	-	-	-	1,906,936
Total Fund Balances	<u>1,992,115</u>	<u>4,142,161</u>	<u>2,313,076</u>	<u>311,322</u>	<u>8,758,674</u>
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND FUND BALANCES	<u>\$3,538,015</u>	<u>\$4,640,510</u>	<u>\$2,864,624</u>	<u>\$315,146</u>	<u>\$11,358,295</u>

See Accompanying Notes

Borough of Brentwood
Statement of Revenues, Expenditures
and Changes in Fund Balances
Governmental Funds
Year Ended December 31, 2021

Exhibit 5

	General Fund	Sewer Fund	Capital Projects Fund	Non-Major Funds	Total Governmental Funds
Revenues					
Taxes	\$5,968,123	\$ -	\$ -	\$ 201,000	\$ 6,169,123
Licenses and Permits	164,914	-	-	-	164,914
Fines and Forfeits	80,824	-	-	-	80,824
Interest, Rents and Royalties	98,337	13,840	336	283	112,796
Intergovernmental	351,572	323,944	735,589	404,642	1,815,747
Charges for Services	1,374,011	4,132,883	67,073	6,602	5,580,569
Miscellaneous	26,679	-	-	30,558	57,237
Total Revenues	8,064,460	4,470,667	802,998	643,085	13,981,210
Expenditures					
Current:					
General Government	819,181	-	559,874	-	1,379,055
Public Safety	3,235,661	-	127,936	-	3,363,597
Public Works - Sanitation	728,402	3,562,957	-	-	4,291,359
Public Works - Highway	1,217,573	-	608,852	210,460	2,036,885
Public Works - Other	-	-	4,243	-	4,243
Culture - Recreation	489,952	-	197,967	374,680	1,062,599
Conservation and Development	47,288	-	-	-	47,288
Miscellaneous	761,938	-	3,215	-	765,153
Debt Service:					
Principal	-	23,254	483,112	-	506,366
Interest	-	1,882	462,988	-	464,870
Total Expenditures	7,299,995	3,588,093	2,448,187	585,140	13,921,415
Excess (Deficiency) of Revenues					
Over Expenditures	764,465	882,574	(1,645,189)	57,945	59,795
Other Financing Sources (Uses)					
Transfers In	457,500	-	3,190,000	-	3,647,500
Sale/Compensation for Fixed Assets	55,375	-	-	-	55,375
Transfers Out	(2,580,000)	(867,500)	-	(200,000)	(3,647,500)
Total Other Financing Sources (Uses)	(2,067,125)	(867,500)	3,190,000	(200,000)	55,375
Net Changes in Fund Balances	(1,302,660)	15,074	1,544,811	(142,055)	115,170
Fund Balances - January 1, 2021	3,294,775	4,127,087	768,265	453,377	8,643,504
Fund Balances - December 31, 2021	\$1,992,115	\$4,142,161	\$ 2,313,076	\$ 311,322	\$ 8,758,674

See Accompanying Notes

**Borough of Brentwood
Notes to Financial Statements
December 31, 2021**

Depreciation expense was charged to functions/programs as follows:

Governmental Activities

General Government	\$ 47,229
Public Safety	62,841
Public Works	123,212
Culture - Recreation	<u>417,254</u>
Total Depreciation Expense	<u>\$ 650,536</u>

Note 5 - Interfund Balances

Interfund balances at December 31, 2021, were:

Fund	Interfund Receivable	Interfund Payable
General Fund	\$ 421,870	\$ 666,053
Sewer Fund	425,037	-
Capital Projects Fund	230,336	418,046
Nonmajor Funds	650	3,824
Fiduciary Fund	<u>10,960</u>	<u>930</u>
	<u>\$1,088,853</u>	<u>\$1,088,853</u>

Balances resulted from the time lag between the dates that (1) interfund goods and services are provided or reimbursable expenditures occur, (2) transactions are recorded in the accounting system, and (3) payments between funds are made. All the balances above are expected to be collected in the subsequent year.

Note 6 - Interfund Transfers

For the year ended December 31, 2021, interfund transfers consisted of the following:

Transfers To	Transfer From			Totals
	General Fund	Sewer Fund	Nonmajor Funds	
General Fund	\$ -	\$ 457,500	\$ -	\$ 457,500
Capital Projects Fund	<u>2,580,000</u>	<u>410,000</u>	<u>200,000</u>	<u>3,190,000</u>
	<u>\$2,580,000</u>	<u>\$ 867,500</u>	<u>\$ 200,000</u>	<u>\$3,647,500</u>

The transfer from the general fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the capital projects fund was to help fund various capital projects in the Borough. The transfer from the sewer fund to the general fund was to reimburse the general fund for expenditures it had previously paid.



FUND 08

Sanitary Sewer Fund Budget

The Sanitary Sewer Fund is an Enterprise Fund account for the Borough's ongoing activities that are similar to private business enterprises where the Borough intends that the costs of providing services to the general public continually be financed or recovered primarily through user charges or fees.

2022 Revenues = \$7,622,000.00

2022 Expenditures = \$7,622,000.00

08
**Sanitary Sewer Fund
Revenues**

2022 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES
08 SANITARY SEWER FUND REVENUES

SANITARY SEWER FUND BUDGET
FINAL

	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021*	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
08 SANITARY SEWER FUND								
08 100								
BEGINNING BALANCES								
BEGINNING BALANCE	\$ 3,556,397.31	\$ 2,915,827.10	\$ 3,748,349.50	\$ 2,820,413.00	\$ 400,000.00	\$ 3,404,244.95	\$ 3,000,000.00	650%
TOTAL BEGINNING BALANCES	\$ 3,181,082.00	\$ 3,556,397.31	\$ 3,748,349.50	\$ 2,820,413.00	\$ 400,000.00	\$ 3,404,244.95	\$ 3,000,000.00	650%
STATE CAP & OPERATING GRANTS								
GROW GRANT	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 10,310.27	\$ 149,000.00	\$ 168,000.00	\$ -	-100%
ARPA GRANT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 505,000.00	\$ -	New Item
TOTAL GRANT REVENUES	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 10,310.27	\$ 149,000.00	\$ 673,000.00	\$ -	
SEWER CHARGES REVENUES								
INTEREST	\$ 1,690.47	\$ 16,611.94	\$ 11,617.14	\$ 5,901.91	\$ 7,000.00	\$ 1,000.00	\$ 1,000.00	-86%
SEWER CHARGES - CURRENT	\$ 3,357,133.24	\$ 3,621,761.52	\$ 3,618,683.98	\$ 3,607,119.05	\$ 3,300,000.00	\$ 3,900,000.00	\$ 3,600,000.00	9%
SEWER CHARGES - DELINQUENT	\$ 214,696.00	\$ 159,600.23	\$ 151,409.30	\$ 278,536.33	\$ 300,000.00	\$ 170,000.00	\$ 150,000.00	-50%
ALCOSAN BILLING REIMBURSEMENT	\$ 11,146.46	\$ 12,204.75	\$ 12,538.68	\$ 12,870.00	\$ 12,000.00	\$ 13,000.00	\$ 12,000.00	0%
REIMBURS. SHUT-OFF FEES	\$ 160.00	\$ 400.00	\$ 410.00	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	0%
REIMBURS. LIEN REMOVAL FEE	\$ 9,370.78	\$ 6,630.79	\$ 4,113.12	\$ 5,526.52	\$ 4,000.00	\$ 1,000.00	\$ 1,000.00	-75%
TOTAL SEWER CHARGES REVENUES	\$ 3,594,196.95	\$ 3,817,209.23	\$ 3,798,772.22	\$ 3,909,953.81	\$ 3,624,000.00	\$ 4,085,000.00	\$ 3,765,000.00	4%
TRANSFERS								
TRANSFER - FROM CAPITAL IMPROVEMENT FUND	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ -	\$ 857,000.00	-14%
TOTAL TRANSFERS BALANCES	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ -	\$ 857,000.00	-14%
TOTAL SANITARY SEWER FUND REVENUES	\$ 6,775,278.95	\$ 7,437,270.54	\$ 7,604,826.56	\$ 6,740,677.08	\$ 5,173,000.00	\$ 8,162,244.95	\$ 7,622,000.00	47%

08 100

Beginning Balance

08 100	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021*	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
SANITARY SEWER FUND								
BEGINNING BALANCES								
BEGINNING BALANCE	\$ 3,556,397.31	\$ 2,915,827.10	\$ 3,748,349.50	\$ 2,820,413.00	\$ 400,000.00	\$ 3,404,244.95	\$ 3,000,000.00	650%
TOTAL BEGINNING BALANCES	\$ 3,181,082.00	\$ 3,556,397.31	\$ 3,748,349.50	\$ 2,820,413.00	\$ 400,000.00	\$ 3,404,244.95	\$ 3,000,000.00	650%
*Includes investment CD of 42,068,740.88								
BEGINNING BALANCE(See Note)								
*It is anticipated that the 2022 Beginning Balance will be =							SAY	\$ 3,000,000.00
Balance as of 10-1-2021 *	\$ 3,571,164.09							
October Revenues	\$ 290,000.00							
November Revenues	\$ 290,000.00							
December Revenues	\$ 500,000.00							
October Expenditures	\$ 1,000,000.00							
November Expenditures	\$ 150,000.00							
December Expenditures	\$ 280,000.00							
Beginning Balance	\$ 3,221,164.09							
Note that the beginning balance does include funds that have been transferred to a certificate of deposit.								

08 354

State Capital & Operating Grants

2022 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES									
08 354 STATE CAPITAL & OPERATING GRANTS									
SANITARY SEWER FUND BUDGET									
FINAL									
		ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
08	SANITARY SEWER FUND								
08 354	STATE CAP & OPERATING GRANTS								
08 341-010	GROW GRANT	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 10,310.27	\$ 149,000.00	\$ 168,000.00	\$ -	-100%
08 341-020	ARPA GRANT	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 505,000.00	\$ -	New Item
	TOTAL GRANT REVENUES	\$ -	\$ 63,664.00	\$ 57,704.84	\$ 10,310.27	\$ 149,000.00	\$ 673,000.00	\$ -	NA
	Summary and Assumptions:								
	Grant Revenues								
	Fiscal Year 2022 Budget Recommendations:	\$ -							a decrease of \$ (149,000.00)
	Fiscal Year 2021 Adopted Budget:		\$ 149,000.00						
	Fiscal Year 2021 Projected Budget:		\$ 673,000.00						
			\$ 524,000.00						

08 341-364

Sewer Charges

08	SANTARY SEWER FUND	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
SEWER CHARGES REVENUES									
08 341-010	INTEREST	\$ 1,690.47	\$ 16,611.94	\$ 11,617.14	\$ 5,901.91	\$ 7,000.00	\$ 1,000.00	\$ 1,000.00	-86%
08 364-010	SEWER CHARGES - CURRENT	\$ 3,357,133.24	\$ 3,621,761.52	\$ 3,618,683.98	\$ 3,607,119.05	\$ 3,300,000.00	\$ 3,900,000.00	\$ 3,600,000.00	9%
08 364-050	SEWER CHARGES - DELINQUENT	\$ 214,696.00	\$ 159,600.23	\$ 151,409.30	\$ 278,536.33	\$ 300,000.00	\$ 170,000.00	\$ 150,000.00	-50%
08 364-100	ALCOSAN BILLING REIMBURSEMENT	\$ 11,146.46	\$ 12,204.75	\$ 12,538.68	\$ 12,870.00	\$ 12,000.00	\$ 13,000.00	\$ 12,000.00	0%
08 364-900	REIMBURS. SHUT-OFF FEES	\$ 160.00	\$ 400.00	\$ 410.00	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	0%
08 364-902	REIMBURS. LIEN REMOVAL FEE	\$ 9,370.78	\$ 6,630.79	\$ 4,113.12	\$ 5,526.52	\$ 4,000.00	\$ 1,000.00	\$ 1,000.00	-75%
TOTAL SEWER CHARGES REVENUES		\$ 3,594,196.95	\$ 3,817,209.23	\$ 3,798,772.22	\$ 3,909,953.81	\$ 3,624,000.00	\$ 4,085,000.00	\$ 3,765,000.00	4%
Summary and Assumptions:									
Sewer Charges Revenues									
Fiscal Year 2022 Budget Recommendations:									
Fiscal Year 2021 Adopted Budget:									
Fiscal Year 2021 Projected Budget:									
surplus projected									
an increase of \$ 141,000.00									
*Includes a 7% ALCOSAN sewer rate increase.									
*Includes 0% Borough sewer fee increase.									
Assumptions									
*Brentwood Bank offers an interest rate of 0.5%									
Interest on \$1,500,000 average fund balance =									
SAY									
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
08 341-100	INTEREST	\$ 1,690.47	\$ 16,611.94	\$ 11,617.14	\$ 5,901.91	\$ 7,000.00	\$ 1,000.00	\$ 1,000.00	-86%
Assumptions									
*Brentwood Bank offers an interest rate of 0.5%									
Interest on \$1,500,000 average fund balance =									
SAY									

2022 BRENTWOOD BUDGET SANITARY SEWER FUND REVENUES												SANITARY SEWER FUND BUDGET	
08 341 & 364 SEWER CHARGES REVENUES												FINAL	
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021				
08 341-050	SEWER CHARGES - DELINQUENT	\$ 214,696.00	\$ 159,600.23	\$ 151,409.30	\$ 278,536.33	\$ 300,000.00	\$ 170,000.00	\$ 150,000.00	-50%				
	The line item is used to record all receipts that are more than 90 days past due when received.												
	If the sanitary sewer system is sold, the Borough would retain responsibility for collecting any outstanding balances.												
	Annual amount billed to residents =			\$ 4,122,052.80									
	Assumption: 8% of fees collected once 90 days past due			\$ 329,764.22									
								SAY	\$ 150,000.00				
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021				
08 364-100	ALCOSAN BILLING REIMBURSEMENT	\$ 11,146.46	\$ 12,204.75	\$ 12,538.68	\$ 12,870.00	\$ 12,000.00	\$ 13,000.00	\$ 12,000.00	0%				
	Any member municipality may contract with ALCOSAN for billing services. Three of 83 communities currently utilize this function. Because Brentwood performs its own billing, it receives a lump sum refund. Trends show this reimbursement increasing by \$300 to \$500 per year.												
								SAY	\$ 12,000.00				
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021				
08 364-900	REIMBURS. SHUT-OFF FEES	\$ 160.00	\$ 400.00	\$ 410.00	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	0%				
	*This is associated with the \$60 shut-off fee that Penn American Water charges the Borough. The customers are required to pay this amount before their water is turned back on. Because the Borough is utilizing Swift 911 to contact delinquent customers, the vast majority of property owners who receive a termination notice make payment before the water is actually switched off.												
	Estimated Shut-Offs =			10									
	PAW Shut-Off Fee =			\$ 60.00									
				\$ 600.00				SAY	\$ 1,000.00				

2022 BRENTWOOD BUDGET SANTARY SEWER FUND REVENUES										SANTARY SEWER FUND BUDGET	
08 341 & 364 SEWER CHARGES REVENUES										FINAL	
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021		
08 364-902	REIMBURS. LIEN REMOVAL FEE	\$ 9,370.78	\$ 6,630.79	\$ 4,113.12	\$ 5,526.52	\$ 4,000.00	\$ 1,000.00	\$ 1,000.00	-75%		
	*This is associated with the satifying of a lien by a customer. This is also reimbursed by the resident.										
	Estimated liens satisfied =			9							
	Estimated legal/court costs =			\$ 400.00							
				\$ 3,600.00				SAY			\$ 1,000.00

08 392

Transfers

	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
08 392 SANITARY SEWER FUND								
08 392 TRANSFERS								
08 392-018 TRANSFER - FROM CAPITAL IMPROVEMENT FUND	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ -	\$ 857,000.00	-14%
TOTAL TRANSFERS BALANCES	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000.00	\$ -	\$ 857,000.00	-14%
08 392-018 TRANSFER - FROM CAPITAL IMPROVEMENT FUND								
In 2020, construction delays with the Pool Renovation project, Library Roof Project, and Brownsville Road Streetscape Project due to Covid-19, the grant funding associated with these projects was likewise delayed. As such, funds were needed to ensure timely payment to the contractors so that the Borough could then make application for reimbursement of these costs. A "Stop Gap" loan from the Sanitary Sewer Fund was approved by Borough Council on 11/16/2020.								
CITF			\$ 275,000.00					
CFA - MULTIMODAL GRANT			\$ 155,000.00					
DCNR/LWCF GRANT			\$ 797,000.00					
KEYSTONE LIBRARY GRANT			\$ 61,000.00					
			\$ 1,288,000.00					
The Borough ended up borrowing \$857,694 from the Sanitary Sewer Fund in 2020 and 2021.								
							\$ 857,000.00	
							SAY	

08
**Sanitary Sewer Fund
Expenditures**

	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021
08 SANITARY SEWER FUND								
DATA PROCESSING/IT								
08 407-454 GENERAL HARDWARE	\$ 1,330.00	\$ -	\$ 848.50	\$ 2,597.40	\$ -	\$ -	\$ -	NA
08 407-455 GENERAL SOFTWARE/LICENSES	\$ 14,576.68	\$ 2,857.50	\$ 3,028.90	\$ 6,200.00	\$ 4,000.00	\$ 2,200.00	\$ 3,000.00	-25%
TOTAL DATA PROCESSING/IT	\$ 15,906.68	\$ 2,857.50	\$ 3,877.40	\$ 8,797.40	\$ 4,000.00	\$ 2,200.00	\$ 3,000.00	-25%
OPERATIONS & MAINTENANCE								
08 429-313 ENGINEERING SERVICES	\$ 170,215.37	\$ 118,574.49	\$ 145,966.40	\$ 118,785.50	\$ 170,000.00	\$ 156,000.00	\$ 170,000.00	0%
08 429-314 LEGAL SERVICES	\$ 7,210.75	\$ 20,303.86	\$ 13,406.07	\$ 74,442.61	\$ 60,000.00	\$ 75,000.00	\$ 80,000.00	33%
08 429-370 R&M SERVICES	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ -	\$ 5,000.00	0%
08 429-372 O & M PLAN	\$ 497,122.31	\$ 401,261.15	\$ 399,866.53	\$ 462,272.73	\$ 597,000.00	\$ 505,000.00	\$ 600,000.00	1%
08 429-450 CONTRACTED SERVICES	\$ 35,510.00	\$ 24,672.20	\$ 21,123.74	\$ 29,670.00	\$ 235,000.00	\$ 50,000.00	\$ 100,000.00	-57%
08 429-610 CAPITAL CONSTRUCTION	\$ 134,694.20	\$ 27,700.00	\$ 112.00	\$ -	\$ 100,000.00	\$ 50,000.00	\$ 100,000.00	0%
08 429-700 CAPITAL PURCHASE	\$ 295.37	\$ -	\$ -	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	0%
TOTAL OPERATIONS & MAINTENANCE	\$ 845,048.00	\$ 592,511.70	\$ 580,474.74	\$ 685,170.84	\$ 1,168,000.00	\$ 836,000.00	\$ 1,056,000.00	-10%
WASTEWATER COLLECTION & TREATMENT								
08 429-210 OFFICE SUPPLIES	\$ 73.19	\$ 98.38	\$ 56.09	\$ -	\$ -	\$ -	\$ -	NA
08 429-311 AUDITING SERVICES	\$ 5,000.00	\$ 5,000.00	\$ 5,025.68	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	0%
08 429-316 SERVICE/ADMIN FEES	\$ 5,129.07	\$ 2,368.98	\$ 4,269.02	\$ 3,478.47	\$ 9,000.00	\$ 3,800.00	\$ 9,000.00	0%
08 429-325 POSTAGE	\$ 1,351.05	\$ 20,680.26	\$ 18,856.47	\$ 19,875.63	\$ 22,000.00	\$ 21,800.00	\$ 22,000.00	0%
08 429-341 ADVERTISING	\$ 85.50	\$ 750.35	\$ 2,830.48	\$ -	\$ 3,000.00	\$ 1,000.00	\$ 3,000.00	0%
08 429-453 CONTRACTED SVCS-ALCOSAN	\$ 1,621,611.88	\$ 1,825,335.87	\$ 1,793,761.75	\$ 2,366,158.96	\$ 2,561,000.00	\$ 2,300,000.00	\$ 2,561,000.00	0%
08 429-454 CONTRACTED SVCS-BILLING	\$ 108,444.59	\$ 48,997.70	\$ 41,804.60	\$ 26,795.89	\$ 28,000.00	\$ 30,000.00	\$ 13,000.00	-54%
TOTAL WASTEWATER COLLECTION & TREATMENT	\$ 1,741,695.28	\$ 1,903,431.54	\$ 1,866,604.09	\$ 2,421,308.95	\$ 2,628,000.00	\$ 2,361,600.00	\$ 2,613,000.00	-1%
DEBT PRINCIPAL								
08 471-201 2005 PWSA LOAN	\$ 20,652.06	\$ 21,279.79	\$ 21,914.29	\$ 22,574.08	\$ 24,000.00	\$ 23,254.00	\$ 24,000.00	0%
08 471-202 2007 PENNVEST PRINCIPAL	\$ 183,207.51	\$ 92,774.00						CLOSED
TOTAL DEBT PRINCIPAL	\$ 203,859.57	\$ 114,053.79	\$ 21,914.29	\$ 22,574.08	\$ 24,000.00	\$ 23,254.00	\$ 24,000.00	0%

2022 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES											SANITARY SEWER FUND BUDGET	
08 SANITARY SEWER FUND EXPENDITURES											FINAL	
FINAL												
	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	ACTUAL 2021	PROPOSED 2022	PERCENTAGE CHANGE FROM 2021				
8 SANITARY SEWER FUND												
DEBT INTEREST												
08 472 201 2005 PWSA LOAN INTEREST	\$ 4,483.86	\$ 3,862.13	\$ 3,221.63	\$ 2,561.76	\$ 2,000.00	\$ 1,882.00	\$ 2,000.00	0%				
08 472-202 2007 PENNVEST INTEREST	\$ 4,917.69	\$ 689.54						CLOSED				
TOTAL DEBT INTEREST	\$ 9,401.55	\$ 4,551.67	\$ 3,221.63	\$ 2,561.76	\$ 2,000.00	\$ 1,882.00	\$ 2,000.00	0%				
REFUNDS												
08 491-000 REFUNDS	\$ 2,902.45	\$ 2,302.32	\$ 1,233.08	\$ 3,122.13	\$ 3,000.00	\$ 1,000.00	\$ 3,000.00	0%				
TOTAL REFUNDS	\$ 2,902.45	\$ 2,302.32	\$ 1,233.08	\$ 3,122.13	\$ 3,000.00	\$ 1,000.00	\$ 3,000.00	0%				
TRANSFERS												
08 492 492-018 TRANSFER- CAPITAL IMPROVEMENT FUND	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 752,694.00	\$ 160,000.00	\$ 660,000.00	\$ 1,999,000.00	1149%				
08 492-100 TRANSFER- GENERAL FUND	\$ 484,000.00	\$ 505,000.00	\$ 529,000.00	\$ 590,000.00	\$ 610,000.00	\$ 610,000.00	\$ 554,000.00	-9%				
08 492-200 TRANSFER- MUNICIPAL BUILDING FUND	\$ 1,000,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0%				
TOTAL TRANSFERS	\$ 1,584,000.00	\$ 605,000.00	\$ 629,000.00	\$ 1,342,694.00	\$ 770,000.00	\$ 1,270,000.00	\$ 2,553,000.00	232%				
CONTINGENCY												
08 495-000 UNRESERVED BALANCE	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ -	\$ 574,000.00	\$ 2,466,200.00	\$ 1,368,000.00	138%				
TOTAL CONTINGENCY	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ -	\$ 574,000.00	\$ 2,466,200.00	\$ 1,368,000.00	138%				
TOTAL SEWER FUND EXPENDITURES	\$ 7,150,594.26	\$ 6,796,700.33	\$ 7,604,826.56	\$ 4,486,229.16	\$ 5,173,000.00	\$ 6,962,136.00	\$ 7,622,000.00	47%				
TOTAL SANITARY SEWER FUND REVENUES	\$ 6,775,278.95	\$ 7,437,270.54	\$ 7,604,826.56	\$ 6,740,677.08	\$ 5,173,000.00	\$ 8,162,244.95	\$ 7,622,000.00	-11%				
SURPLUS/(DEFICIT) =							\$					

08 407

IT-Data Processing

08	SANITARY SEWER FUND	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 407	DATA PROCESSING/IT								
08 407-454	GENERAL HARDWARE	\$ 1,330.00	\$ -	\$ 848.50	\$ 2,597.40	\$ -	\$ -	\$ -	NA
08 407-455	GENERAL SOFTWARE/LICENSES	\$ 14,576.68	\$ 2,857.50	\$ 3,028.90	\$ 6,200.00	\$ 4,000.00	\$ 2,200.00	\$ 3,000.00	-25%
	TOTAL DATA PROCESSING/IT	\$ 15,906.68	\$ 2,857.50	\$ 3,877.40	\$ 8,797.40	\$ 4,000.00	\$ 2,200.00	\$ 3,000.00	-25%
	Summary and Assumptions:								
	Data Processing/IT Capital Expenditures								
	Fiscal Year 2022 Budget Recommendations:		\$ 3,000.00		a decrease of	\$ (1,000.00)			
	Fiscal Year 2021 Adopted Budget:		\$ 4,000.00						
	Fiscal Year 2021 Projected Budget:		\$ 2,200.00						
			\$ (1,800.00)	under budget					

2022 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES											SANITARY SEWER FUND BUDGET	
08 407 DATA PROCESSING/IT EXPENDITURES											FINAL	
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE			
08 407-454	GENERAL HARDWARE	\$ 1,330.00	\$ -	\$ 848.50	\$ 2,597.40	\$ -	\$ -	\$ -			#DIV/0!	
	*Pertains to the purchasing of computer equipment for sewage collections or engineering											
	Miscellaneous				\$ -							
					\$ -							
											\$ -	
											\$ -	
											\$ -	
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE			
08 407-455	GENERAL SOFTWARE/LICENSES	\$ 14,576.68	\$ 2,857.50	\$ 3,028.90	\$ 6,200.00	\$ 4,000.00	\$ 2,200.00	\$ 3,000.00	-25%			
	ESRI/ArcView GIS Annual Fee (50%)		\$ 1,223.00									
	AccuFund Accounting Software (50%)		\$ 1,806.00									
			\$ 3,029.00									
											\$ 3,000.00	
											\$ 3,000.00	

08 429

Operations & Maintenance

08	SANITARY SEWER FUND	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 429	OPERATIONS & MAINTENANCE								
08 429-313	ENGINEERING SERVICES	\$ 170,215.37	\$ 118,574.49	\$ 145,966.40	\$ 118,785.50	\$ 170,000.00	\$ 156,000.00	\$ 170,000.00	0%
08 429-314	LEGAL SERVICES	\$ 7,210.75	\$ 20,303.86	\$ 13,406.07	\$ 74,442.61	\$ 60,000.00	\$ 75,000.00	\$ 80,000.00	33%
08 429-370	R&M SERVICES	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ -	\$ 5,000.00	0%
08 429-372	O & M PLAN	\$ 497,122.31	\$ 401,261.15	\$ 399,866.53	\$ 462,272.73	\$ 597,000.00	\$ 505,000.00	\$ 600,000.00	1%
08 429-450	CONTRACTED SERVICES	\$ 35,510.00	\$ 24,672.20	\$ 21,123.74	\$ 29,670.00	\$ 235,000.00	\$ 50,000.00	\$ 100,000.00	-57%
08 429-610	CAPITAL CONSTRUCTION	\$ 134,694.20	\$ 27,700.00	\$ 112.00	\$ -	\$ 100,000.00	\$ 50,000.00	\$ 100,000.00	0%
08 429-700	CAPITAL PURCHASE	\$ 295.37	\$ -	\$ -	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00	0%
	TOTAL OPERATIONS & MAINTENANCE	\$ 845,048.00	\$ 592,511.70	\$ 580,474.74	\$ 685,170.84	\$ 1,168,000.00	\$ 836,000.00	\$ 1,056,000.00	-10%
	Summary and Assumptions:								
	Operations & Maintenance								
	Fiscal Year 2022 Budget Recommendations:		\$ 1,056,000.00		a decrease of	\$ (112,000.00)			
	Fiscal Year 2021 Adopted Budget:		\$ 1,168,000.00						
	Fiscal Year 2021 Projected Budget:		\$ 836,000.00						
			\$ (332,000.00)		under budget				

ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 429-372	\$ 497,122.31	\$ 401,261.15	\$ 399,866.53	\$ 462,272.73	\$ 597,000.00	\$ 505,000.00	\$ 600,000.00	1%
<i>If the sanitary sewer system is not sold, the Borough will be responsible for the following items. If a sales agreement is signed, the Borough will only be responsible for completing minimum maintenance activities. Based upon the annual included in the contracts, will assume a 3% increase:</i>								
10 CCTV	\$ 40,000.00							
20 Point Repair/Manhole Repair	\$ 126,500.00							
30 Lining	\$ 290,500.00							
40 Special Repairs	\$ 29,500.00							
50 Emergency Repairs	\$ 24,000.00							
60 Preventative Maintenance	\$ 47,000.00							
Miscellaneous	\$ 39,000.00							
Total O&M Budget =	\$ 596,500.00							
							SAY \$ 600,000.00	
ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 429-450	\$ 35,510.00	\$ 24,672.20	\$ 21,123.74	\$ 29,670.00	\$ 235,000.00	\$ 50,000.00	\$ 100,000.00	-57%
<i>In accordance with its ordinance, the Borough is responsible for the wye connections between private laterals and public main lines, as well as the repair of any damaged laterals that travel under Borough streets. Where feasible, the Borough permits plumbers to make the necessary repairs in conjunction with repairs to the laterals. However, if the customer's section of a lateral is not damaged, such repairs become the obligation of the Borough's contractor. As the Borough is aware of these defects, it is necessary to abate them regardless of the status of the sale of the sewer system.</i>								
<i>Borough share of sewer lateral repairs</i>								
		\$ 90,000.00						
<i>15 defects under Borough streets x \$6,000 per repair =</i>								
		\$ 10,000.00						
<i>Backflow prevention program</i>								
		\$ 100,000.00						
							SAY \$ 100,000.00	

08 429

Wastewater Collection & Treatment

2022 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES
08 429 WASTEWATER COLLECTION AND TREATMENT EXPENDITURES
SANITARY SEWER FUND BUDGET
FINAL

	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08								
SANITARY SEWER FUND								
WASTEWATER COLLECTION & TREATMENT								
08 429-210 OFFICE SUPPLIES	\$ 73.19	\$ 98.38	\$ 56.09	\$ -	\$ -	\$ -	\$ -	NA
08 429-311 AUDITING SERVICES	\$ 5,000.00	\$ 5,000.00	\$ 5,025.68	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	0%
08 429-316 SERVICE/ADMIN FEES	\$ 5,129.07	\$ 2,368.98	\$ 4,269.02	\$ 3,478.47	\$ 9,000.00	\$ 3,800.00	\$ 9,000.00	0%
08 429-325 POSTAGE	\$ 1,351.05	\$ 20,680.26	\$ 18,856.47	\$ 19,875.63	\$ 22,000.00	\$ 21,800.00	\$ 22,000.00	0%
08 429-341 ADVERTISING	\$ 85.50	\$ 750.35	\$ 2,830.48	\$ -	\$ 3,000.00	\$ 1,000.00	\$ 3,000.00	0%
08 429-453 CONTRACTED SVCS-ALCOSAN	\$ 1,621,611.88	\$ 1,825,535.87	\$ 1,793,761.75	\$ 2,366,158.96	\$ 2,561,000.00	\$ 2,300,000.00	\$ 2,561,000.00	0%
08 429-454 CONTRACTED SVCS-BILLING	\$ 108,444.59	\$ 48,997.70	\$ 41,804.60	\$ 26,795.89	\$ 28,000.00	\$ 30,000.00	\$ 13,000.00	-54%
TOTAL WASTEWATER COLLECTION & TREATMENT	\$ 1,741,695.28	\$ 1,903,431.54	\$ 1,866,604.09	\$ 2,421,308.95	\$ 2,628,000.00	\$ 2,361,600.00	\$ 2,613,000.00	-1%
Summary and Assumptions:								
Wastewater Collection & Treatment								
Fiscal Year 2022 Budget Recommendations:		\$ 2,613,000.00		a decrease of	\$ (15,000.00)			
Fiscal Year 2021 Adopted Budget:		\$ 2,628,000.00						
Fiscal Year 2021 Projected Budget:		\$ 2,361,600.00						
		\$ (266,400.00)	under budget					

08 471

Debt Principal

08 472

Debt Interest

08 491

Refunds

08 492

Transfers

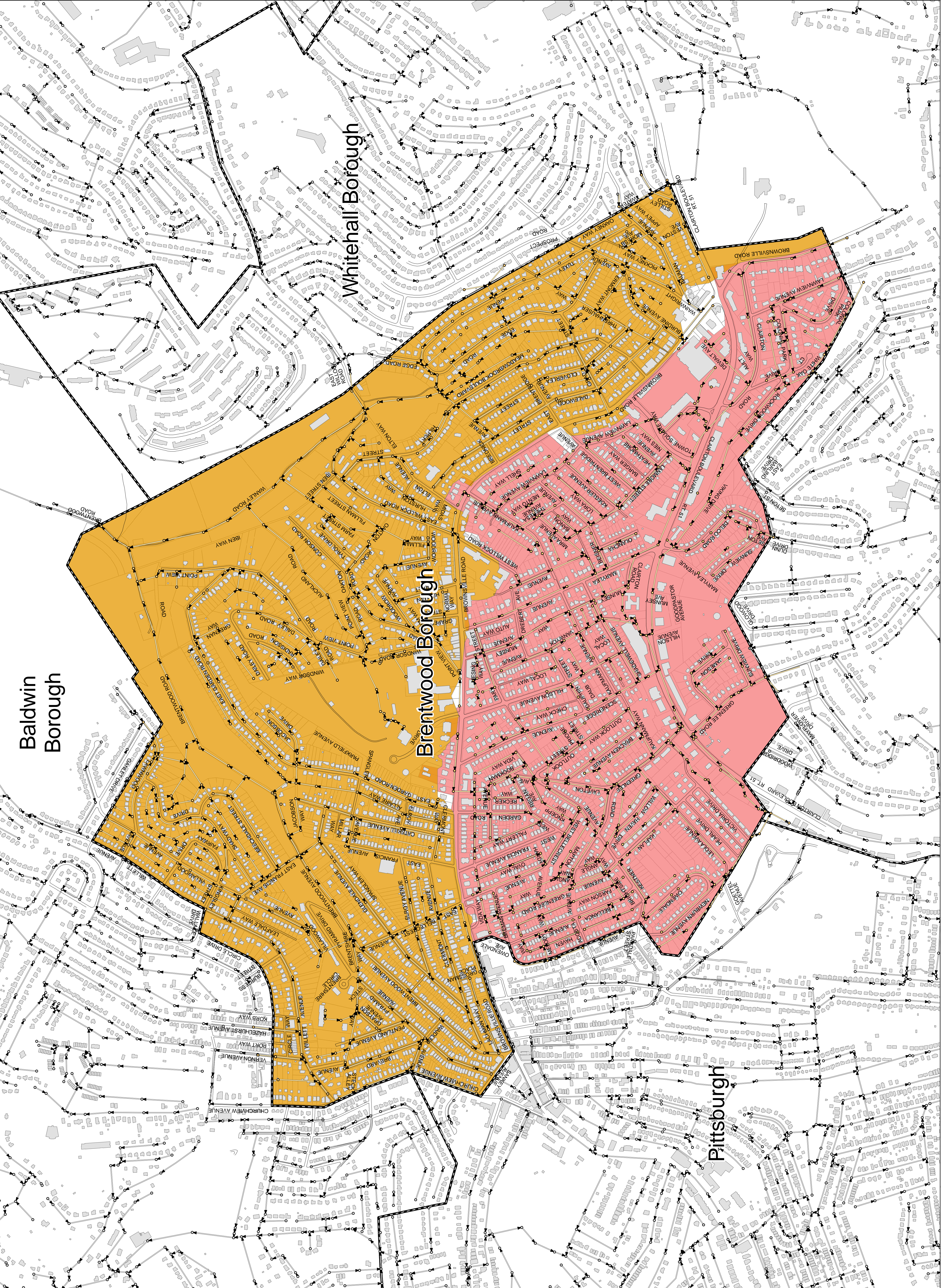
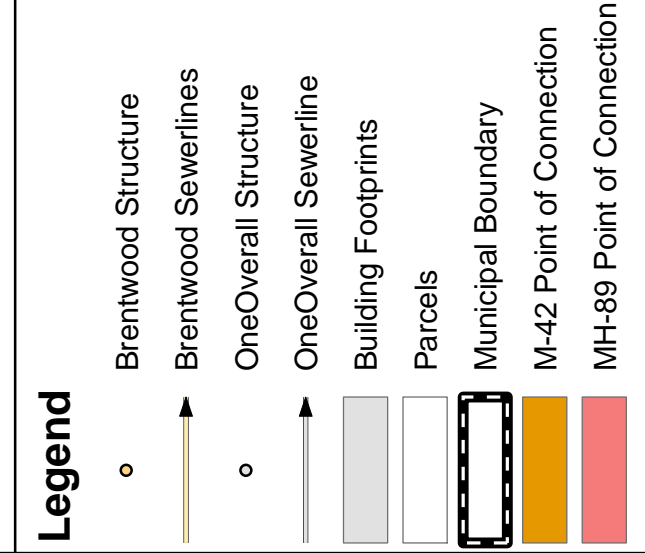
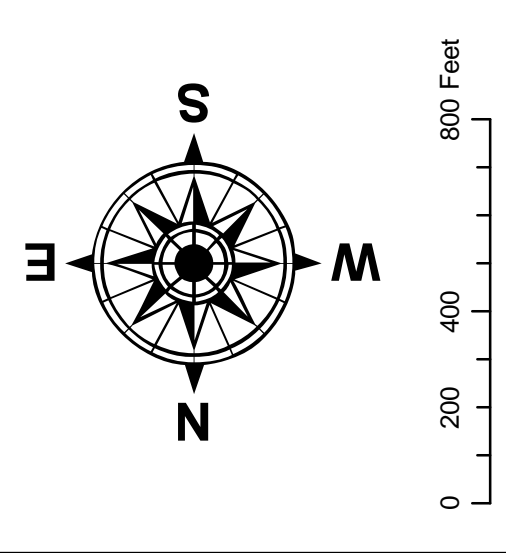
		ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08	SANITARY SEWER FUND								
08 492	TRANSFERS								
08 492-018	TRANSFER- CAPITAL IMPROVEMENT FUND	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 752,694.00	\$ 160,000.00	\$ 660,000.00	\$ 1,999,000.00	1149%
08 492-100	TRANSFER- GENERAL FUND	\$ 484,000.00	\$ 505,000.00	\$ 529,000.00	\$ 590,000.00	\$ 610,000.00	\$ 610,000.00	\$ 554,000.00	-9%
08-492-200	TRANSFER- MUNICIPAL BUILDING FUND	\$ 1,000,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	0%
	TOTAL TRANSFERS	\$ 1,584,000.00	\$ 605,000.00	\$ 629,000.00	\$ 1,342,694.00	\$ 770,000.00	\$ 1,270,000.00	\$ 2,553,000.00	232%
08	ITEM								
08 492-018	TRANSFER- CAPITAL IMPROVEMENT FUND	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 752,694.00	\$ 160,000.00	\$ 660,000.00	\$ 1,999,000.00	1149%
	In 2020, Council authorized an additional transfer to fund sanitary sewer-related components of the pool renovation project.								
	Associated with the Borough's Debt Service.		\$ 969,000.00						
	Associated with the Demolition of former Borough Building		\$ 830,000.00		(Only if Grant Funding is NOT obtained)				
	Associated with Stadium ADA Restrooms Project		\$ 100,000.00						
	Associated with Street Rehab Sewer Work		\$ 100,000.00						
			\$ 1,999,000.00						
								SAY	\$ 1,999,000.00

2022 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES									
08 492 TRANSFERS									
SANTARY SEWER FUND BUDGET									
FINAL									
08	ITEM	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 492-100	TRANSFER- GL FUND	\$ 484,000.00	\$ 505,000.00	\$ 529,000.00	\$ 590,000.00	\$ 610,000.00	\$ 610,000.00	\$ 554,000.00	-9%
	G. Zboyovsky								
	30% of G. Zboyovsky Salary								
	G. Zboyovsky's Salary =	\$ 133,900.00							
	30% =				\$ 40,170.00				
	FICA & Benefits =	\$ 44,079.27			\$ 11,019.82				
	25% =				\$ 51,189.82				
	Total of Salary & Benefits associated with Sanitary Sewer tasks =								
	S. Toth								
	35% of S. Toth Salary								
	S. Toth's Salary =	\$ 67,590.00							
	35% =				\$ 23,656.50				
	FICA & Benefits =	\$ 38,615.30			\$ 13,515.36				
	35% =				\$ 37,171.86				
	Total of Salary & Benefits associated with Sanitary Sewer tasks =								
	A. Medway								
	50% of A. Medway's Salary								
	Salary (including projected overtime)	\$ 40,084.10							
	50% =				\$ 20,042.05				
	FICA & Benefits =	\$ 18,496.08			\$ 9,248.04				
	50% of FICA, UC, and Life Insurance								
	Total of Salary & Benefits associated with Sanitary Sewer tasks =				\$ 29,290.09				
	D. Assenti								
	50% of D. Assenti Salary								
	Salary (including projected overtime)	\$ 40,084.10							
	50% =				\$ 20,042.05				
	D. Assenti FICA & Benefits =	\$ 18,385.48			\$ 9,192.74				
	50% =				\$ 29,234.79				
	Total of Salary & Benefits associated with Sanitary Sewer tasks =								

08 495

Contingency

2022 BRENTWOOD BUDGET SANITARY SEWER FUND EXPENDITURES						SANITARY SEWER FUND BUDGET			
08 495 CONTINGENCY						FINAL			
08	SANITARY SEWER FUND	ACTUAL 2017	ACTUAL 2018	ACTUAL 2019	ACTUAL 2020	BUDGETED 2021	FORECASTED 2021	BUDGETED 2022	PERCENT CHANGE
08 495	CONTINGENCY								
08 495-000	UNRESERVED BALANCE	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ -	\$ 574,000.00	\$ 2,466,200.00	\$ 1,368,000.00	138%
	TOTAL CONTINGENCY	\$ 2,747,780.73	\$ 3,571,991.81	\$ 4,498,501.33	\$ -	\$ 574,000.00	\$ 2,466,200.00	\$ 1,368,000.00	138%
<i>COMMENTS:</i>									
<i>These expenses are associated with providing contingencies for known and unknown expenses and future capital improvements.</i>									
08 498-000	UNRESERVED BALANCE								
	1/1/2022 Estimated Beginning Balance =		\$ 3,000,000.00						
	Contingency =		\$ 1,368,000.00						
	Deficit/Surplus =		\$ 1,632,000.00	Deficit required from Surplus to balance					
								SAY	\$ 1,368,000.00





Willow Haven Drive



Willow Haven Drive



Waidler & Brentwood



Waidler & Brentwood



Radisson Road



Radisson Road



Heathmore & Lawnview



Heathmore & Lawnview



Edge Road



Edge Road



Drebert & Munsey



Drebert & Munsey

Brentwood, PA Data & Demographics (As of July 1, 2022)

POPULATION

Total Population	9,971 (100%)
Population in Households	9,922 (99.5%)
Population in Families	7,190 (72.1%)
Population in Group Quarters ¹	49 (0.5%)
Population Density	6,883
Diversity Index ²	40

INCOME

Median Household Income	\$64,570
Average Household Income	\$85,065
% of Income for Mortgage ⁴	11%
Per Capita Income	\$37,989
Wealth Index ⁵	66

HOUSING

Total HU (Housing Units)	4,826 (100%)
Owner Occupied HU	2,719 (56.3%)
Renter Occupied HU	1,733 (35.9%)
Vacant Housing Units	374 (7.7%)
Median Home Value	\$131,897
Average Home Value	\$173,961
Housing Affordability Index ³	163

HOUSEHOLDS

Total Households	4,452
Average Household Size	2.23
Family Households	2,383
Average Family Size	3

Rates

Ordinance No. 2019-1285: Rates and charges effective January 1, 2020 and continuing on a calendar year basis:

<p>Monthly Service Fee</p>	<p>Borough to assess \$4.57 per household Borough to collect \$5.95 per house fee on behalf of ALCOSAN</p> <p>Total Service Fee: \$10.52 per thousand gallons of water used.</p>
<p>Consumption Fee</p>	<p>Borough to assess \$8.91 per thousand gallons of water used Borough to collect \$8.50 per thousand gallons fee on behalf of ALCOSAN</p> <p>Total Consumption Fee: \$17.41 per thousand gallons of water used.</p>

Borough of Brentwood
Active Customer Count Summary

Residential	3,753
Commercial	<u>227</u>
	<u>3,980</u>

Golden State Water CO (Filer) CIK: 000092116
AMERICAN STATES WATER CO (Filer) CIK: 0001056903

[Print Document](#) [View Excel Document](#)

10-K

Cover

Document and Entity Information

Audit Information

Financial Statements

CONSOLIDATED BALANCE SHEETS

CONSOLIDATED STATEMENTS OF CAPITALIZATION

CONSOLIDATED STATEMENTS OF INCOME

CONSOLIDATED STATEMENTS OF CHANGES IN COMMON SHAREHOLDERS' EQUITY

CONSOLIDATED STATEMENTS OF CASH FLOWS

BALANCE SHEETS

Notes to Financial Statements

Summary of Significant Accounting Policies

Revenues

Regulatory Matters

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Derivative Instruments

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Stock-Based Compensation Plans

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Contingencies and Gain on Sale of Assets

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Allowance for Doubtful Accounts

Statement of Cash Flows, Supplemental Disclosures

Completion of Electric Utility Reorganization Plan

12 Months Ended
Dec. 31, 2021

Summary of Significant Accounting Policies

Accounting Policies [Abstract]

Summary of Significant Accounting Policies

Nature of Operations: American States Water Company ("AWR") is the parent company of Golden State Water Company ("GSWC"), Bear Valley Electric Service Inc. ("BVESI"), and American States Utility Services, Inc. ("ASUS") (and its wholly owned subsidiaries, Fort Bliss Water Services Company ("FBWS"), Terrapin Utility Services, Inc. ("TUS"), Old Dominion Utility Services, Inc. ("ODUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS"), and Fort Riley Utility Services, Inc. ("FRUS")). AWR and its subsidiaries may be collectively referred to as "Registrant" or "the Company." The subsidiaries of ASUS are collectively referred to as the "Military Utility Privatization Subsidiaries." On July 1, 2020, GSWC completed the transfer of the electric utility assets and liabilities from its electric division to BVESI, a separate legal entity and wholly owned subsidiary of AWR (Note 20). This reorganization did not result in any substantive changes to AWR's operations and business segments. AWR, through its wholly owned subsidiaries, serves over one million people in nine states.

GSWC and BVESI are both California public utilities, with GSWC engaged in the purchase, production, distribution and sale of water throughout California serving approximately 262,800 customers, while BVESI distributes electricity in several San Bernardino County mountain communities in California serving approximately 24,700 customers. The California Public Utilities Commission ("CPUC") regulates GSWC's and BVESI's businesses in matters including properties, rates, services, facilities, and transactions between GSWC, BVESI, and their affiliates.

ASUS, through its Military Utility Privatization Subsidiaries, operates, maintains and performs construction activities (including renewal and replacement capital work) on water and/or wastewater systems at various U.S. military bases pursuant to 50-year firm fixed-price contracts. These contracts are subject to annual economic price adjustments and modifications for changes in circumstances, changes in laws and regulations and additions to the contract value for new construction of facilities at the military bases.

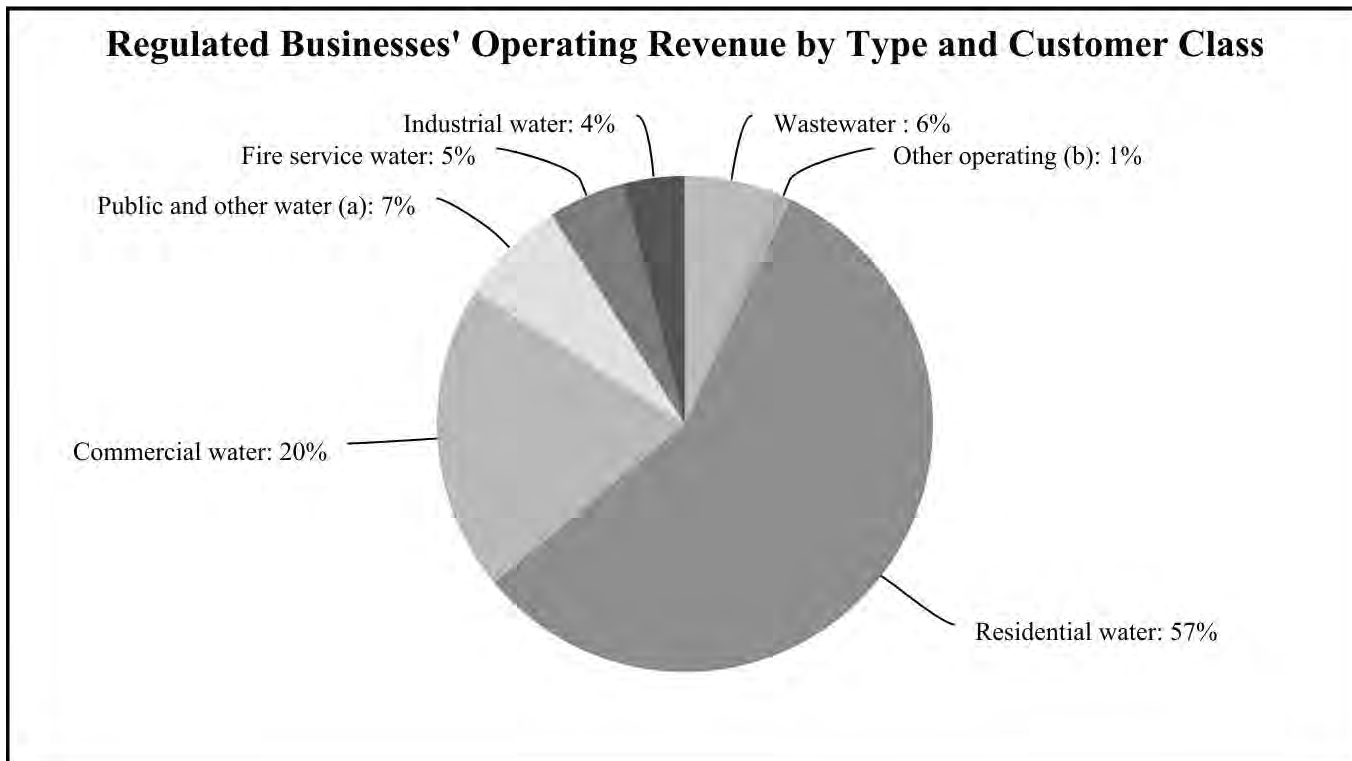
There is no direct regulatory oversight by the CPUC over AWR or the operations, rates or services provided by ASUS or the Military Utility Privatization Subsidiaries.

Basis of Presentation: The consolidated financial statements and notes thereto are presented in a combined report filed by two separate Registrants: AWR and GSWC. References in this report to "Registrant" are to AWR and GSWC, collectively, unless otherwise specified.

AWR owns all of the outstanding Common Shares of GSWC, BVESI and ASUS. ASUS owns all of the outstanding common shares of the Military Utility Privatization Subsidiaries. The consolidated financial statements of AWR include the accounts of AWR and its subsidiaries. These financial statements are prepared in conformity with accounting principles generally accepted in the United States of America. Intercompany transactions and balances have been eliminated in the AWR consolidated financial statements.

Related-Party Transactions: GSWC, BVESI and ASUS provide and/or receive various support services to and from their parent, AWR, and among themselves. GSWC also allocates certain corporate office administrative and general costs to its affiliates BVESI and ASUS using

The following chart depicts the allocation of the Company’s Regulated Businesses’ operating revenue of \$3,384 million by type, including a breakout of the total water services revenues by class of customer, for the year ended December 31, 2021:



- (a) Includes water revenues from public authorities and other utilities and community water systems under bulk contracts.
- (b) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

Presented in the table below is the number of water and wastewater customers the Company served by class as of December 31, 2021, 2020 and 2019, which represents approximately 14 million people served as of December 31, 2021:

(In thousands)	2021		2020		2019	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Residential	2,972	245	2,948	236	2,914	215
Commercial	225	15	225	15	222	13
Fire service	52	—	50	—	49	—
Industrial	4	—	4	—	4	—
Public and other (a)	16	1	17	1	16	1
Total	3,269	261	3,244	252	3,205	229

- (a) Includes public authorities and other utilities and community water and wastewater systems under bulk contracts. Bulk contracts, which are accounted for as a single customer in the table above, generally result in service to multiple customers.

Customer growth in the Company’s Regulated Businesses is primarily from (i) adding new customers to its customer base through acquisitions of water and/or wastewater utility systems, (ii) population growth in its authorized service areas, and (iii) sale of water to other water utilities and community water systems.

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Interconnections

Artesian Water has two water service interconnection agreements with a neighboring utility, Chester Water Authority. One agreement, that expired on December 31, 2021, had a “take or pay” clause requiring us to purchase 3 million gallons per day. The other agreement is effective from January 1, 2022 through December 31, 2026, includes automatic five year renewal terms, unless terminated by either party, and has a “take or pay” clause requiring us to purchase water on a step down schedule through July 5, 2022, thereafter requiring us to purchase a minimum of 0.5 million gallons per day. Rates charged under this agreement are subject to change.

Artesian Water Maryland has one interconnection agreement with the Town of North East that has a “take or pay” clause requiring us to purchase a minimum of 35,000 gallons per day. The agreement extends through June 2024.

The minimum annual purchase commitments for all interconnection agreements for 2022 through 2026, calculated at the noticed rates, are as follows:

In thousands

2022	\$ 1,518
2023	759
2024	730
2025	702
2026	701
	<u>\$ 4,410</u>

Expenses for purchased water were \$4.3 million, \$4.3 million and \$4.2 million for 2021, 2020 and 2019, respectively.

Other Commitments

In March 2017, Artesian Water entered into a 3-year agreement with Worldwide Industries Corporation to clean and paint tanks in 2017, 2018 and 2019. Pursuant to the 3-year agreement, the expenditure committed in total for the years 2017 through 2019 was \$1.3 million. In 2020, Artesian Water entered into a short term agreement with Worldwide Industries Corporation to clean and paint a tank in 2020. Pursuant to the agreement, the expenditure in 2020 was \$0.1 million. In April 2021, Artesian Water entered into a 3-year agreement with Worldwide Industries Corporation effective July 1, 2021 to paint elevated water storage tanks. Pursuant to the agreement, the total expenditure for the three years is \$1.2 million. Tank painting expense for 2021, 2020 and 2019 was \$222,000, \$155,000, and \$447,000, respectively.

Budgeted mandatory utility plant expenditures, due to planned governmental highway projects, which require the relocation of Artesian Water's water service mains, expected to be incurred in 2022 through 2024 are as follows:

In thousands

2022	\$ 4,820
2023	8,430
2024	2,420
	<u>\$ 15,670</u>

The exact timing and extent of these relocation projects is controlled primarily by the Delaware Department of Transportation.

NOTE 12

GEOGRAPHIC CONCENTRATION OF CUSTOMERS

Artesian Water, Artesian Water Maryland and Artesian Water Pennsylvania provide water utility service to customers within their established service territory in all three counties of Delaware and in portions of Maryland and Pennsylvania, pursuant to rates filed with and approved by the DEPSC, the MDPSC and the PAPUC. As of December 31, 2021, Artesian Water was serving approximately 91,700 customers, Artesian Water Maryland was serving approximately 2,500 customers and Artesian Water Pennsylvania was serving approximately 40 customers.

Artesian Wastewater provides wastewater utility service to customers within its established service territory in Sussex County, Delaware pursuant to rates filed with and approved by the DEPSC. As of December 31, 2021, Artesian Wastewater was serving

Appendix A-5.2 (Gannett)

approximately 3,200 customers, including one large industrial customer. Effective January 14, 2022, following the acquisition of T&E, the number of wastewater customers served more than doubled. All wastewater customers are located in Sussex County, Delaware.



For immediate release

Artesian Resources Corporation declares its 1st Quarter Common Stock Dividend for 2022

Newark, DE, January 25, 2022 – Artesian Resources Corporation (NASDAQ: ARTNA) announced today that its Board of Directors has declared a regular quarterly dividend on the company's Class A and Class B Common Stock. The quarterly dividend of \$0.2675 is payable February 23, 2022 to shareholders of record at the close of business on February 9, 2022, providing a \$1.07 annualized dividend rate. This is Artesian's 117th consecutive quarterly dividend paid to shareholders.

About Artesian Resources

Artesian Resources Corporation operates as a holding company of wholly-owned subsidiaries offering water and wastewater services, and related services, on the Delmarva Peninsula. Artesian Water Company, the principal subsidiary, is the oldest and largest regulated water utility on the Delmarva Peninsula and has been providing water service since 1905. Artesian supplies 8.3 billion gallons of water per year through 1,368 miles of water main to nearly a third of Delaware residents.

Contact:

Nicholle R. Taylor

Investor Relations

(302) 453-6900

ntaylor@artesianwater.com

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(rounded to the nearest hundred)

	2021	2020
Visalia	47,400	46,700
Selma	6,600	6,500
Kern River Valley	4,000	4,000
	<u>176,600</u>	<u>175,500</u>
LOS ANGELES AREA		
East Los Angeles	27,000	26,900
Hermosa Redondo (serving Hermosa Beach, Redondo Beach and a portion of Torrance)	27,200	27,100
Dominguez (Carson and portions of Compton, Harbor City, Long Beach, Los Angeles and Torrance)	34,400	34,300
Los Angeles County Region (including Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, Rolling Hills, Fremont Valley, Lake Hughes, Lancaster and Leona Valley)	25,800	25,700
Westlake (a portion of Thousand Oaks)	7,100	7,100
Hawthorne and Commerce (leased municipal systems)	7,600	7,700
	<u>129,100</u>	<u>128,800</u>
CALIFORNIA TOTAL	<u>494,500</u>	<u>492,600</u>
HAWAII	6,200	5,300
NEW MEXICO	8,600	8,500
WASHINGTON	36,400	36,600
TEXAS	1,900	—
COMPANY TOTAL	<u><u>547,600</u></u>	<u><u>543,000</u></u>

Rates and Regulation

The Commissions have plenary powers setting both rates and operating standards. As such, the Commissions' decisions significantly impact the Company's revenues, earnings, and cash flows. The amounts discussed herein are generally annual amounts, unless otherwise stated, and the financial impact to recorded revenue is expected to occur over a 12-month period from the effective date of the decision. In California, water utilities are required to make several different types of filings. Certain filings, such as General Rate Case (GRC) filings, escalation rate increase filings, and offset filings, may result in rate changes that generally remain in place until the next GRC. As explained below, surcharges and surcredits to recover balancing and memorandum accounts as well as GRC interim rate relief are temporary rate changes, having specific time frames for recovery.

The CPUC follows a rate case plan which requires Cal Water to file a GRC for each of its regulated operating districts (except Grand Oaks) every three years. In a GRC proceeding the CPUC not only considers the utility's rate setting requests, but may also consider other issues that affect the utility's rates and operations. The CPUC is generally required to issue its GRC decision prior to the first day of the test year or authorize interim rates. In accordance with the rate case plan, Cal Water filed its most recent GRC application in July of 2021 requesting rate changes effective January 1, 2023.

Between GRC filings, Cal Water may file escalation rate increases, which allow Cal Water to recover cost increases, primarily from inflation and incremental investments, during the second and third years of the rate case cycle. However, escalation rate increases are district specific and subject to an earnings test. The CPUC may reduce a district's escalation rate increase if, in the most recent 13-month period, the earnings test reflects earnings in excess of what was authorized for that district.

In addition, California water utilities are entitled to make offset requests via advice letter. Offsets may be requested to adjust revenues for construction projects authorized in GRCs when those capital projects go into service (these filings are referred to as "rate base offsets"), or for rate changes charged to Cal Water for purchased water, purchased power, and pump taxes (which are referred to as "expense offsets"). Rate changes approved in offset requests remain in effect until the next GRC is approved.

In pursuit of the State of California's water conservation goals, the CPUC decoupled Cal Water's revenue requirement from customer consumption levels in 2008 by authorizing a Water Revenue Adjustment Mechanism (WRAM) and Modified Cost Balancing Account (MCBA) for each district. The WRAM and MCBA ensure that Cal Water recovers revenues authorized by the CPUC regardless of customer consumption. This has removed the historical disincentive against promoting

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- restrictive covenants in or changes to the credit ratings on our current or future debt that could increase our financing costs or affect our ability to borrow, make payments on debt or pay dividends;
- risks associated with expanding our business and operations geographically; and
- the risks set forth in "Risk Factors" included elsewhere in this annual report.

In light of these risks, uncertainties and assumptions, investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date of this annual report or as of the date of any document incorporated by reference in this annual report, as applicable. When considering forward-looking statements, investors should keep in mind the cautionary statements in this annual report and the documents incorporated by reference. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise.

Overview

California Water Service Group is a holding company with seven operating subsidiaries: California Water Service Company (Cal Water), New Mexico Water Service Company (New Mexico Water), Washington Water Service Company (Washington Water), Hawaii Water Service Company, Inc. (Hawaii Water), TWSC, Inc. (Texas Water), and CWS Utility Services and HWS Utility Services LLC (CWS Utility Services and HWS Utility Services LLC being referred to collectively in this annual report as Utility Services). Cal Water, New Mexico Water, Washington Water, and Hawaii Water are regulated public utilities. Texas Water holds regulated and contracted wastewater utilities.

The regulated utility entities also provide some non-regulated services. Utility Services holds non-utility property and provides non-regulated services to private companies and municipalities outside of California (see Non-Regulated Activities below for more details). Cal Water was the original operating company and began operations in 1926.

Our business is conducted through our operating subsidiaries and we provide utility services to approximately two million people. The bulk of the business consists of the production, purchase, storage, treatment, testing, distribution and sale of water for domestic, industrial, public and irrigation uses, and the provision of domestic and municipal fire protection services. In some areas, we provide wastewater collection and treatment services, including treatment which allows water recycling. We also provide non-regulated water-related services under agreements with municipalities and other private companies. The non-regulated services include full water system operation, billing and meter reading services. Non-regulated operations also include the lease of communication antenna sites, lab services and promotion of other non-regulated services.

During the year ended December 31, 2021, there were no significant changes in the kind of products produced or services rendered by our operating subsidiaries, or in the markets or methods of distribution.

Our mailing address and contact information is:

California Water Service Group
1720 North First Street
San Jose, California 95112-4598
Telephone number: 408-367-8200
www.calwatergroup.com

Annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports are available free of charge through our website at www.calwatergroup.com. The reports are available on our website as soon as reasonably practicable after such reports are filed with the SEC.

The content on any website referred to in this annual report is not incorporated by reference in this annual report unless expressly noted.

Regulated Business

California water operations are conducted by Cal Water, which provides service to approximately 494,500 customer connections in approximately 100 California communities through 21 separate districts, which are subject to regulation by the California Public Utilities Commission (CPUC). California water operations accounted for approximately 90.3% of our total customer connections and 91.9% of our total consolidated operating revenue.

We operate the City of Hawthorne and the City of Commerce water systems under lease agreements. In accordance with the lease agreements, we receive all revenues from operating the systems and are responsible for paying the operating costs. The City of Hawthorne and the City of Commerce lease revenues are governed through their respective city councils and are considered non-regulated because they are outside of the CPUC's jurisdiction. We report revenue and expenses for the City of

Table of Contents**Customers**

Our water utility customer base is diversified among residential water, commercial water, fire protection, industrial water, other water, wastewater customers, and other utility customers (consisting of contracted services that are associated with the utility operations). Residential water and wastewater customers make up the largest component of our water utility customer base, with these customers representing approximately 69%, 71%, and 69%, of our water and wastewater revenues for 2021, 2020, and 2019, respectively. Substantially all of our water utility customers are metered, which allows us to measure and bill for our customers' water consumption. Water consumption per customer is affected by local weather conditions during the year, especially during late spring, summer, and early fall. In general, during these seasons, an extended period of dry weather increases consumption, while above-average rainfall decreases consumption. Also, an increase in the average temperature generally causes an increase in water consumption. On occasion, abnormally dry weather in our service areas can result in governmental authorities declaring drought warnings and imposing water use restrictions in the affected areas, which could reduce water consumption. See "Business – *Water Utility Supplies, and Facilities and Wastewater Utility Facilities*" for a discussion of water use restrictions that may impact water consumption during abnormally dry weather. The geographic diversity of our water utility customer base reduces the effect of our exposure to extreme or unusual weather conditions in any one area of our service territories. Water usage is also affected by changing consumption patterns by our customers, resulting from such causes as increased water conservation and the installation of water saving devices and appliances that can result in decreased water usage. It is estimated that, in the event we experience a 0.50% decrease in residential water consumption, it would result in a decrease in annual residential water revenue of approximately \$2,800,000, which would likely be partially offset by a reduction in incremental water production expenses such as chemicals and power.

Our natural gas utility customer base is diversified among residential gas, commercial gas, industrial gas, gas transportation, and other utility. Substantially all of our natural gas utility customers are metered, which allows us to measure and bill for our customers' natural gas usage. Natural gas usage per customer is affected by local weather conditions during the year, especially during the fall, winter, and early spring. These patterns reflect the higher demand for natural gas for heating purposes during the colder months.

The Company's growth in revenues over the past five years is primarily a result of the 2020 Peoples Gas Acquisition, increases in water and wastewater rates, and customer growth. See *Economic Regulation* for a discussion of water, wastewater, and natural gas rates. The increase in our utility customer base has been due to customers added through acquisitions, partnerships with developers, and organic growth (excluding dispositions) as shown below:

Year	Utility Customer Growth Rate
2021	1.2%
2020	42.9%
2019	2.1%
2018	2.3%
2017	1.1%

In 2021, 2020, and 2019, our customer count increased by 21,246, 772,099, and 21,108 customers, respectively, primarily due to the water and wastewater utility systems that we acquired, organic growth, and in 2020, due to the Peoples Gas Acquisition that resulted to the addition of approximately 750,000 natural gas utility customers. Overall, for the five year period of 2017 through 2021, our utility customer base, adjusted to exclude customers associated with utility system dispositions, increased at an annual compound rate of 13.4%. During the five year period ended December 31, 2021, our utility customer base including customers associated with utility system acquisitions and dispositions increased from 972,265 at January 1, 2017 to 1,820,049 at December 31, 2021.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Annual Report on Form 10-K, or this Annual Report are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 that are made based upon, among other things, our current assumptions, expectations, plans, and beliefs concerning future events and their potential effect on us. These forward-looking statements involve risks, uncertainties and other factors, many of which are outside our control that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. In some cases you can identify forward-looking statements where statements are preceded by, followed by or include the words “believes,” “expects,” “estimates,” “anticipates,” “plans,” “future,” “potential,” “probably,” “predictions,” “intends,” “will,” “continue,” “in the event” or the negative of such terms or similar expressions. Please refer to the Summary in Item 1A – Risk Factors in this Annual Report for a description of the types of Forward-looking statements in this Annual Report. These factors are not necessarily all of the important factors that could cause actual results to differ materially from those expressed in any of our forward-looking statements. Other unknown or unpredictable factors could also have material adverse effects on future results.

Given these risks and uncertainties, you should not place undue reliance on any forward-looking statements. You should read this Annual Report completely and with the understanding that our actual future results, performance and achievements may be materially different from what we expect. These forward-looking statements represent assumptions, expectations, plans, and beliefs only as of the date of this Annual Report. Except for our ongoing obligations to disclose certain information under the federal securities laws, we are not obligated, and assume no obligation, to update these forward-looking statements, even though our situation may change in the future. For further information or other factors which could affect our financial results and such forward-looking statements, see Item 1A – Risk Factors. We qualify all of our forward-looking statements by these cautionary statements.

PART I

Item 1. Business

The Company

Essential Utilities, Inc. (referred to as Essential Utilities, Essential, the Company, we, us, or our), a Pennsylvania corporation, is the holding company for regulated utilities providing water, wastewater, or natural gas services to an estimated five million people in Pennsylvania, Ohio, Texas, Illinois, North Carolina, New Jersey, Indiana, Virginia, West Virginia, and Kentucky under the Aqua and Peoples brands. One of our largest operating subsidiaries, Aqua Pennsylvania, Inc., (Aqua Pennsylvania) accounted for approximately 55% of operating revenues and approximately 68% of income for our Regulated Water segment in 2021. As of December 31, 2021, Aqua Pennsylvania provided water or wastewater services to approximately one-half of the total number of water and wastewater customers we serve. Aqua Pennsylvania’s service territory is located in the suburban areas in counties north and west of the City of Philadelphia and in 27 other counties in Pennsylvania. Our other regulated water or wastewater utility subsidiaries provide similar services in seven additional states. Additionally, pursuant to the Company’s growth strategy, commencing on March 16, 2020 with the completion of the Peoples Gas Acquisition, the Company began to provide natural gas distribution services to customers in western Pennsylvania, Kentucky, and West Virginia. Approximately 93% of the total number of natural gas utility customers we serve are in western Pennsylvania. Lastly, the Company’s market-based activities are conducted through Aqua Infrastructure, LLC and Aqua Resources Inc., and certain other non-regulated subsidiaries of Peoples. Prior to our October 30, 2020 sale of our investment in a joint venture, Aqua Infrastructure provided non-utility raw water supply services for firms in the natural gas drilling industry. Following the October 30, 2020 closing, Aqua Infrastructure does not provide any services to the natural gas drilling industry. Aqua Resources offers, through a third-party, water and sewer line protection solutions and repair services to households. Other non-regulated subsidiaries of Peoples provide utility service line protection services to households and operate gas marketing and production businesses.

[Index](#)**PART I****Item 1. Business.****Overview**

Middlesex Water Company (Middlesex) was incorporated as a water utility company in 1897 and owns and operates regulated water utility and wastewater systems primarily in New Jersey and Delaware. Middlesex also operates water and wastewater systems under contract on behalf of municipal and private clients primarily in New Jersey and Delaware.

The terms “the Company,” “we,” “our,” and “us” refer to Middlesex Water Company and its subsidiaries, including Tidewater Utilities, Inc. (Tidewater) and Tidewater’s wholly-owned subsidiaries, Southern Shores Water Company, LLC (Southern Shores) and White Marsh Environmental Systems, Inc. (White Marsh). The Company’s other subsidiaries are Pinelands Water Company (Pinelands Water) and Pinelands Wastewater Company (Pinelands Wastewater) (collectively, Pinelands), Utility Service Affiliates, Inc. (USA) and Utility Service Affiliates (Perth Amboy) Inc., (USA-PA).

The Company’s principal executive offices are located at 485C Route 1 South, Suite 400, Iselin, New Jersey 08830. Our telephone number is (732) 634-1500. Our website address is <http://www.middlesexwater.com>. Information contained on our website is not part of this Annual Report on Form 10-K. We make available, free of charge through our website, reports and amendments filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, after such material is electronically filed with or furnished to the United States Securities and Exchange Commission (the SEC).

Middlesex System

Located in New Jersey, the Middlesex System provides water services to approximately 61,000 retail customers, primarily in eastern Middlesex County and under wholesale contracts to the City of Rahway, Townships of Edison and Marlboro, the Borough of Highland Park and the Old Bridge Municipal Utilities Authority. The Middlesex System treats, stores and distributes water for residential, commercial, industrial and fire protection purposes. The Middlesex System also provides water treatment and pumping services to the Township of East Brunswick under contract. The amount of water supply allocated to the Township of East Brunswick is granted directly to the Township by the New Jersey Water Supply Authority. The Middlesex System produced approximately 59% of our 2021 consolidated operating revenues.

The Middlesex System’s retail customers are located in an area of approximately 55 square miles in Woodbridge Township, the City of South Amboy, the Boroughs of Metuchen and Carteret, portions of the Township of Edison and the Borough of South Plainfield, all in Middlesex County, and a portion of the Township of Clark in Union County. Retail customers include a mix of residential customers, large industrial concerns and commercial and light industrial facilities. These customers are located in generally well-developed areas of central New Jersey.

The contract customers of the Middlesex System comprise an area of approximately 110 square miles with a population of over 200,000. Contract sales to the Townships of Edison and Marlboro, the City of Rahway and the Old Bridge Municipal Utilities Authority are supplemental to the water systems owned and operated by these customers. Middlesex is the sole source of water for the Borough of Highland Park and the Township of East Brunswick.

Middlesex provides water service to approximately 300 customers in Cumberland County, New Jersey. This system is referred to as Bayview, and is not physically interconnected with the Middlesex System. Bayview produced less than 0.1% of our 2021 consolidated operating revenues.

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Tidewater System

Tidewater, together with its wholly-owned subsidiary, Southern Shores, provides water services to approximately 55,000 retail customers for residential, commercial and fire protection purposes in over 450 separate communities in New Castle, Kent and Sussex Counties, Delaware. The Tidewater System produced approximately 29% of our 2021 consolidated operating revenues.

USA-PA

USA-PA operates the City of Perth Amboy, New Jersey's (Perth Amboy) water and wastewater systems under a 10-year agreement, which expires in December 2028. There are approximately 12,000 customers comprised of residential, commercial and industrial connections, most of which are served by both the water and wastewater systems. In addition to performing day-to-day operations, USA-PA is also responsible for emergency responses and management of capital projects funded by Perth Amboy. USA-PA produced approximately 5% of our 2021 consolidated operating revenues.

Pinelands Systems

Pinelands Water provides water services to approximately 2,500 residential customers in Burlington County, New Jersey. Pinelands Water is not physically interconnected with the Middlesex System. Pinelands Water produced approximately 1% of our 2021 consolidated operating revenues.

Pinelands Wastewater provides wastewater collection and treatment services to approximately 2,500 residential customers. Under contract, it also services one municipal wastewater system in Burlington County, New Jersey with approximately 200 residential customers. Pinelands Wastewater produced approximately 1% of our 2021 consolidated operating revenues.

USA

USA operates the Borough of Avalon, New Jersey's (Avalon) water utility, sewer utility and storm water system under a ten-year operations and maintenance contract expiring in June 2022. USA expects to participate in the public proposal process for a new ten-year contract. There are approximately 6,400 retail customers in Avalon, most of which are served by both the water system and wastewater collection system. In addition to performing day-to-day service operations, USA is responsible for billing, collections, customer service, emergency responses and management of capital projects funded by Avalon.

USA operates the Borough of Highland Park, New Jersey's (Highland Park) water utility and sewer utility under a ten-year operations and maintenance contract expiring in 2030. There are approximately 3,300 mostly retail customers in Highland Park. The contract commenced July 1, 2020.

USA also provides water and wastewater services to several other New Jersey municipalities under contracts that are not regulated by a public utility commission as to rates and service.

Under a marketing agreement with HomeServe USA Corp. (HomeServe) expiring in 2031, USA offers residential customers in New Jersey and Delaware various water and wastewater related home maintenance programs. USA receives a service fee for the billing, cash collection and other administrative matters associated with HomeServe's service contracts.

USA produced approximately 3% of our 2021 consolidated operating revenues.

White Marsh

White Marsh operates or maintains water and/or wastewater systems that serve approximately 4,500 service connections under 35 separate contracts. White Marsh also owns two commercial properties that are leased to Tidewater for its administrative office campus and its field operations center. White Marsh produced approximately 1% of our 2021 consolidated operating revenues.

EX-99.1 2 ex99-1.htm EX-99.1

EXHIBIT 99.1**FOR IMMEDIATE RELEASE****Middlesex Water Company Declares
Quarterly Cash Dividend**

ISELIN, N.J., January 27, 2022 – Middlesex Water Company (NASDAQ:MSEX) announced today that its Board of Directors has declared a cash dividend of \$0.29 per share on its common stock, payable March 1, 2022 to shareholders of record as of February 14, 2022. Middlesex Water Company has paid cash dividends in varying amounts continually since 1912.

Middlesex Water Company is an investor-owned water and wastewater utility, serving customers primarily in central and southern New Jersey and Delaware. The Company is currently offering a 3% discount on all Common Stock purchases made under its Investment Plan whether by optional cash payment or by dividend reinvestment. The discount will continue until 200,000 shares are purchased at the discounted price or August 1, 2022, whichever event occurs first. To learn more visit <https://shareholder.broadridge.com/middlesexwater>

ABOUT MIDDLESEX WATER COMPANY

Established in 1897, Middlesex Water Company serves as a trusted provider offering life-sustaining high quality water service for residential, commercial, industrial and fire protection purposes. The Company offers a full range of water, wastewater utility and related services. An investor-owned public utility, Middlesex Water is a professional services provider specializing in municipal and industrial contract operations and water and wastewater system technical operations and maintenance. The company and its subsidiaries form the Middlesex Water family of companies, which collectively serve a population of nearly half a million people in New Jersey and Delaware. Middlesex is focused on meeting the needs of our employees, customers, and shareholders. We invest in our people, our infrastructure and the communities we serve to support reliable and resilient utility services, economic growth and quality of life. To learn more about Middlesex Water, visit <https://www.middlesexwater.com>

Item 1. Business**General Development of Business**

SJW Group was initially incorporated as SJW Corp. in the state of California on February 8, 1985. SJW Group is a holding company with four wholly-owned subsidiaries:

- San Jose Water Company (“SJWC”) with its headquarters located at 110 West Taylor Street in San Jose, California 95110, was originally incorporated under the laws of the State of California in 1866. As part of a reorganization on February 8, 1985, SJWC became a wholly owned subsidiary of SJW Group. SJWC is a public utility in the business of providing water service to approximately 231,000 connections that serve a population of approximately one million people in an area comprising approximately 139 square miles in the metropolitan San Jose, California area.
- SJWNE LLC, a Delaware limited liability company, was formed in 2019, and is a wholly-owned subsidiary of SJW Group. SJWNE LLC is a special purpose entity established to hold SJW Group’s investment in Connecticut Water Service, Inc. Connecticut Water Service, Inc. with its headquarters located in Clinton, Connecticut was incorporated in 1974 in the State of Connecticut. As part of the merger transaction between SJW Group and Connecticut Water Service, Inc. on October 9, 2019, Connecticut Water Service, Inc. and its subsidiaries (“CTWS”) became a wholly-owned subsidiary of SJWNE LLC. Connecticut Water Service, Inc. is a holding company with four wholly-owned subsidiaries. The Connecticut Water Company (“Connecticut Water”) and The Maine Water Company (“Maine Water”) are public utilities in the business of providing water service to approximately 140,000 connections that serve a population of approximately 456,000 people in 81 municipalities throughout Connecticut and Maine and more than 3,000 wastewater connections in Southbury, Connecticut. The remaining two subsidiaries are Chester Realty, Inc., a real estate company in Connecticut, and New England Water Utility Services, Inc. (“NEWUS”), which provides contract water and sewer operations and other water related services.
- SJWTX, Inc. was incorporated in the State of Texas in 2005. SJWTX, Inc. is doing business as Canyon Lake Water Service Company (“CLWSC”). CLWSC is a public utility in the business of providing water service to approximately 24,000 service connections that serve approximately 70,000 people. CLWSC’s service area comprises more than 266 square miles in the southern region of the Texas Hill Country in Bandera, Blanco, Comal, Hays, Kendall, Medina and Travis counties, the growing region between San Antonio and Austin, Texas. SJWTX, Inc. has a 25% interest in Acequia Water Supply Corporation (“Acequia”). Acequia has been determined to be a variable interest entity within the scope of Financial Accounting Standards Board (“FASB”) Accounting Standard Codification (“ASC”) Topic 810, “Consolidation” with SJWTX, Inc. as the primary beneficiary. As a result, Acequia has been consolidated with SJWTX, Inc. On December 17, 2021, CLWSC completed its acquisition of Kendall West Utility and Bandera East Utility, companies that provide water services, including wastewater and recycled water services in Kendall, Bandera and Medina counties which are located in south central Texas. Kendall West Utility and Bandera East Utility, together, added approximately 1,600 service connections that serve a population of approximately 5,000 people in a service area approximately 19 square miles to CLWSC’s operations. SJWTX, Inc is undergoing a corporate reorganization to separate regulated operations from non-tariffed activities. In November 2021, SJWTX Holdings, Inc. (“SJWTX Holdings”) and Texas Water Operation Services LLC (“TWOS”) were formed for the purpose of effecting a corporate reorganization of our water services organization in Texas. TWOS was created for non-tariffed operations and is wholly-owned by SJWTX Holdings. SJWTX Holdings is a wholly-owned subsidiary of SJW Group, incorporated to hold the investments in SJWTX, Inc. and TWOS. In addition, in 2022, SJWTX Holdings intends to create a new subsidiary to hold future wholesale water supply assets.
- SJW Land Company was incorporated in 1985. SJW Land Company owns undeveloped land in California and Tennessee and operates commercial buildings in Tennessee.

Together, SJWC, Connecticut Water, CLWSC, Maine Water and NEWUS, are referred to as “Water Utility Services.”

SJW Land Company and Chester Realty, Inc. are collectively referred to as “Real Estate Services.”

Regulation and Rates

Water Utility Services are subject to rate regulation based on cost recovery and meets the criteria of accounting guidance for rate-regulated operations, which considers the timing of the recognition of certain revenues and expenses. SJW Group’s consolidated financial statements reflect the effects of the rate-making process. The rate-making process is intended to provide revenues sufficient to recover normal operating expenses, provide funds for replacement of water infrastructure and produce a fair and reasonable return on stockholder common equity. SJW Group’s regulated operations financing activity is designed to

Lead and copper may enter drinking water primarily through plumbing materials. The Company is required to comply with the Lead and Copper Rule established by the EPA and administered by the DEP. The Company must monitor drinking water at customer taps for compliance with this rule. If lead concentrations exceed an action level, the Company must undertake a number of additional actions to control corrosion, inform the public about steps they should take to protect their health and may be required to replace lead service lines under its control. See “Management’s Discussion and Analysis – Environmental Matters” for a discussion of the Company’s compliance with the Lead and Copper rule.

The DEP and the Susquehanna River Basin Commission, or SRBC, regulate the amount of water withdrawn from streams in the watershed to assure that sufficient quantities are available to meet the needs of the Company and other regulated users. Through its Division of Dam Safety, the DEP regulates the operation and maintenance of the Company’s impounding dams. The Company routinely inspects its dams and prepares annual reports of their condition as required by DEP regulations. The DEP reviews these reports and inspects the Company’s dams. The DEP most recently inspected the Company’s dams in 2021.

Since 1980, the DEP has required any new dam to have a spillway that is capable of passing the design flood without overtopping the dam. The design flood is either the Probable Maximum Flood, or PMF, or some fraction of it, depending on the size and location of the dam. PMF is very conservative and is calculated using the most severe combination of meteorological and hydrologic conditions reasonably possible in the watershed area of a dam.

The Company engaged a professional engineer to analyze the spillway capacities at the Lake Williams and Lake Redman dams and validate the DEP’s recommended flood design for the dams. Management presented the results of the study to the DEP in December 2004, and DEP then requested that the Company submit a proposed schedule for the actions to address the spillway capacities. Thereafter, the Company retained an engineering firm to prepare preliminary designs for increasing the spillway capacities to pass the PMF through armoring the dams with roller compacted concrete. Management has met with the DEP on a regular basis to review the preliminary design and discuss scheduling, permitting, and construction requirements. Recently, the DEP expressed concern regarding the stability of the Lake Williams spillway in light of current design standards. The Company is currently completing the final design and the permitting process to armor and replace the spillway of the Lake Williams dam. The Company finalized its plans in 2021 and will begin construction in 2022 at a total cost of approximately \$32 million. The Lake Redman dam will be reviewed following the completion of the work on the Lake Williams dam.

Capital expenditures and operating costs required as a result of water quality standards and environmental requirements have been traditionally recognized by state public utility commissions as appropriate for inclusion in establishing rates. The capital expenditures currently required as a result of water quality standards and environmental requirements have been budgeted in the Company’s capital program and represent less than 15% of its expected total capital expenditures over the next five years. The Company is currently in compliance with wastewater environmental standards and does not anticipate any major capital expenditures for its current wastewater business.

Growth

(All dollar amounts are stated in thousands of dollars)

The Company continues to grow its number of customers and distribution facilities.

The growth in the number of customers of the Company is due primarily to the acquisition of water and wastewater systems and organic growth. During the year ended December 31, 2021, the Company increased its number of customers from 72,681 to 73,144. See “Management’s Discussion and Analysis – Acquisitions and Growth” for a discussion of the Company’s recent acquisitions.

The Company continues to grow its water distribution and wastewater collection systems to provide reliable service to its expanding franchised service territory and the increasing population within that territory. During the year ended December 31, 2021, the Company installed an additional 62,375 feet of water distribution mains and acquired an additional 171,587 feet of wastewater collection mains resulting in 999 miles of water mains and 73 miles of wastewater mains as of December 31, 2021.

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THE YORK WATER COMPANY

Appendix A-5.2 (Gannett)

PART I

Item 1. Business.

The York Water Company (the “Company”) is the oldest investor-owned water utility in the United States and is duly organized under the laws of the Commonwealth of Pennsylvania. The Company has operated continuously since 1816. The primary business of the Company is to impound, purify to meet or exceed safe drinking water standards and distribute water. The Company also owns and operates three wastewater collection systems and five wastewater collection and treatment systems. The Company operates within its franchised water and wastewater territory, which covers portions of 51 municipalities within three counties in south-central Pennsylvania. The Company is regulated by the Pennsylvania Public Utility Commission, or PPUC, for both water and wastewater in the areas of billing, payment procedures, dispute processing, terminations, service territory, debt and equity financing and rate setting. The Company must obtain PPUC approval before changing any practices associated with the aforementioned areas.

Water service is supplied through the Company's own distribution system. The Company obtains the bulk of its water supply from both the South Branch and East Branch of the Codorus Creek, which together have an average daily flow of 73.0 million gallons. This combined watershed area is approximately 117 square miles. The Company has two reservoirs, Lake Williams and Lake Redman, which together hold up to approximately 2.2 billion gallons of water. The Company supplements its reservoirs with a 15-mile pipeline from the Susquehanna River to Lake Redman which provides access to an additional supply of 12.0 million gallons of untreated water per day. The Company also owns nine wells which are capable of providing a safe yield of approximately 597,000 gallons per day to supply water to the customers of its satellite systems in Adams County. As of December 31, 2021, the Company's average daily availability was 39.6 million gallons, and average daily consumption was approximately 20.1 million gallons. The Company's service territory had an estimated population of 204,000 as of December 31, 2021. Industry within the Company's service territory is diversified, manufacturing such items as fixtures and furniture, electrical machinery, food products, paper, ordnance units, textile products, air conditioning systems, laundry detergent, barbells, and motorcycles.

The Company's water business is somewhat dependent on weather conditions, particularly the amount and timing of rainfall. Revenues are particularly vulnerable to weather conditions in the summer months. Prolonged periods of hot and dry weather generally cause increased water usage for watering lawns, washing cars, and keeping golf courses and sports fields irrigated. Conversely, prolonged periods of dry weather could lead to drought restrictions from governmental authorities. Despite the Company's adequate water supply, customers may be required to cut back water usage under such drought restrictions which would negatively impact revenues. The Company has addressed some of this vulnerability by instituting minimum customer charges which are intended to cover fixed costs of operations under all likely weather conditions.

The Company's business does not require large amounts of working capital and is not dependent on any single customer or a very few customers for a material portion of its business. Increases in revenues are generally dependent on the Company's ability to obtain rate increases from the PPUC in a timely manner and in adequate amounts and to increase volumes of water sold through increased consumption and increases in the number of customers served. The Company continuously looks for water and wastewater acquisition and expansion opportunities both within and outside its current service territory as well as additional opportunities to enter into bulk water contracts with municipalities and other entities to supply water.

The Company has agreements with several municipalities to provide sewer billing and collection services. The Company also has a service line protection program on a targeted basis in order to further diversify its business. Under this optional program, customers pay a fixed monthly fee, and the Company will repair or replace damaged customer service lines, as needed, subject to an annual maximum dollar amount. The Company continues to review and consider opportunities to expand both initiatives.

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Consensus Forecast of U.S. Interest Rates and Key Assumptions

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Qtr	1Q	2Q	3Q	4Q	1Q	2Q
	Dec 23	Dec 16	Dec 9	Dec 2	Nov	Oct	Sep	4Q 2022*	2023	2023	2023	2023	2024	2024
Interest Rates														
Federal Funds Rate	4.33	3.83	3.83	3.83	3.78	3.08	2.56	3.59	4.7	5.0	4.9	4.7	4.4	4.0
Prime Rate	7.50	7.00	7.00	7.00	6.95	6.25	5.73	6.76	7.8	8.1	8.0	7.8	7.5	7.2
SOFR	4.30	4.01	3.80	3.81	3.73	3.04	2.50	3.55	4.6	4.9	4.8	4.6	4.4	4.1
Commercial Paper, 1-mo.	4.28	4.23	4.15	4.00	3.88	3.28	2.80	3.71	4.8	5.1	4.9	4.6	4.4	4.0
Treasury bill, 3-mo.	4.35	4.34	4.32	4.37	4.32	3.87	3.22	4.17	4.8	4.9	4.8	4.6	4.3	3.9
Treasury bill, 6-mo.	4.68	4.71	4.72	4.69	4.61	4.31	3.71	4.53	4.9	5.0	4.8	4.5	4.3	4.0
Treasury bill, 1 yr.	4.64	4.66	4.72	4.73	4.73	4.43	3.89	4.61	4.9	4.9	4.7	4.4	4.2	3.9
Treasury note, 2 yr.	4.25	4.25	4.33	4.37	4.50	4.38	3.86	4.39	4.5	4.4	4.2	3.9	3.8	3.5
Treasury note, 5 yr.	3.78	3.67	3.72	3.79	4.06	4.18	3.70	4.00	4.0	4.0	3.9	3.7	3.6	3.4
Treasury note, 10 yr.	3.67	3.51	3.52	3.63	3.89	3.98	3.52	3.82	3.8	3.8	3.7	3.6	3.6	3.5
Treasury bond, 30 yr.	3.73	3.53	3.51	3.71	4.00	4.04	3.56	3.89	4.0	4.0	3.9	3.9	3.8	3.8
Corporate Aaa bond	4.88	4.66	4.68	4.87	5.23	5.41	4.87	5.15	5.1	5.2	5.2	5.1	4.9	4.8
Corporate Baa bond	5.56	5.34	5.38	5.57	5.95	6.22	5.64	5.90	6.1	6.3	6.2	6.1	5.9	5.8
State & Local bonds	4.24	4.18	4.19	4.26	4.50	4.62	4.31	4.46	4.3	4.4	4.3	4.3	4.3	4.2
Home mortgage rate	6.27	6.31	6.33	6.49	6.81	6.90	6.11	6.69	6.5	6.5	6.3	6.2	6.0	5.8
	History								Consensus Forecasts-Quarterly					
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Key Assumptions	2021	2021	2021	2021	2022	2022	2022	2022**	2023	2023	2023	2023	2024	2024
Fed's AFE Index	103.4	102.9	105.0	107.0	108.4	113.7	119.0	120.6	118.7	118.1	117.6	117.1	116.8	116.9
Real GDP	6.3	7.0	2.7	7.0	-1.6	-0.6	3.2	1.0	-0.2	-0.7	0.3	0.9	1.3	1.7
GDP Price Index	5.2	6.3	6.2	6.8	8.3	9.0	4.4	4.3	3.6	3.0	2.7	2.5	2.3	2.2
Consumer Price Index	4.1	8.2	6.7	7.9	9.2	10.5	5.7	4.5	3.4	3.1	2.9	2.6	2.4	2.3
PCE Price Index	4.5	6.4	5.6	6.2	7.5	7.3	4.3	4.2	3.2	2.8	2.6	2.5	2.4	2.2

*Interest rate data for 4Q 2022 based on historical data through the week ended December 23.

**Data for 4Q 2022 for the Fed's AFE \$ Index based on data through the week ended December 23. Figures for 4Q 2022 Real GDP, GDP Chained Price Index, Consumer Price Index, and PCE Price Index are consensus forecasts from the December 2022 survey.

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Enterprise value to Inv Cap	2.433	2.371	2.536	2.357	2.086	2.239	2.310	2.185	2.125	2.106	2.333	2.312	2.486	2.742	2.569	2.489	2.366	2.567	2.454	2.247	2.249	2.229	2.144
Enterprise value to Net PPE	1.791	1.740	1.776	1.723	1.589	1.796	1.855	1.757	1.854	1.938	1.857	1.948	2.194	2.053	2.099	2.063	2.204	2.081	1.936	1.964	1.958	1.958	1.903
Enterprise value to value	1.774	1.748	1.807	1.679	1.609	1.834	1.869	1.718	1.752	1.692	1.848	1.786	1.807	1.932	1.814	1.784	1.760	1.875	1.850	1.762	1.826	1.812	1.751
Enterprise value to Inv Cap	1.141	1.116	1.090	1.056	1.000	1.130	1.055	1.013	1.060	1.025	1.056	1.039	1.065	1.037	0.991	0.946	0.911	0.945	0.933	0.899	0.981	0.972	0.960
Enterprise value to Net PPE	1.494	1.462	1.515	1.342	1.473	1.503	1.397	1.381	1.347	1.482	1.465	1.543	1.727	1.589	1.548	1.524	1.648	1.615	1.475	1.517	1.554	1.494	1.494
Enterprise value to value	1.963	1.902	2.238	2.160	1.904	2.182	2.071	2.148	2.467	2.401	2.421	2.421	2.499	2.643	2.528	2.678	2.631	2.075	2.075	2.213	2.115	2.050	2.050
Enterprise value to Inv Cap	1.547	1.559	1.506	1.459	1.297	1.395	1.411	1.359	1.373	1.339	1.464	1.430	1.451	1.503	1.461	1.443	1.427	1.492	1.407	1.407	1.446	1.460	1.443
Enterprise value to Net PPE	1.848	1.833	1.931	1.831	1.649	1.902	1.960	1.866	1.921	1.823	1.925	1.962	1.981	2.136	2.080	2.103	1.949	2.290	2.150	2.040	2.271	2.326	2.224

Company Name

- AMERICAN STATES WATER COMP
- AMERICAN WATER WORKS COMP
- ESSENTIAL UTILITIES, INC.
- ARTESIAN RESOURCES CORPORA
- CALIFORNIA WATER SERVICE GR
- MIDDLESEX WATER COMPANY
- SIW GROUP
- THE YORK WATER COMPANY

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Enterprise value to Inv Cap	1.000	0.974	1.042	0.969	0.857	0.920	0.949	0.873	0.865	0.959	0.950	1.022	1.127	1.056	1.023	0.972	1.055	1.008	0.923	0.924	0.916	0.881	0.881
Enterprise value to Net PPE	1.000	0.971	0.991	0.962	0.887	0.903	0.984	0.907	0.954	1.042	1.007	1.089	1.225	1.146	1.106	1.066	1.146	1.230	1.162	1.081	1.096	1.093	1.062
Enterprise value to value	1.000	0.986	1.019	0.947	0.907	1.034	1.054	0.988	0.987	1.042	1.007	1.079	1.225	1.146	1.106	1.066	1.146	1.230	1.162	1.081	1.096	1.093	1.062
Enterprise value to Inv Cap	1.000	0.979	0.955	0.926	0.876	0.991	0.925	0.888	0.929	0.988	0.926	0.910	0.933	0.909	0.869	0.829	0.999	0.992	0.829	0.818	0.788	0.860	0.842
Enterprise value to Net PPE	1.000	0.979	1.050	1.014	0.898	0.986	1.006	0.935	0.924	1.091	1.055	1.174	1.301	1.223	1.234	1.430	1.273	1.347	1.262	1.364	1.281	1.057	1.044
Enterprise value to value	1.000	0.969	1.140	1.000	0.970	1.112	1.174	1.091	1.055	1.094	1.257	1.223	1.430	1.273	1.347	1.430	1.273	1.347	1.262	1.364	1.281	1.057	1.044
Enterprise value to Inv Cap	1.000	1.008	0.973	0.943	0.838	0.902	0.912	0.878	0.888	0.866	0.947	0.924	0.938	0.971	0.944	0.933	0.922	0.964	0.961	0.910	0.935	0.944	0.932
Enterprise value to Net PPE	1.000	0.992	1.045	0.991	0.892	1.029	1.060	1.010	1.039	0.986	1.041	1.061	1.156	1.125	1.138	1.054	1.239	1.163	1.104	1.229	1.258	1.204	1.204

Company Name

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- AMERICAN WATER WORKS COMP
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- SIW GROUP
- THE YORK WATER COMPANY

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Enterprise value to Inv Cap	100%	98%	103%	97%	89%	100%	102%	95%	96%	93%	102%	99%	114%	106%	103%	101%	108%	107%	107%	99%	102%	103%	100%
Enterprise value to Net PPE	100%	98%	103%	97%	89%	100%	102%	95%	96%	93%	102%	99%	114%	106%	103%	101%	108%	107%	107%	99%	102%	103%	100%
Enterprise value to Inv Cap	100%	98%	103%	97%	89%	100%	102%	95%	96%	93%	102%	99%	114%	106%	103%	101%	108%	107%	107%	99%	102%	103%	100%

Company Name

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	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019
	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	2.263	2.244	2.288	2.117	2.115	2.128	2.112	2.024	2.021	2.000	1.919	1.958	2.005	2.088	2.128	2.004	1.863	1.894	1.944	1.879	1.805	1.760	1.752	1.800	1.756
AMERICAN WATER WORKS COMP	1.500	1.448	1.522	1.448	1.441	1.462	1.436	1.405	1.400	1.433	1.372	1.393	1.416	1.511	1.540	1.497	1.418	1.442	1.433	1.396	1.411	1.419	1.396	1.443	1.367
ESSENTIAL UTILITIES, INC.	1.505	1.479	1.535	1.453	1.593	1.626	1.606	1.549	1.550	1.555	1.519	1.558	1.609	1.710	1.707	1.621	1.536	1.574	1.556	1.553	1.549	1.553	1.519	1.535	1.479
ARTESIAN RESOURCES CORPORA	0.927	0.919	0.963	0.961	0.966	0.972	0.980	1.014	1.035	1.009	0.973	0.926	1.009	1.036	1.138	1.102	1.040	1.044	1.072	1.053	1.009	1.070	0.943	0.957	0.919
CALIFORNIA WATER SERVICE GR	1.468	1.427	1.420	1.328	1.349	1.339	1.338	1.265	1.324	1.289	1.228	1.284	1.351	1.463	1.510	1.420	1.322	1.332	1.369	1.294	1.267	1.294	1.271	1.316	1.239
MIDDLESEX WATER COMPANY	1.835	1.759	1.772	1.569	1.664	1.636	1.567	1.507	1.592	1.505	1.361	1.345	1.410	1.476	1.697	1.601	1.474	1.459	1.486	1.497	1.384	1.467	1.430	1.481	1.486
SIW GROUP	1.630	1.539	1.534	1.321	1.318	1.290	1.396	1.406	1.380	1.336	1.200	1.208	1.309	1.373	1.480	1.334	1.276	1.288	1.243	1.184	1.195	1.209	1.211	1.221	1.230
THE YORK WATER COMPANY	1.745	1.709	1.773	1.687	1.655	1.657	1.688	1.724	1.776	1.755	1.702	1.573	1.731	1.832	2.006	1.910	1.852	1.859	1.932	1.934	1.883	2.079	1.963	2.043	2.034

Company Name	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019
	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	0.930	0.922	0.940	0.869	0.875	0.868	0.832	0.831	0.822	0.822	0.789	0.805	0.824	0.858	0.875	0.824	0.766	0.778	0.799	0.772	0.742	0.723	0.720	0.740	0.722
AMERICAN WATER WORKS COMP	0.837	0.808	0.850	0.808	0.804	0.816	0.802	0.784	0.782	0.800	0.766	0.777	0.791	0.844	0.840	0.836	0.836	0.805	0.800	0.779	0.788	0.792	0.779	0.805	0.763
ESSENTIAL UTILITIES, INC.	0.849	0.834	0.865	0.819	0.898	0.917	0.905	0.873	0.874	0.877	0.856	0.878	0.853	0.908	0.962	0.914	0.866	0.887	0.887	0.870	0.873	0.875	0.857	0.868	0.834
ARTESIAN RESOURCES CORPORA	0.813	0.805	0.845	0.843	0.847	0.852	0.859	0.889	0.889	0.874	0.853	0.812	0.884	0.968	0.997	0.966	0.911	0.915	0.923	0.885	0.938	0.826	0.838	0.806	
CALIFORNIA WATER SERVICE GR	0.935	0.896	0.903	0.799	0.848	0.833	0.798	0.768	0.811	0.767	0.694	0.685	0.718	0.752	0.856	0.816	0.751	0.743	0.763	0.866	0.848	0.866	0.851	0.881	0.829
MIDDLESEX WATER COMPANY	1.053	0.994	0.991	0.854	0.852	0.834	0.903	0.909	0.892	0.864	0.776	0.781	0.846	0.887	0.956	0.862	0.825	0.832	0.804	0.766	0.773	0.782	0.783	0.789	0.795
THE YORK WATER COMPANY	0.944	0.924	0.960	0.913	0.895	0.896	0.913	0.933	0.961	0.950	0.921	0.851	0.937	0.991	1.086	1.034	1.002	1.006	1.045	1.047	1.019	1.125	1.062	1.106	1.100

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Company Name	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019
	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER COMF	1.011	1.002	1.012	0.936	0.935	0.942	0.934	0.895	0.895	0.886	0.850	0.867	0.888	0.924	0.937	0.882	0.820	0.788	0.806	0.781	0.768	0.749	0.745	0.765	0.746
AMERICAN WATER WORKS COMP	0.867	0.837	0.876	0.833	0.829	0.866	0.850	0.832	0.839	0.858	0.822	0.813	0.827	0.882	0.892	0.867	0.821	0.838	0.832	0.810	0.825	0.830	0.816	0.838	0.794
ESSENTIAL UTILITIES, INC.	1.196	1.174	1.214	1.149	1.259	1.311	1.295	1.249	1.257	1.261	1.232	1.268	1.309	1.381	1.311	1.242	1.287	1.272	1.270	1.271	1.270	1.274	1.247	1.256	1.210
ARTESIAN RESOURCES CORPORA	0.809	0.802	0.840	0.838	0.842	0.842	0.849	0.879	0.896	0.883	0.851	0.801	0.872	0.896	0.974	0.943	0.890	0.891	0.914	0.898	0.861	0.913	0.804	0.823	0.791
CALIFORNIA WATER SERVICE GR	1.077	1.047	1.066	0.997	1.012	1.018	1.017	0.961	0.966	0.940	0.896	0.940	1.004	1.087	1.116	1.049	0.976	1.013	1.041	0.984	0.960	0.981	0.964	1.015	0.956
MIDDLESEX WATER COMPANY	1.055	1.011	1.029	0.910	0.966	0.927	0.891	0.934	0.883	0.799	0.790	0.829	0.868	1.005	0.949	0.874	0.863	0.879	0.885	0.820	0.868	0.847	0.865	0.868	0.868
SIW GROUP	1.485	1.402	1.410	1.214	1.211	1.200	1.299	1.307	1.274	1.234	1.108	1.138	1.233	1.264	1.405	1.267	1.212	1.212	1.170	1.115	1.078	1.091	1.092	1.120	1.149
THE YORK WATER COMPANY	1.017	0.996	1.028	0.978	0.959	0.968	0.986	1.007	1.050	1.018	0.987	0.921	1.014	1.073	1.180	1.124	1.089	1.087	1.130	1.131	1.084	1.197	1.131	1.151	1.145

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Company Name	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019	1/31/2019
	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE
AMERICAN STATES WATER COMF	93%	91%	92%	85%	86%	86%	88%	86%	88%	86%	81%	81%	87%	90%	96%	89%	85%	85%	86%	84%	82%	83%	80%	82%	80%
AMERICAN WATER WORKS COMP	104%	101%	103%	92%	96%	96%	97%	96%	93%	95%	91%	87%	89%	91%	106%	100%	95%	95%	95%	98%	94%	91%	95%	91%	94%

NetPlant Advances CIAC DefTax ITC

2021 Net Property, Plant & Equipment	Advances for construction	Contributions in aid of construction	Deferred income taxes, net	Deferred investment tax credits	2021 Known "Cost Free" Capital	2021 Percentage of Known "Cost Free" Capital
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(Millions of \$)

Comparable Group

1 American States Water Co	\$1,626.004	\$66.727	\$147.482	\$140.290	\$1.153	\$355.652	22%
2 American Water Works Co Inc	\$21,084.000	\$284.000	\$1,442.000	\$2,421.000	\$0.000	\$4,147.000	20%
3 Artesian Resources -CL A	\$590.431	\$4.295	\$176.656	\$53.133	\$0.456	\$234.540	40%
4 California Water Service Gp	\$2,846.862	\$198.086	\$285.665	\$298.945	\$0.000	\$782.696	27%
5 Essential Utilities, Inc.	\$10,251.866	\$103.619	\$596.110	\$1,406.537	\$0.000	\$2,106.266	21%
6 Middlesex Water Co	\$865.368	\$23.529	\$127.863	\$69.500	\$0.000	\$220.892	26%
7 SJW Corp	\$2,497.499	\$130.693	\$316.479	\$200.451	\$0.000	\$647.623	26%
8 York Water Co	\$383.626	\$12.820	\$41.876	\$49.590	\$0.000	\$104.286	27%
Median							26%

CONSOLIDATED BALANCE SHEETS - USD (\$)		
	Dec. 31, 2021	Dec. 31, 2020
\$ in Thousands		
Regulated utility plant, at cost		
Water	\$1,898,817	\$1,784,402
Electric	116,472	112,507
Total	2,015,289	1,896,909
Non-regulated utility property, at cost	37,064	33,315
Total utility plant, at cost	2,052,353	1,930,224
Less — accumulated depreciation	-594,264	-568,326
Utility plant before construction work in progress	1,458,089	1,361,898
Construction work in progress	167,915	150,145
Net utility plant	1,626,004	1,512,043
Other Property and Investments		
Goodwill	1,116	1,116
Other property and investments	40,806	35,318
Total other property and investments	41,922	36,434
Current Assets		
Cash and cash equivalents	4,963	36,737
Accounts receivable — customers, less allowance for doubtful accounts	34,416	29,162
Unbilled revenue — receivable (Note 2)	27,147	25,836
Receivable from U.S. government, less allowance for doubtful accounts (Note 2)	27,827	25,182
Other accounts receivable, less allowance for doubtful accounts	6,510	3,960
Income taxes receivable	236	103
Materials and supplies	12,163	8,619
Regulatory assets — current	8,897	13,088
Prepayments and other current assets	5,317	5,555
Contract assets (Note 2)	6,135	8,873
Unrealized gain on purchased power contracts	4,441	0
Total current assets	138,052	157,115
Regulatory and Other Assets		
Unbilled revenue, receivable from U.S government	9,671	9,945
Receivable from U.S. government (Note 2)	51,991	49,488
Contract assets (Note 2)	3,452	1,384
Operating lease right-of-use assets	10,479	11,146
Regulatory assets	3,182	3,451
Other	16,230	10,597
Total other assets	95,005	86,011
Total Assets	1,900,983	1,791,603
Capitalization		
Common shareholder's equity	685,947	641,673
Long-term debt	412,176	440,348
Total capitalization	1,098,123	1,082,021
Current Liabilities		
Notes payable to banks	31,000	0
Long-term debt — current	377	358
Accounts payable	65,902	63,788
Income taxes payable	4,662	6,783
Accrued other taxes	17,137	11,902
Accrued employee expenses	16,256	15,122
Accrued interest	4,545	4,832
Unrealized loss on purchased power contracts	0	1,537
Regulatory liabilities	1,896	0
Contract liabilities (Note 2)	257	1,800
Operating lease liabilities	2,044	2,013
Other	11,498	10,437
Total current liabilities	155,574	118,572
Other Credits		
Notes payable to banks	174,500	134,200
Advances for construction	66,727	63,374
Contributions in aid of construction — net	147,482	140,332
Deferred income taxes	140,290	131,172
Regulatory liabilities	32,979	0
Unamortized investment tax credits	1,153	1,224
Accrued pension and other post-retirement benefits	61,365	95,639
Operating lease liabilities	8,920	9,636
Other	13,870	15,433
Total other credits	647,286	591,010
Commitments and Contingencies		
Liabilities and Equity, Total	\$1,900,983	\$1,791,603

NetPlant	1,626,004	1,512,043
Advances	66,727	63,374
CIAC	147,482	140,332
DefTax	140,290	131,172
ITC	1,153	1,224

Consolidated Balance Sheets - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
ASSETS		
Property, plant and equipment	\$27,413	\$25,614
Accumulated depreciation	-6,329	-5,904
Property, plant and equipment, net	21,084	19,710
Current assets:		
Cash and cash equivalents	116	547
Restricted funds	20	29
Accounts receivable, net of allowance for uncollectible accounts of \$75 and \$60, respectively	271	321
Unbilled revenues	248	206
Materials and supplies	57	47
Assets held for sale	683	629
Other	159	127
Total current assets	1,554	1,906
Regulatory and other long-term assets:		
Regulatory assets	1,051	1,127
Seller promissory note from the sale of the Homeowner Services Group	720	0
Operating lease right-of-use assets	92	95
Goodwill	1,139	1,504
Postretirement benefit assets	193	173
Intangible assets	0	55
Other	242	196
Total regulatory and other long-term assets	3,437	3,150
Total assets	26,075	24,766
Capitalization:		
Common stock (\$0.01 par value; 500,000,000 shares authorized; 186,880,413 and 186,466,707 shares outstanding, respectively)	2	2
Paid-in-capital	6,781	6,747
Retained earnings	925	102
Accumulated other comprehensive loss	-45	-49
Treasury stock, at cost (5,269,324 and 5,168,215 shares, respectively)	-365	-348
Total common shareholders' equity	7,298	6,454
Long-term debt	10,341	9,329
Redeemable preferred stock at redemption value	3	4
Total long-term debt	10,344	9,333
Total capitalization	17,642	15,787
Current liabilities:		
Short-term debt	584	1,282
Current portion of long-term debt	57	329
Accounts payable	235	189
Accrued liabilities	701	591
Accrued taxes	176	50
Accrued interest	88	88
Liabilities related to assets held for sale	83	137
Other	217	215
Total current liabilities	2,141	2,881
Regulatory and other long-term liabilities:		
Advances for construction	284	270
Deferred income taxes and investment tax credits	2,421	2,113
Regulatory liabilities	1,600	1,770
Operating lease liabilities	80	81
Accrued pension expense	285	388
Other	180	83
Total regulatory and other long-term liabilities	4,850	4,705
Contributions in aid of construction	1,442	1,393
Commitments and contingencies		
Total capitalization and liabilities	\$26,075	\$24,766
	NetPlant	21,084
	Advances	284
	CIAC	1,442
	DefTax	2,421
	ITC	0

CONSOLIDATED BALANCE SHEETS - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
§ in Thousands		
ASSETS		
Utility plant, at original cost (less accumulated depreciation - 2021 - \$159,385,; 2020 - \$147,469)	\$590,431	\$559,561
Current assets		
Cash and cash equivalents	92	28
Accounts receivable (less allowance for doubtful accounts 2021 - \$429; 2020-\$862)	8,863	10,162
Income tax receivable	2,234	629
Unbilled operating revenues	1,080	1,166
Materials and supplies	1,933	1,535
Prepaid property taxes	2,306	1,891
Prepaid expenses and other	2,652	2,208
Total current assets	19,160	17,619
Other assets		
Non-utility property (less accumulated depreciation - 2021- \$919; 2020 - \$865)	3,751	3,796
Other deferred assets	5,097	5,309
Operating lease right of use assets	451	460
Total other assets	9,299	9,565
Regulatory assets, net	6,321	6,473
Total assets	625,211	593,218
Stockholders' equity		
Common stock	9,414	9,357
Preferred stock	0	0
Additional paid-in capital	104,989	103,463
Retained earnings	63,607	56,606
Total stockholders' equity	178,010	169,426
Long-term debt, net of current portion	143,259	142,333
Total stockholders' equity and long-term debt	321,269	311,759
Current liabilities		
Lines of credit	26,703	26,813
Current portion of long-term debt	1,591	1,757
Accounts payable	10,206	6,341
Accrued expenses	4,534	3,414
Overdraft payable	30	105
Accrued interest	917	930
Income taxes payable	0	237
Customer and other deposits	2,273	2,060
Other	1,448	2,067
Total current liabilities	47,702	43,724
Commitments and contingencies (Note 11)		
Deferred credits and other liabilities		
Net advances for construction	4,295	4,578
Operating lease liabilities	440	432
Regulatory liabilities	21,260	21,681
Deferred investment tax credits	456	473
Deferred income taxes	53,133	50,313
Total deferred credits and other liabilities	79,584	77,477
Net contributions in aid of construction	176,656	160,258
Total Liabilities and Stockholders' Equity	\$625,211	\$593,218
	NetPlant	\$590,431
	Advances	4,295
	CIAC	176,656
	DefTax	53,133
	ITC	456
		\$559,561
		4,578
		160,258
		50,313
		473

Consolidated Balance Sheets - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
§ in Thousands		
Utility plant:		
Land	\$45,047	\$45,672
Depreciable plant and equipment	3,899,629	3,645,770
Construction work in progress	222,713	171,414
Intangible assets	29,955	27,567
Total utility plant	4,197,344	3,890,423
Less accumulated depreciation and amortization	-1,350,482	-1,239,865
Net utility plant	2,846,862	2,650,558
Current assets:		
Cash and cash equivalents	78,380	44,555
Receivables:		
Customers, net	60,785	44,025
Regulatory balancing accounts	78,597	96,241
Other, net	18,452	20,331
Unbilled revenue, net	32,760	34,069
Materials and supplies at weighted average cost	9,511	8,831
Taxes, prepaid expenses, and other assets	21,973	17,964
Total current assets	300,458	266,016
Other assets:		
Regulatory assets	285,692	325,376
Goodwill	36,814	31,842
Other	153,445	120,456
Total other assets	475,951	477,674
TOTAL ASSETS	3,623,271	3,394,248
Capitalization:		
Common stock, \$0.01 par value; 68,000 shares authorized, 53,716 and 50,334 outstanding in 2021 and 2020, respectively	537	503
Additional paid-in capital	651,121	448,632
Retained earnings	525,936	472,209
Noncontrolling interests	5,386	0
Total equity	1,182,980	921,344
Long-term debt, net	1,055,794	781,100
Total capitalization	2,238,774	1,702,444
Current liabilities:		
Current maturities of long-term debt, net	5,192	5,127
Short-term borrowings	35,000	370,000
Accounts payable	144,369	131,725
Regulatory balancing accounts	17,547	34,636
Accrued other taxes	5,379	4,477
Accrued interest	6,542	6,178
Other accrued liabilities	42,547	36,563
Total current liabilities	256,576	588,706
Deferred income taxes	298,945	276,032
Regulatory liabilities	180,428	180,718
Pension	92,287	115,581
Total refunds	198,086	195,625
Contributions in aid of construction	285,665	268,050
Other long-term liabilities	72,510	67,092
Commitments and contingencies (Note 15)		
TOTAL CAPITALIZATION AND LIABILITIES	\$3,623,271	\$3,394,248
	NetPlant	2,846,862
	Advances	198,086
	CIAC	285,665
	DefTax	298,945
	ITC	0
		2,650,558
		195,625
		268,050
		276,032
		0
		0

Consolidated Balance Sheets - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
\$ in Thousands		
Assets		
Property, plant and equipment, at cost	\$12,610,376	\$11,620,019
Less: accumulated depreciation	2,358,510	2,107,142
Net property, plant and equipment	10,251,866	9,512,877
Current assets:		
Cash and cash equivalents	10,567	4,827
Accounts receivable, net	141,025	154,775
Unbilled revenues	119,896	118,538
Inventory - materials and supplies	33,756	21,669
Inventory - gas stored	75,804	36,732
Prepayments and other current assets	36,597	38,594
Regulatory assets	20,150	5,085
Total current assets	437,795	380,220
Regulatory assets	1,429,840	1,362,788
Deferred charges and other assets, net	141,955	56,002
Funds restricted for construction activity	1,313	1,268
Goodwill	2,340,815	2,324,547
Operating lease right-of-use assets	48,930	60,334
Intangible assets	5,764	7,241
Total assets	14,658,278	13,705,277
Essential Utilities stockholders' equity:		
Common stock at \$0.50 par value, authorized 600,000,000 shares, issued 248,571,355 and 223,871,284 as of Dec 31, 2021 and Dec 31, 2020	128,050	124,285
Capital in excess of par value	3,705,814	3,379,057
Retained earnings	1,434,201	1,261,862
Treasury stock, at cost, 3,180,887 and 3,112,565 shares as of December 31, 2020 and December 31, 2019	-83,615	-81,327
Total stockholders' equity	5,184,450	4,683,877
Long-term debt, excluding current portion	5,815,211	5,545,890
Less: debt issuance costs	35,707	38,146
Long-term debt, excluding current portion, net of debt issuance costs	5,779,504	5,507,744
Commitments and contingencies (See Note 9)		
Current liabilities:		
Current portion of long-term debt	132,146	84,353
Loans payable	65,000	78,198
Accounts payable	192,932	177,489
Book overdraft	81,722	44,003
Accrued interest	40,815	39,408
Accrued taxes	37,924	37,172
Regulatory liabilities	384	19,866
Other accrued liabilities	124,140	123,384
Total current liabilities	675,063	603,873
Deferred credits and other liabilities:		
Deferred income taxes and investment tax credits	1,406,537	1,258,098
Customers' advances for construction	103,619	99,014
Regulatory liabilities	769,617	773,310
Asset retirement obligations	1,256	1,336
Operating lease liabilities	48,230	55,642
Pension and other postretirement benefit liabilities	50,226	91,896
Other	43,666	56,713
Total deferred credits and other liabilities	2,423,151	2,336,009
Contributions in aid of construction	596,110	573,774
Total liabilities and equity	14,658,278	\$ 13,705,277
	NetPlant	10,251,866
	Advances	103,619
	CIAC	596,110
	DefTax	1,406,537
	ITC	0

CONSOLIDATED BALANCE SHEETS - USD (\$)	Dec. 31, 2021	Dec. 31, 2020	
\$ in Thousands			
UTILITY PLANT:			
Water Production	\$247,286	\$168,080	
Transmission and Distribution	697,200	648,763	
General	95,658	85,056	
Construction Work in Progress	24,947	80,055	
TOTAL	1,065,091	981,954	
Less Accumulated Depreciation	199,723	185,356	
UTILITY PLANT - NET	865,368	796,598	
CURRENT ASSETS:			
Cash and Cash Equivalents	3,533	4,491	
Accounts Receivable, net of allowance for uncollectible accoun	15,311	14,569	
Unbilled Revenues	7,273	7,065	
Materials and Supplies (at average cost)	5,358	5,112	
Prepayments	2,880	2,886	
TOTAL CURRENT ASSETS	34,355	34,123	
Operating Lease Right of Use Asset	4,503	5,209	
Preliminary Survey and Investigation Charges	3,540	5,192	
Regulatory Assets	100,738	118,144	
Restricted Cash		5,913	
Non-utility Assets - Net	11,428	11,207	
Other	83	84	
TOTAL OTHER ASSETS	120,292	145,749	
TOTAL ASSETS	1,020,015	976,470	
CAPITALIZATION:			
Common Stock, No Par Value	221,919	217,451	
Retained Earnings	145,807	128,757	
TOTAL COMMON EQUITY	367,726	346,208	
Preferred Stock	2,084	2,084	
Long-term Debt	306,520	273,244	
TOTAL CAPITALIZATION	676,330	621,536	
CURRENT LIABILITIES:			
Current Portion of Long-term Debt	6,731	7,255	
Notes Payable	13,000	2,000	
Accounts Payable	21,125	30,443	
Accrued Taxes	8,621	10,138	
Accrued Interest	1,986	2,137	
Unearned Revenues and Advanced Service Fees	1,330	1,255	
Other	3,826	3,620	
TOTAL CURRENT LIABILITIES	56,619	56,848	
COMMITMENTS AND CONTINGENT LIABILITIES (Note 4)			
OTHER LIABILITIES:			
Customer Advances for Construction	23,529	23,404	
Lease Obligations	4,367	5,042	
Accumulated Deferred Income Taxes	69,500	61,297	
Employee Benefit Plans	11,290	34,426	
Regulatory Liabilities	49,431	60,792	
Other	1,086	1,135	
TOTAL OTHER LIABILITIES	159,203	186,096	
CONTRIBUTIONS IN AID OF CONSTRUCTION	127,863	111,990	
TOTAL CAPITALIZATION AND LIABILITIES	\$1,020,015	\$976,470	
	NetPlant	865,368	796,598
	Advances	23,529	23,404
	CIAC	127,863	111,990
	DefTax	69,500	61,297
	ITC	0	0

Consolidated Balance Sheets - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
<p>\$ in Thousands</p> <p>Utility plant:</p>		
Land	\$39,004	\$36,845
Depreciable plant and equipment	3,381,908	3,198,060
Construction in progress	176,427	109,976
Intangible assets	36,276	35,167
Property, plant, and equipment, gross	3,633,615	3,380,048
Less accumulated depreciation and amortization	1,136,116	1,045,136
Public utilities, property, plant and equipment, net	2,497,499	2,334,912
Real estate investments and nonutility properties	57,632	58,129
Less accumulated depreciation and amortization	15,951	14,783
Real estate investments, net	41,681	43,346
Cash and cash equivalents:		
Cash	10,908	5,269
Restricted cash	1,211	4,000
Accounts receivable:		
Customers, net of allowances for uncollectible accounts of \$4,600 and \$3,891 in 2021 and 2020, respectively	53,699	46,832
Income tax	2,308	7,041
Other	4,735	4,269
Accrued unbilled utility revenue	44,026	44,950
Current regulatory assets, net	2,629	1,748
Prepaid expenses	9,667	8,097
Other current assets	4,902	5,125
Total current assets	134,085	127,331
Other assets:		
Net regulatory assets, less current portion	151,992	156,482
Investments	15,784	14,367
Goodwill	640,471	628,144
Other	10,883	6,883
Total other assets	819,130	805,876
Total assets	3,492,395	3,311,465
Stockholders' equity:		
Common stock, \$0.001 par value; authorized 70,000,000 shares in 2021 and 2020; issued and outstanding 30,181,348 shares in 2021 and 28,556,605 shares in 2020	30	29
Additional paid-in capital	606,392	510,158
Retained earnings	428,260	408,037
Accumulated other comprehensive (loss)	-163	-1,064
Total stockholders' equity	1,034,519	917,160
Long-term debt, less current portion	1,492,935	1,287,580
Capitalization, long-term debt and equity	2,527,454	2,204,740
Current liabilities:		
Lines of credit	62,996	175,094
Current portion of long-term debt	39,106	76,241
Accrued groundwater extraction charges, purchased water and power	17,200	19,184
Accounts payable	30,391	34,200
Accrued interest	14,174	12,861
Accrued payroll	11,583	14,012
Other current liabilities	27,821	19,203
Total current liabilities	203,271	350,795
Deferred income taxes	200,451	191,415
Advances for construction	130,693	125,027
Contributions in aid of construction	316,479	296,105
Postretirement benefit plans	89,998	121,597
Other noncurrent liabilities	24,049	21,786
Total equity and liabilities	\$3,492,395	\$3,311,465
	NetPlant	2,497,499
	Advances	130,693
	CIAC	316,479
	DefTax	200,451
	ITC	0
		2,334,912
		125,027
		296,105
		191,415
		0

Balance Sheets - USD (\$)	Dec. 31, 2021	Dec. 31, 2020
\$ in Thousands		
ASSETS		
UTILITY PLANT, at original cost	\$485,750	\$438,670
Plant acquisition adjustments	-3,637	-3,707
Accumulated depreciation	-99,204	-91,340
Net utility plant	382,909	343,623
OTHER PHYSICAL PROPERTY, net of accumulated depreciation of \$483 in 2021 and \$458 in 2020	717	742
CURRENT ASSETS:		
Cash and cash equivalents	1	2
Restricted cash	0	5,000
Accounts receivable, net of reserves of \$855 in 2021 and \$655 in 2020	4,634	5,184
Unbilled revenues	2,784	2,847
Recoverable income taxes	894	721
Materials and supplies inventories, at cost	1,917	1,010
Prepaid expenses	1,032	1,526
Total current assets	11,262	16,290
OTHER LONG-TERM ASSETS:		
Prepaid pension cost	14,054	2,209
Note receivable	255	255
Deferred regulatory assets	45,280	39,893
Other assets	4,376	3,945
Total other long-term assets	63,965	46,302
Total Assets	458,853	406,957
COMMON STOCKHOLDERS' EQUITY:		
Common stock, no par value, authorized 46,500,000 shares, issued and outstanding 13,112,948 shares in 2021 and 13,060,817 shares in 2020	88,230	85,935
Retained earnings	64,392	57,317
Total common stockholders' equity	152,622	143,252
PREFERRED STOCK, authorized 500,000 shares, no shares issued	0	0
LONG-TERM DEBT, excluding current portion	138,869	123,573
COMMITMENTS		
CURRENT LIABILITIES:		
Current portion of long-term debt	7,500	0
Accounts payable	6,712	6,540
Dividends payable	2,293	2,192
Accrued compensation and benefits	1,575	1,417
Accrued interest	959	959
Deferred regulatory liabilities	607	525
Other accrued expenses	440	360
Total current liabilities	20,086	11,993
DEFERRED CREDITS:		
Customers' advances for construction	12,820	10,326
Deferred income taxes	49,590	43,538
Deferred employee benefits	4,530	4,793
Deferred regulatory liabilities	36,374	25,444
Other deferred credits	2,086	2,731
Total deferred credits	105,400	86,832
Contributions in aid of construction	41,876	41,307
Total Stockholders' Equity and Liabilities	\$458,853	\$406,957
	NetPlant	383,626
	Advances	12,820
	CIAC	41,876
	DefTax	49,590
	ITC	0
		344,365
		10,326
		41,307
		43,538
		0

Series Id: CUUR0000SA0,CUUS0000SA0
 Not Seasonally Adjusted
Series Title: All items in U.S. city average, all urban consumers, not seasonally adjusted
Area: U.S. city average
Item: All items
Base Period: 1982-84=100

Download:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
2000	168.8	169.8	171.2	171.3	171.5	172.4	172.8	172.8	173.7	174	174.1	174	170.8	173.6
2001	175.1	175.8	176.2	176.9	177.7	178	177.5	177.5	178.3	177.7	177.4	176.7	176.6	177.5
2002	177.1	177.8	178.8	179.8	179.8	179.9	180.1	180.7	181	181.3	181.3	180.9	178.9	180.9
2003	181.7	183.1	184.2	183.8	183.5	183.7	183.9	184.6	185.2	185	184.5	184.3	183.3	184.6
2004	185.2	186.2	187.4	188	189.1	189.7	189.4	189.5	189.9	190.9	191	190.3	187.6	190.2
2005	190.7	191.8	193.3	194.6	194.4	194.5	195.4	196.4	198.8	199.2	197.6	196.8	193.2	197.4
2006	198.3	198.7	199.8	201.5	202.5	202.9	203.5	203.9	202.9	201.8	201.5	201.8	200.6	202.6
2007	202.416	203.499	205.352	206.686	207.949	208.352	208.299	207.917	208.49	208.936	210.177	210.036	205.709	208.976
2008	211.08	211.693	213.528	214.823	216.632	218.815	219.964	219.086	218.783	216.573	212.425	210.228	214.429	216.177
2009	211.143	212.193	212.709	213.24	213.856	215.693	215.351	215.834	215.969	216.177	216.33	215.949	213.139	215.935
2010	216.687	216.741	217.631	218.009	218.178	217.965	218.011	218.312	218.439	218.711	218.803	219.179	217.535	218.576
2011	220.223	221.309	223.467	224.906	225.964	225.722	225.922	226.545	226.889	226.421	226.23	225.672	223.598	226.28
2012	226.665	227.663	229.392	230.085	229.815	229.478	229.104	230.379	231.407	231.317	230.221	229.601	228.85	230.338
2013	230.28	232.166	232.773	232.531	232.945	233.504	233.596	233.877	234.149	233.546	233.069	233.049	232.366	233.548
2014	233.916	234.781	236.293	237.072	237.9	238.343	238.25	237.852	238.031	237.433	236.151	234.812	236.384	237.088
2015	233.707	234.722	236.119	236.599	237.805	238.638	238.654	238.316	237.945	237.838	237.336	236.525	236.265	237.769
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432	238.778	241.237
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524	244.076	246.163
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233	250.089	252.125
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974	254.412	256.903
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.28	260.388	260.229	260.474	257.557	260.065
2021	261.582	263.014	264.877	267.054	269.195	271.696	273.003	273.567	274.31	276.589	277.948	278.802	266.236	275.703
2022	281.148	283.716	287.504	289.109	292.296	296.311	296.276	296.171	296.808	298.012	297.711	296.797	288.347	296.963

Geocode	County	Municipality	2010	2020	Change		Munic. Rank
					Numeric	Percent	
	Pennsylvania	Pennsylvania	12,702,379	13,002,700	300,321	2.4%	
003	Allegheny County	Allegheny County	1,223,348	1,250,578	27,230	2.2%	
00308416	Allegheny County	Brentwood borough	9643	10082	439	4.6%	485

State-Level Census Counts, 1900 to 2020

State	1900	1910	1920	1980	1990	2000	2010	2020
United States	76,212,168	92,228,496	106,021,537	226,545,805	248,709,873	281,421,906	308,745,538	331,449,281
Alabama	1,828,697	2,138,093	2,348,174	3,893,888	4,040,587	4,447,100	4,779,736	5,024,279
Alaska	63,592	64,356	55,036	401,851	550,043	626,932	710,231	733,391
Arizona	122,931	204,354	334,162	2,718,215	3,665,228	5,130,632	6,392,017	7,151,502
Arkansas	1,311,564	1,574,449	1,752,204	2,286,435	2,350,725	2,673,400	2,915,918	3,011,524
California	1,485,053	2,377,549	3,426,861	23,667,902	29,760,021	33,871,648	37,253,956	39,538,223
Colorado	539,700	799,024	939,629	2,889,964	3,294,394	4,301,261	5,029,196	5,773,714
Connecticut	908,420	1,114,756	1,380,631	3,107,576	3,287,116	3,405,565	3,574,097	3,605,944
Delaware	184,735	202,322	223,003	594,338	666,168	783,600	897,934	989,948
District of Columbia	278,718	331,069	437,571	638,333	606,900	572,059	601,723	689,545
Florida	528,542	752,619	968,470	9,746,324	12,937,926	15,982,378	18,801,310	21,538,187
Georgia	2,216,331	2,609,121	2,895,832	5,463,105	6,478,216	8,186,453	9,687,653	10,711,908
Hawaii	154,001	191,874	255,881	964,691	1,108,229	1,211,537	1,360,301	1,455,271
Idaho	161,772	325,594	431,866	943,935	1,006,749	1,293,953	1,567,582	1,839,106
Illinois	4,821,550	5,638,591	6,485,280	11,426,518	11,430,602	12,419,293	12,830,632	12,812,508
Indiana	2,516,462	2,700,876	2,930,390	5,490,224	5,544,159	6,080,485	6,483,802	6,785,528
Iowa	2,231,853	2,224,771	2,404,021	2,913,808	2,776,755	2,926,324	3,046,355	3,190,369
Kansas	1,470,495	1,690,949	1,769,257	2,363,679	2,477,574	2,688,418	2,853,118	2,937,880
Kentucky	2,147,174	2,289,905	2,416,630	3,660,777	3,685,296	4,041,769	4,339,367	4,505,836
Louisiana	1,381,625	1,656,388	1,798,509	4,205,900	4,219,973	4,468,976	4,533,372	4,657,757
Maine	694,466	742,371	768,014	1,124,660	1,227,928	1,274,923	1,328,361	1,362,359
Maryland	1,188,044	1,295,346	1,449,661	4,216,975	4,781,468	5,296,486	5,773,552	6,177,224
Massachusetts	2,805,346	3,366,416	3,852,356	5,737,037	6,016,425	6,349,097	6,547,629	7,029,917
Michigan	2,420,982	2,810,173	3,668,412	9,262,078	9,295,297	9,938,444	9,883,640	10,077,331
Minnesota	1,751,394	2,075,708	2,387,125	4,075,970	4,375,099	4,919,479	5,303,925	5,706,494
Mississippi	1,551,270	1,797,114	1,790,618	2,520,638	2,573,216	2,844,658	2,967,297	2,961,279
Missouri	3,106,665	3,293,335	3,404,055	4,916,686	5,117,073	5,595,211	5,988,927	6,154,913
Montana	243,329	376,053	548,889	786,690	799,065	902,195	989,415	1,084,225
Nebraska	1,066,300	1,192,214	1,296,372	1,569,825	1,578,385	1,711,263	1,826,341	1,961,504
Nevada	42,335	81,875	77,407	800,493	1,201,833	1,998,257	2,700,551	3,104,614
New Hampshire	411,588	430,572	443,083	920,610	1,109,252	1,235,786	1,316,470	1,377,529
New Jersey	1,883,669	2,537,167	3,155,900	7,364,823	7,730,188	8,414,350	8,791,894	9,288,994
New Mexico	195,310	327,301	360,350	1,302,894	1,515,069	1,819,046	2,059,179	2,117,522
New York	7,268,894	9,113,614	10,385,227	17,558,072	17,990,455	18,976,457	19,378,102	20,201,249
North Carolina	1,893,810	2,206,287	2,559,123	5,881,766	6,628,637	8,049,313	9,535,483	10,439,388
North Dakota	319,146	577,056	646,872	652,717	638,800	642,200	672,591	779,094
Ohio	4,157,545	4,767,121	5,759,394	10,797,630	10,847,115	11,353,140	11,536,504	11,799,448
Oklahoma	790,391	1,657,155	2,028,283	3,025,290	3,145,585	3,450,654	3,751,351	3,959,353
Oregon	413,536	672,765	783,389	2,633,105	2,842,321	3,421,399	3,831,074	4,237,256
Pennsylvania	6,302,115	7,665,111	8,720,017	11,863,895	11,881,643	12,281,054	12,702,379	13,002,700
Rhode Island	428,556	542,610	604,397	947,154	1,003,464	1,048,319	1,052,567	1,097,379
South Carolina	1,340,316	1,515,400	1,683,724	3,121,820	3,486,703	4,012,012	4,625,364	5,118,425
South Dakota	401,570	583,888	636,547	690,768	696,004	754,844	814,180	886,667
Tennessee	2,020,616	2,184,789	2,337,885	4,591,120	4,877,185	5,689,283	6,346,105	6,910,840
Texas	3,048,710	3,896,542	4,663,228	14,229,191	16,986,510	20,851,820	25,145,561	29,145,505
Utah	276,749	373,351	449,396	1,461,037	1,722,850	2,233,169	2,763,885	3,271,616
Vermont	343,641	355,956	352,428	511,456	562,758	608,827	625,741	643,077
Virginia	1,854,184	2,061,612	2,309,187	5,346,818	6,187,358	7,078,515	8,001,024	8,631,393
Washington	518,103	1,141,990	1,356,621	4,132,156	4,866,692	5,894,121	6,724,540	7,705,281
West Virginia	958,800	1,221,119	1,463,701	1,949,644	1,793,477	1,808,344	1,852,994	1,793,716
Wisconsin	2,069,042	2,333,860	2,632,067	4,705,767	4,891,769	5,363,675	5,686,986	5,893,718
Wyoming	92,531	145,965	194,402	469,557	453,588	493,782	563,626	576,851

Source: STATS Indiana, using U.S. Census Bureau data

6/17/2021

Business Valuation Resources



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Specify search criteria

Company Name Gannett Fleming
Valuation Date 12/31/2020
Returns Reference - Start Year EARLIEST YEAR
Returns Reference - End Year 2020
Returns Calculation - Mean <input checked="" type="radio"/> Arithmetic <input type="radio"/> Geometric

ERP	ERP	Size Premium	IRP	DoE	WACC	Summary		
			Firms		Portfolio		Size Premium	
Decile	Count	Min size ('000)	Max Size ('000)	Annual Return	Beta	S&P 500	Beta Adjusted	
1 - Largest	199	\$29,025,803	\$1,966,078,882	11.06%	0.92	(0.75%)		

6/17/2021

Business Valuation Resources

2	186	\$13,178,743	\$28,808,073	12.82%	1.04	1.01%
3	210	\$6,743,361	\$13,177,828	13.66%	1.11	1.85%
4	218	\$3,861,858	\$6,710,676	13.67%	1.13	1.86%
5	255	\$2,445,693	\$3,836,536	14.49%	1.17	2.68%
6	246	\$1,591,865	\$2,444,745	14.82%	1.18	3.01%
7	306	\$911,586	\$1,591,765	15.63%	1.26	3.82%
8	365	\$451,955	\$911,103	15.91%	1.31	4.10%
9	412	\$190,019	\$451,800	16.69%	1.34	4.88%
10 - Smallest	569	\$2,194	\$189,831	19.64%	1.40	7.83%
1 through 2	385	\$13,178,743	\$1,966,078,882	11.32%	0.94	(0.48%)
3 through 5	683	\$2,445,693	\$13,177,828	13.80%	1.13	1.99%
6 through 8	917	\$451,955	\$2,444,745	15.27%	1.23	3.46%
9 through 10	981	\$2,194	\$451,800	17.53%	1.35	5.72%
1 through 5	1,068	\$2,445,693	\$1,966,078,882	11.64%	0.96	(0.17%)
6 through 10	1,898	\$2,194	\$2,444,745	15.49%	1.24	3.68%

S&P 500 Annual Return for Period 1928 - 2020 : 11.81%

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	WORKING NOTES											
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	9,942,185	9,942,185	10,074,694	10,208,969	10,345,034	10,482,912	10,622,628	10,764,207	10,902,628	11,041,207
Accumulated Depreciation	-	-	3,016,883	3,016,883	3,155,447	3,291,831	3,432,059	3,574,156	3,718,147	3,864,059	3,994,481	4,130,902
NET PPE	-	-	6,925,302	6,925,302	6,919,247	6,912,138	6,912,975	6,908,756	6,904,481	6,900,148	6,908,147	6,910,305
IOD Total Debt	-	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-

	WORKING NOTES											
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.60%	100%	100%	100%	100%	100%	100%
IOU savings	-	-	-	-	0	501,000	0	0	0	0	0	0
Muni CAPX	-	-	-	-	-	-	-	-	-	-	-	-
0%	-	-	-	-	-	-	-	-	-	-	-	-
CAPX/Prior Yr. GROSS PPE	-	-	-	-	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
Dep on CAPX	-	-	-	-	0.00%	0.80%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
Half Yr Dep	-	-	-	-	0.00%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Dep on CAPX	-	-	-	-	4,008	1,247	1,264	1,281	1,298	1,315	1,333	1,350
Ret on Retirement	-	-	-	-	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Ret on Retirement	-	-	-	-	52,875	75,150	23,384	23,696	24,012	24,332	24,656	24,984
Dep on Retired Property	-	-	-	-	1,202	374	379	384	389	394	399	400
Dep on Prior Yr. GROSS	-	-	-	-	150,075	161,195	163,344	165,521	167,727	169,962	172,217	174,484
Total Dep	-	-	-	-	2,806	159,948	165,080	166,240	166,429	166,647	166,865	167,084

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
NET PPE	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
Rev	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	WORKING NOTES							
	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563
part of OCN	352,500	501,000	155,893	157,971	160,077	162,210	164,372	166,563

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD												
Reported CAPX - from the financials	0	0	579,500	260,806	included in OCN 352,500	= to DepX 501,000						
GROSS Property, plant and equipment	-	-	-	-	9,942,185							
Accumulated Depreciation	-	-	-	-	3,016,883							
NET PPE	-	-	-	-	6,925,302							
Total Debt	-	-	-	-	-							
Net Equity	-	-	-	-	-							
Investor Provided Capital	-	-	-	-	-							
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.60%							
Depreciation Expense	-	-	-	-	-	159,455.00	moved item from 2021 to 2022					
CAPX												

	Assets	Per Books	Difference
	9,942,185	-	-
	3,016,883	-	-
	6,925,302	-	-
	159,455	-	69,255,302

	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD							
XYZ's LTCP	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
CAPX	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior
dummy
dummy
dummy

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior
No Additional O&M.
dummy
dummy
dummy

Additional OpEx note
No Additional O&M.

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
GROSS Property, plant and equipment	10,907,673	11,053,050	11,200,365	11,349,644	11,500,912	11,654,196	11,809,523	11,966,920	12,126,415	12,288,036	12,451,811	12,617,768	12,785,938	12,956,349
Accumulated Depreciation	4,011,914	4,161,759	4,313,561	4,467,407	4,623,305	4,781,279	4,941,359	5,103,572	5,267,947	5,434,514	5,603,300	5,774,335	5,947,651	6,123,275
NET PPE	6,895,759	6,891,311	6,886,804	6,882,237	6,877,607	6,872,917	6,868,164	6,863,348	6,858,468	6,853,522	6,848,511	6,843,433	6,838,287	6,833,074

IOD	Total Debt	Net Equity	Investor Provided Capital

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation / GROSS PPE	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%
	1,687,783	1,710,032	1,731,312	1,752,622	1,773,962	1,795,334	1,816,738	1,838,173	1,859,641	1,881,142	1,902,676	1,924,244	1,945,847	1,967,484
	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
	1,350	1,368	1,386	1,405	1,424	1,443	1,462	1,481	1,501	1,521	1,541	1,562	1,583	1,604
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	25,317	25,655	25,997	26,343	26,694	27,050	27,411	27,776	28,146	28,521	28,901	29,287	29,677	30,073
	405	410	416	421	427	433	439	444	450	456	462	469	475	481
	172,227	174,823	176,849	179,206	181,594	184,015	186,467	188,952	191,471	194,023	196,609	199,229	201,884	204,575
	173,172	175,480	177,819	180,189	182,591	185,025	187,491	189,989	192,521	195,087	197,687	200,322	202,992	205,698

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation Expense	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	16	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	4,085	4,100	4,115	4,130	4,145	4,160	4,175	4,190	4,208	4,223	4,239	4,254	4,270	4,286
	4,041,559	4,218,773	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
	989.36	1,028.94	1,028.94	1,028.94	1,080.38	1,080.38	1,123.60	1,123.60	1,168.54	1,168.54	1,215.29	1,215.29	1,263.90	1,263.90
	989.37	1,028.97	1,029.01	1,029.07	1,080.59	1,080.68	1,124.01	1,124.13	1,168.96	1,168.84	1,215.49	1,215.39	1,263.93	1,263.87
	4,034,109	4,049,036	4,236,578	4,242,217	4,257,913	4,487,350	4,503,953	4,701,443	4,718,838	4,925,750	4,943,974	5,160,759	5,179,853	5,406,979

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Sewer Rental Charges	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
EDUs	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	16	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	4,085	4,100	4,115	4,131	4,146	4,161	4,177	4,192	4,208	4,223	4,239	4,254	4,270	4,286
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	989.36	1,028.94	1,028.94	1,028.94	1,080.38	1,080.38	1,123.60	1,123.60	1,168.54	1,168.54	1,215.29	1,215.29	1,263.90	1,263.90
	989.37	1,028.97	1,029.01	1,029.07	1,080.59	1,080.68	1,124.01	1,124.13	1,168.96	1,168.84	1,215.49	1,215.39	1,263.93	1,263.87
	4,034,109	4,049,036	4,236,578	4,242,217	4,257,913	4,487,350	4,503,953	4,701,443	4,718,838	4,925,750	4,943,974	5,160,759	5,179,853	5,406,979

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	4.0%	4.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
\$	1,030,84	1,030,84	1,030,84	1,082,38	1,082,38	1,125,67	1,125,67	1,170,70	1,170,70	1,217,53	1,217,53	1,266,23	1,266,23	1,316,88
	39,65	-	-	51,54	-	43,30	-	45,03	-	46,83	-	48,70	-	50,65
	7,449	7,477	7,805	7,834	7,863	8,286	8,317	8,682	8,714	9,096	9,129	9,530	9,565	9,984
	4,041,559	4,218,773	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
	161,662	-	-	212,502	-	179,825	-	188,405	-	197,394	-	206,812	-	216,679
														3,96%
	9,881	9,875	9,868	9,862	9,855	9,849	9,842	9,835	9,828	9,821	9,814	9,807	9,800	9,792
	22,923	23,928	24,016	24,105	25,403	25,497	26,615	26,713	27,884	27,987	29,214	29,322	30,607	30,720
	32,804	33,803	33,884	33,967	35,238	35,346	36,457	36,548	37,712	37,808	39,028	39,129	40,407	40,512

BRENTWOOD
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses
 Wages
 Professional Services
 Eliminated Exp

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD														
Reported CAPX - from the financials	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS Property, plant and equipment														
Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor Provided Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX														
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	9,942,185	9,942,185	10,074,694	10,208,969	10,345,034	10,482,912	10,622,628	10,764,207	10,902,628	11,042,147
Accumulated Depreciation	-	-	3,016,883	3,016,883	3,155,447	3,291,831	3,432,059	3,574,156	3,718,147	3,864,059	4,011,968	4,161,883
NET PPE	-	-	6,925,302	6,925,302	6,919,247	6,917,138	6,912,975	6,908,756	6,904,481	6,900,148	6,890,660	6,880,264
IOD Total Debt	-	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028
IOU savings	0	501,000	100%	0	100%	0	100%	0
Muni CAPX	0%	0%	0%	0%	0%	0%	0%	0%
CAPX/Prior Yr. GROSS PPE	352,500	501,000	1.57%	155,893	157,971	162,210	164,372	166,563
Dep on CAPX	0.00%	0.00%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
Half Yr Dep	0.00%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Dep on CAPX	-	4,008	1,247	1,281	1,298	1,315	1,333	1,351
Ret on Retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Ret on Retirement	52,875	75,150	23,384	23,696	24,012	24,332	24,656	24,984
Dep on Retired Property	-	1,202	374	379	384	389	394	400
Dep on Prior Yr. GROSS	-	159,075	161,195	163,344	165,521	167,727	169,962	172,219
Total Dep	-	2,806	159,948	163,080	165,240	167,429	169,647	171,892

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
NET PPE	352,500	501,000	1,57%	155,893	157,971	162,210	164,372	166,563
Rev	-	-	-	-	-	-	-	-
PURTA	0.001527765							
Reg Assessment Fee	0.00662534							

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	0	0	0	0	0	0	0	0
FIX CIP	0	0	0	0	0	0	0	0
CIP	0	0	0	0	0	0	0	0
part of OCN = to Dep X	352,500	501,000	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	0	0	0	0	0	0	0	0
Sewer Rental Charges	0	0	0	0	0	0	0	0
EDUs	0	0	0	0	0	0	0	0
Customer Growth	0	0	0	0	0	0	0	0
Delivered to Customer	0	0	0	0	0	0	0	0
Customers	0	0	0	0	0	0	0	0
Total Revenue (Less TAP)	0	0	0	0	0	0	0	0
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	0	0	0	0	0	0	0	0
Customer Growth	0	0	0	0	0	0	0	0
Delivered to Customer	0	0	0	0	0	0	0	0
Customers	0	0	0	0	0	0	0	0
Total Revenue (Less TAP)	0	0	0	0	0	0	0	0
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	0	0	0	0	0	0	0	0
Customer Growth	0	0	0	0	0	0	0	0
Delivered to Customer	0	0	0	0	0	0	0	0
Customers	0	0	0	0	0	0	0	0
Total Revenue (Less TAP)	0	0	0	0	0	0	0	0
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	0	0	0	0	0	0	0	0
Customer Growth	0	0	0	0	0	0	0	0
Delivered to Customer	0	0	0	0	0	0	0	0
Customers	0	0	0	0	0	0	0	0
Total Revenue (Less TAP)	0	0	0	0	0	0	0	0
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD												
Reported CAPX - from the financials	0	0	579,500	260,806	included in OCN 352,500	= to DepX 501,000						
GROSS Property, plant and equipment	-	-	-	-	9,942,185							
Accumulated Depreciation	-	-	-	-	3,016,883							
NET PPE	-	-	-	-	6,925,302							
Total Debt	-	-	-	-	-							
Net Equity	-	-	-	-	-							
Investor Provided Capital	-	-	-	-	-							

	Assets	Per Books	Difference
	9,942,185	-	-
	3,016,883	-	-
	6,925,302	-	6,925,302
	159,455	-	-

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.60%							
Depreciation Expense	-	-	-	-	-	159,455.00	moved item from 2021 to 2022	0	0	0	0	0

	2022	2023	2024	2025	2026	2027	2028
CAPX	0	0	0	0	0	0	0

	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD							
XYZ's LTCP	0	0	0	0	0	0	0
State of Good Repair	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
CAPX	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
State of Good Repair	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior dummy

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior dummy

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior dummy

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior dummy

OpEx

State of Good Repair

dummy

dummy

dummy

dummy

CAPX note

State of Good Repair

dummy

dummy

dummy

dummy

Additional OpEx note

No Additional O&M.

dummy

dummy

dummy

No Additional O&M.

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
GROSS Property, plant and equipment	10,907,673	11,053,050	11,200,365	11,349,644	11,500,912	11,654,196	11,809,523	11,966,920	12,126,415	12,288,036	12,451,811	12,617,768	12,785,938	12,956,349
Accumulated Depreciation	4,011,914	4,161,759	4,313,561	4,467,407	4,623,305	4,781,279	4,941,359	5,103,572	5,267,947	5,434,514	5,603,300	5,774,335	5,947,651	6,123,275
NET PPE	6,895,759	6,891,311	6,886,804	6,882,237	6,877,607	6,872,917	6,868,164	6,863,348	6,858,468	6,853,522	6,848,511	6,843,433	6,838,287	6,833,074

IOD	Total Debt	Net Equity	Investor Provided Capital

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation / GROSS PPE	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%	1.57%
	1,687,783	1,710,032	1,731,312	1,752,622	1,773,962	1,795,334	1,816,738	1,838,173	1,859,641	1,881,142	1,902,676	1,924,244	1,945,847	1,967,484
	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
	1,350	1,368	1,386	1,405	1,424	1,443	1,462	1,481	1,501	1,521	1,541	1,562	1,583	1,604
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	25,317	25,655	25,997	26,343	26,694	27,041	27,391	27,744	28,091	28,442	28,791	29,146	29,507	30,073
	405	410	416	421	427	433	439	444	450	456	462	469	475	481
	172,227	174,823	176,849	179,206	181,594	184,015	186,467	188,952	191,471	194,033	196,609	199,229	201,884	204,575
	173,172	175,480	177,819	180,189	182,591	185,025	187,491	189,989	192,521	195,087	197,687	200,322	202,992	205,698

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation Expense	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	16	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	4,085	4,100	4,115	4,130	4,145	4,160	4,175	4,190	4,208	4,223	4,239	4,254	4,270	4,286
	4,041,559	4,218,773	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
	989.36	1,028.94	1,028.94	1,028.94	1,080.38	1,080.38	1,123.60	1,123.60	1,168.54	1,168.54	1,215.29	1,215.29	1,263.90	1,263.90
	989.37	1,028.97	1,029.01	1,029.07	1,080.59	1,080.68	1,124.01	1,124.13	1,168.96	1,168.84	1,215.49	1,215.39	1,263.93	1,263.87
	4,034,109	4,049,036	4,236,578	4,242,217	4,257,913	4,487,350	4,503,953	4,701,443	4,718,838	4,925,750	4,943,974	5,160,759	5,179,853	5,406,979

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Sewer Rental Charges	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
EDUs	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	16	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	16	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	4,085	4,100	4,115	4,130	4,145	4,160	4,175	4,190	4,208	4,223	4,239	4,254	4,270	4,286
	4,041,559	4,218,773	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
	989.36	1,028.94	1,028.94	1,028.94	1,080.38	1,080.38	1,123.60	1,123.60	1,168.54	1,168.54	1,215.29	1,215.29	1,263.90	1,263.90
	989.37	1,028.97	1,029.01	1,029.07	1,080.59	1,080.68	1,124.01	1,124.13	1,168.96	1,168.84	1,215.49	1,215.39	1,263.93	1,263.87
	4,034,109	4,049,036	4,236,578	4,242,217	4,257,913	4,487,350	4,503,953	4,701,443	4,718,838	4,925,750	4,943,974	5,160,759	5,179,853	5,406,979

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	4.0%	4.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
\$	1,030,84	1,030,84	1,030,84	1,082,38	1,082,38	1,125,67	1,125,67	1,170,70	1,170,70	1,217,53	1,217,53	1,266,23	1,266,23	1,316,88
	39,65	-	-	51,54	-	43,30	-	45,03	-	46,83	-	48,70	-	50,65
	7,449	7,477	7,805	7,834	7,863	8,286	8,317	8,682	8,714	9,096	9,129	9,530	9,565	9,984
	4,041,559	4,218,773	4,234,383	4,250,050	4,479,064	4,495,636	4,692,761	4,710,124	4,916,654	4,934,845	5,151,229	5,170,288	5,396,995	5,416,964
	161,662	-	-	212,502	-	179,825	-	188,405	-	197,394	-	206,812	-	216,679
														3,96%
	9,881	9,875	9,868	9,862	9,855	9,849	9,842	9,835	9,828	9,821	9,814	9,807	9,800	9,792
	22,923	23,928	24,016	24,105	25,403	25,497	26,615	26,713	27,884	27,987	29,214	29,322	30,607	30,720
	32,804	33,803	33,884	33,967	35,238	35,346	36,457	36,548	37,712	37,808	39,028	39,129	40,407	40,512

BRENTWOOD
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses
 Wages
 Professional Services
 Eliminated Exp

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD														
Reported CAPX - from the financials	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS Property, plant and equipment														
Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor Provided Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX														
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	9,942,185	9,942,185	10,074,694	10,208,969	10,345,034	10,482,912	10,622,628	10,764,207	10,902,628	11,042,185
Accumulated Depreciation	-	-	3,016,883	3,016,883	3,155,447	3,291,831	3,432,059	3,574,156	3,718,147	3,864,059	4,012,628	4,162,185
NET PPE	-	-	6,925,302	6,925,302	6,919,247	6,917,138	6,912,975	6,908,756	6,904,481	6,900,148	6,890,000	6,880,000
IOD Total Debt	-	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028
IOU savings	0	501,000	100%	0	100%	0	100%	0
Muni CAPX	0%							
CAPX/Prior Yr. GROSS PPE	352,500	501,000	1.57%	155,893	157,971	162,210	164,372	166,563
Dep on CAPX	0.00%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%	1.60%
Half Yr Dep	0.00%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Dep on CAPX	-	4,008	1,247	1,281	1,298	1,315	1,333	1,351
Ret on Retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Ret on Retirement	52,875	75,150	23,384	23,696	24,012	24,332	24,656	24,984
Dep on Retired Property	-	1,202	374	379	384	389	394	400
Dep on Prior Yr. GROSS	-	159,075	161,195	163,344	165,521	167,727	169,962	172,210
Total Dep	-	2,806	159,948	163,080	165,240	167,429	169,647	171,899

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
NET PPE	352,500	501,000						
Rev								

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000						

	2021	2022	2023	2024	2025	2026	2027	2028
Sewer Rental Charges	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
EDUs	0	0	3,980	3,980	3,980	3,980	3,980	3,980
#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

	2021	2022	2023	2024	2025	2026	2027	2028
Customer Growth	1742000	1742000	1742000	1742000	1742000	1742000	1742000	1742000
Delivered to Customer	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
Customers	3,980	3,980	3,980	3,980	3,980	3,980	3,980	3,980
Total Revenue (Less TAP)	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883
avg CUST rev	949.17	976.34	1,038.41	1,038.41	1,038.41	1,038.41	1,038.41	1,038.41
avg CUST flow	-	-	-	-	-	-	-	-
avg EDU rev	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
avg EDU flow	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rev Calculated								

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000						

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
part of OCN	352,500	501,000						

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD												
Reported CAPX - from the financials	0	0	579,500	260,806	included in OCN 352,500	= to DepX 501,000						
GROSS Property, plant and equipment	-	-	-	-	9,942,185							
Accumulated Depreciation	-	-	-	-	3,016,883							
NET PPE	-	-	-	-	6,925,302							
Total Debt	-	-	-	-	-							
Net Equity	-	-	-	-	-							
Investor Provided Capital	-	-	-	-	-							
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.60%							
Depreciation Expense	-	-	-	-	-	159,455.00	moved item from 2021 to 2022					
CAPX	0	0	0	0	0	0	0	0	0	0	0	0

	Assets	Per Books	Difference
	9,942,185	-	-
	3,016,883	-	-
	6,925,302	-	-
	159,455	-	69,255,302

	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD							
XYZ's LTCP	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
CAPX	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
CAPX note	0	0	0	0	0	0	0
State of Good Repair dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
Additional OpEx note	0	0	0	0	0	0	0

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior
dummy
dummy
dummy
Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.57% of prior
No Additional O&M.
dummy
dummy
dummy
No Additional O&M.

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
GROSS Property, plant and equipment	10,907,673	11,053,050	11,200,365	11,349,644	11,500,912	11,654,196	11,809,523	11,966,920	12,126,415	12,288,036	12,451,811	12,617,768	12,785,938	12,956,349
Accumulated Depreciation	4,011,914	4,161,739	4,313,561	4,467,407	4,623,305	4,781,279	4,941,359	5,103,572	5,267,947	5,434,514	5,603,300	5,774,335	5,947,651	6,123,275
NET PPE	6,895,759	6,891,311	6,886,804	6,882,237	6,877,607	6,872,917	6,868,164	6,863,348	6,858,468	6,853,522	6,848,511	6,843,433	6,838,287	6,833,074

IOD	Total Debt	Net Equity	Investor Provided Capital

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation / GROSS PPE	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	172,227	174,823	176,849	179,206	181,594	184,015	186,467	188,952	191,471	194,033	196,609	199,229	201,884	204,575
	173,172	175,480	177,819	180,189	182,591	185,025	187,491	189,989	192,521	195,087	197,687	200,322	202,992	205,698

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation Expense	173,172	175,480	177,819	180,189	182,591	185,025	187,491	189,989	192,521	195,087	197,687	200,322	202,992	205,698

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Sewer Rental Charges	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
EDUs	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	15	16	16	16	16	16

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	15	16	16	16	16	16	16	16	16	16	16	16	16	16
	4,085	4,100	4,115	4,130	4,145	4,160	4,175	4,190	4,206	4,222	4,238	4,254	4,270	4,286
	105.00%	4,702,867	4,861,876	4,879,865	5,069,348	5,088,104	5,261,138	5,279,601	5,484,605	5,504,898	5,718,650	5,739,809	5,962,683	5,984,745
	1,147.01	1,147.01	1,181.42	1,181.42	1,222.77	1,222.77	1,259.45	1,259.45	1,303.53	1,303.53	1,349.15	1,349.15	1,396.37	1,396.37
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,147.01	1,147.04	1,181.50	1,181.57	1,223.00	1,223.10	1,259.91	1,260.05	1,304.00	1,303.86	1,349.27	1,349.37	1,396.41	1,396.35
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4,454,185	4,694,199	4,711,567	4,870,870	4,888,893	5,078,726	5,097,517	5,269,869	5,289,368	5,494,752	5,515,082	5,729,230	5,750,428	5,973,714

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	15	16	16	16	16	16	16	16	16	16	16	16	16	16
	4,085	4,100	4,115	4,130	4,145	4,160	4,175	4,190	4,206	4,222	4,238	4,254	4,270	4,286
	105.00%	4,702,867	4,861,876	4,879,865	5,069,348	5,088,104	5,261,138	5,279,601	5,484,605	5,504,898	5,718,650	5,739,809	5,962,683	5,984,745
	1,147.01	1,147.01	1,181.42	1,181.42	1,222.77	1,222.77	1,259.45	1,259.45	1,303.53	1,303.53	1,349.15	1,349.15	1,396.37	1,396.37
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,147.01	1,147.04	1,181.50	1,181.57	1,223.00	1,223.10	1,259.91	1,260.05	1,304.00	1,303.86	1,349.27	1,349.37	1,396.41	1,396.35
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4,454,185	4,694,199	4,711,567	4,870,870	4,888,893	5,078,726	5,097,517	5,269,869	5,289,368	5,494,752	5,515,082	5,729,230	5,750,428	5,973,714

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	3.5%	3.0%	3.5%	3.5%	3.0%	3.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
\$	1,149.12	1,183.60	1,183.60	1,225.02	1,225.02	1,261.77	1,261.77	1,305.94	1,305.94	1,351.64	1,351.64	1,398.95	1,398.95	1,447.92
\$	34.47	8,700	8,700	8,994	9,028	9,378	9,413	9,731	9,767	10,147	10,184	10,580	10,619	11,031
	8,225	8,668	8,700	8,994	9,028	9,378	9,413	9,731	9,767	10,147	10,184	10,580	10,619	11,031
	4,685,531	4,702,867	4,861,876	4,879,865	5,069,348	5,088,104	5,260,138	5,279,601	5,484,605	5,504,898	5,718,650	5,739,809	5,962,683	5,984,745
	-	141,086	-	170,795	-	152,643	-	184,786	-	192,671	-	200,893	-	209,466
	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9,881	9,875	9,868	9,862	9,855	9,849	9,842	9,835	9,828	9,821	9,814	9,807	9,800	9,792
	26,574	26,672	27,573	27,675	28,750	28,856	29,831	29,942	31,104	31,219	32,431	32,550	33,814	33,939
	36,455	36,547	37,441	37,537	38,605	38,705	39,673	39,777	40,932	41,040	42,245	42,357	43,614	43,731

BRENTWOOD
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses
 Wages
 Professional Services
 Eliminated Exp

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD														
Reported CAPX - from the financials	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS Property, plant and equipment														
Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor Provided Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX														
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-	19,856,725	19,856,725	20,104,835	20,356,045	20,610,394	20,864,725	21,118,665	21,372,667	21,626,667
Accumulated Depreciation	-	-	-	19,856,725	19,856,725	19,849,236	19,841,652	19,833,975	19,826,202	19,818,330	19,810,361	19,802,392
NET PPE	-	-	-	-	-	255,599	514,393	776,419	1,041,719	1,310,335	1,562,306	1,824,275
Total Debt	-	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028
IOU savings	0	501,000	100%	0	0	0	0	0
Muni CAPX	0%	0%	0%	0%	0%	0%	0%	0%
CAPX/Prior Yr. GROSS PPE	352,500	501,000	1.47%	501,000	501,000	501,000	501,000	501,000
Dep on CAPX	0.00%	0.00%	1.50%	1.50%	1.47%	1.47%	1.47%	1.47%
Half Yr Dep	0.00%	0.00%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%
Ret on CAPX	3,758	2,189	15.0%	2,217	2,244	2,272	2,301	2,329
Ret on Retirement	52,875	75,150	15.0%	75,150	75,150	75,150	75,150	75,150
Dep on Retired Property	1,127	657	1.17%	657	657	657	657	657
Dep on Prior Yr. GROSS	297,851	303,125	303,125	303,125	303,125	303,125	303,125	303,125
Total Dep	297,851	303,125	303,125	303,125	303,125	303,125	303,125	303,125

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
NET PPE	352,500	501,000	100%	0	0	0	0	0
Rev	352,500	501,000	100%	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN = to DepX	352,500	501,000	100%	0	0	0	0	0
part of OCN	-	-	-	-	-	-	-	-
NET PPE	352,500	501,000	100%	0	0	0	0	0
Rev	352,500	501,000	100%	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
Sewer Rental Charges	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
EDUs	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Customer Growth	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Delivered to Customer	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Customers	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Total Revenue (Less TAP)	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
avg CUST rev	949.17	945.23	943.45	941.69	941.69	941.69	941.69	941.69
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	0	0	4,132,883	3,776,165	3,783,228	3,797,380	3,797,380	3,797,380

	2021	2022	2023	2024	2025	2026	2027	2028
Customer Growth	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Delivered to Customer	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Customers	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Total Revenue (Less TAP)	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
avg CUST rev	949.17	945.23	943.45	941.69	941.69	941.69	941.69	941.69
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	0	0	4,132,883	3,776,165	3,783,228	3,797,380	3,797,380	3,797,380

	2021	2022	2023	2024	2025	2026	2027	2028
Customer Growth	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Delivered to Customer	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Customers	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Total Revenue (Less TAP)	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
avg CUST rev	949.17	945.23	943.45	941.69	941.69	941.69	941.69	941.69
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	0	0	4,132,883	3,776,165	3,783,228	3,797,380	3,797,380	3,797,380

	2021	2022	2023	2024	2025	2026	2027	2028
Customer Growth	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Delivered to Customer	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Customers	0	0	3,980	3,980	3,980	3,980	3,980	3,980
Total Revenue (Less TAP)	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
avg CUST rev	949.17	945.23	943.45	941.69	941.69	941.69	941.69	941.69
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	0	0	4,132,883	3,776,165	3,783,228	3,797,380	3,797,380	3,797,380

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
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	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD												
Reported CAPX - from the financials	0	0	579,500	260,806	included in OCN 352,500	= to DepX 501,000						
GROSS Property, plant and equipment	-	-	-	-	19,856,725							
Accumulated Depreciation	-	-	-	-	19,856,725							
NET PPE	-	-	-	-	19,856,725							
Total Debt	-	-	-	-	-							
Net Equity	-	-	-	-	-							
Investor Provided Capital	-	-	-	-	-							
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.50%							
Depreciation Expense	-	-	-	-	-	297,851.00	moved item from 2021 to 2022					
CAPX												

Assets	Per Books	Difference
19,856,725	-	-
19,856,725	-	19,856,725
297,851		

	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD							
XYZ'S LTCP	0	0	0	0	0	0	0
State of Good Repair	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
CAPX	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
State of Good Repair	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
dummy	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.47% of prior
dummy
dummy
dummy

Capital Expenditures - Pre-2023 based on financials/budget. Post-2022 years are estimates based on 1.47% of prior
No Additional O&M.
dummy
dummy
dummy
No Additional O&M.

Additional OpEx note

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
GROSS Property, plant and equipment	21,930,610	22,004,633	22,482,080	22,762,994	23,047,418	23,335,395	23,626,970	24,221,097	24,523,739	24,830,163	25,140,416	25,454,545	25,769,799	26,085,053
Accumulated Depreciation	1,857,676	2,136,488	2,418,782	2,704,604	2,993,998	3,283,678	3,584,055	4,188,186	4,496,117	4,807,894	5,123,568	5,443,187	5,766,799	6,090,411
NET PPE	19,802,292	19,794,122	19,785,851	19,777,476	19,768,996	19,760,410	19,742,915	19,734,003	19,724,980	19,715,845	19,706,595	19,697,229	19,687,746	19,678,262

IOD	Total Debt	Net Equity	Investor Provided Capital

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation / GROSS PPE	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%
Depreciation / BRENTWOOD	322,541	326,571	330,652	334,783	338,967	343,202	347,490	351,832	356,228	360,679	365,185	369,749	374,369	379,047

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation Expense	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Sewer Rental Charges	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
EDUs	15	15	15	15	15	15	15	15	15	16	16	16	16	16

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56
BRENTWOOD	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56	1,186.56

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
1,188.75	1,248.19	1,248.19	1,248.19	1,298.11	1,298.11	1,298.11	1,350.04	1,350.04	1,404.04	1,404.04	1,446.16	1,446.16	1,492.44	1,492.44
\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
8,934	8,967	9,000	9,485	9,520	9,556	9,975	10,012	10,049	10,489	10,528	10,990	11,030	11,403	11,403
4,847,101	4,865,035	5,127,188	5,146,158	5,165,199	5,391,683	5,411,632	5,431,655	5,669,822	5,690,801	5,940,331	5,962,310	6,163,902	6,186,708	6,186,708
	243,252			206,608			217,266		227,632		178,869		197,975	197,975
											3.46%			3.52%
28,368	28,357	28,345	28,333	28,321	28,309	28,297	28,284	28,272	28,259	28,246	28,233	28,220	28,206	28,206
27,490	27,591	29,078	29,185	29,293	30,577	30,690	30,804	32,154	32,273	33,687	33,812	34,955	35,084	35,084
55,858	55,948	57,423	57,518	57,614	58,886	58,987	59,088	60,426	60,532	61,933	62,045	63,175	63,290	63,290

BRENTWOOD
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses
 Wages
 Professional Services
 Eliminated Exp

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD														
Reported CAPX - from the financials	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS Property, plant and equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor Provided Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX	0	0	0	0	0	0	0	0	0	0	0	0	0	0

year-end GROSS Property, plant and equipment.

year-end GROSS Property, plant and equipment.

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GROSS Property, plant and equipment	-	-	-	19,856,725	19,856,725	20,104,835	20,356,045	20,610,394	20,867,921	21,128,665	21,392,667	
Accumulated Depreciation	-	-	-	19,856,725	19,856,725	19,849,236	19,841,652	19,833,975	19,826,202	19,818,330	19,810,361	
NET PPE	-	-	-	-	-	-	-	-	-	-	-	-
Total Debt	-	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028
Depreciation / GROSS PPE	#DIV/0!	0.00%	0.00%	0.00%	1.50%	0	0	0
IOU savings	0	501,000	100%	100%	100%	100%	100%	100%
Muni CAPX	0%	0%	0%	0%	0%	0%	0%	0%
CAPX/Prior Yr. GROSS PPE	352,500	501,000	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%
Dep on CAPX	0.00%	0.00%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Half Yr Dep	0.00%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%
Ret on CAPX	3,758	2,189	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Ret on retirement	52,875	75,150	1.127	1.127	1.127	1.127	1.127	1.127
Dep on Retired Property	309,156	309,156	309,156	309,156	309,156	309,156	309,156	309,156
Dep on Prior Yr. GROSS	313,019	313,019	313,019	313,019	313,019	313,019	313,019	313,019
Total Dep	316,930	316,930	316,930	316,930	316,930	316,930	316,930	316,930

	2021	2022	2023	2024	2025	2026	2027	2028
part of OCN	-	-	-	-	-	-	-	-
NET PPE	0.001527765	0.001527765	0.001527765	0.001527765	0.001527765	0.001527765	0.001527765	0.001527765
Rev	0.00662534	0.00662534	0.00662534	0.00662534	0.00662534	0.00662534	0.00662534	0.00662534

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	part of OCN	part of OCN	part of OCN	part of OCN	part of OCN	part of OCN	part of OCN	part of OCN
FIX CIP	352,500	501,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
CIP	352,500	501,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000

	2021	2022	2023	2024	2025	2026	2027	2028
Sewer Rental Charges	0	0	3,777,696	3,885,852	4,132,883	4,132,883	4,132,883	4,132,883
EDUs	0	0	3,980	3,980	3,980	3,980	3,980	3,980
#DIV/0!	0	0	0	0	0	0	0	0
#DIV/0!	0	0	0	0	0	0	0	0
#DIV/0!	0	0	0	0	0	0	0	0
#DIV/0!	0	0	0	0	0	0	0	0

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	1742000	1742000	1742000	1742000	1742000	1742000	1742000	1742000
Customer Growth	15.08	15.08	15.08	15.08	15.08	15.08	15.08	15.08
Delivered to Customer	3,980	3,980	3,980	3,980	3,980	3,980	3,980	3,980
Customers	3,777,696	3,777,696	3,777,696	3,777,696	3,777,696	3,777,696	3,777,696	3,777,696
Total Revenue (Less TAP)	949,17	949,17	949,17	949,17	949,17	949,17	949,17	949,17
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883	4,132,883

	2021	2022	2023	2024	2025	2026	2027	2028
BRENTWOOD	71,250,000	71,250,000	71,250,000	71,250,000	71,250,000	71,250,000	71,250,000	71,250,000
Customer Growth	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
Delivered to Customer	4,055	4,055	4,055	4,055	4,055	4,055	4,055	4,055
Customers	6,109,753	6,109,753	6,109,753	6,109,753	6,109,753	6,109,753	6,109,753	6,109,753
Total Revenue (Less TAP)	1,506,72	1,506,72	1,506,72	1,506,72	1,506,72	1,506,72	1,506,72	1,506,72
avg CUST rev	0	0	0	0	0	0	0	0
avg CUST flow	0	0	0	0	0	0	0	0
avg EDU rev	0	0	0	0	0	0	0	0
avg EDU flow	0	0	0	0	0	0	0	0
Rev Calculated	6,098,410	6,098,410	6,098,410	6,098,410	6,098,410	6,098,410	6,098,410	6,098,410

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
GROSS Property, plant and equipment	21,659,968	21,930,610	22,204,633	22,482,080	22,762,994	23,047,418	23,335,395	23,626,970	23,922,189	24,221,097	24,523,739	24,830,163	25,140,416	25,454,545
Accumulated Depreciation	1,857,676	2,136,488	2,418,782	2,704,604	2,993,998	3,287,008	3,583,678	3,884,055	4,188,186	4,496,117	4,807,894	5,123,568	5,443,187	5,766,799
NET PPE	19,802,292	19,794,122	19,785,851	19,777,476	19,768,996	19,760,410	19,751,717	19,742,915	19,734,003	19,724,980	19,715,845	19,706,595	19,697,229	19,687,746

IOD	Total Debt	Net Equity	Investor Provided Capital

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation / GROSS PPE	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%	1.47%
	314,472	318,402	322,380	326,408	330,487	334,616	338,797	343,030	347,316	351,656	356,050	360,499	365,003	369,564
	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%	0.75%
	2,359	2,388	2,418	2,448	2,479	2,510	2,541	2,573	2,605	2,637	2,670	2,704	2,738	2,772
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	47,171	47,760	48,357	48,961	49,573	50,192	50,820	51,455	52,097	52,748	53,408	54,075	54,750	55,435
	708	716	725	734	744	753	762	772	781	791	801	811	821	832
	320,890	324,900	328,959	333,069	337,231	341,445	345,711	350,032	354,405	358,833	363,316	367,856	372,452	377,106
	322,541	326,571	330,652	334,783	338,967	343,202	347,490	351,832	356,228	360,679	365,185	369,749	374,369	379,047

	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Depreciation Expense	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	15	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	15	16	16	16	16	16	16	16	16	16	16	16	16	16
	4,085	4,100	4,115	4,131	4,146	4,161	4,177	4,192	4,208	4,223	4,239	4,254	4,270	4,286
	6,401,251	6,424,935	6,448,169	6,471,412	6,494,142	6,516,817	6,538,930	6,560,580	6,581,765	6,602,495	6,622,769	6,642,587	6,661,949	6,680,865
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,567.01	1,567.06	1,614.14	1,614.22	1,614.33	1,614.44	1,614.56	1,614.68	1,614.81	1,614.94	1,615.07	1,615.20	1,615.33	1,615.46
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6,389,453	6,413,093	6,436,821	6,460,657	6,484,502	6,508,357	6,532,222	6,556,097	6,579,982	6,603,877	6,627,782	6,651,697	6,675,622	6,699,557

	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Sewer Rental Charges	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
EDUs	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	15	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	15	16	16	16	16	16	16	16	16	16	16	16	16	16
	4,085	4,100	4,115	4,131	4,146	4,161	4,177	4,192	4,208	4,223	4,239	4,254	4,270	4,286
	6,401,251	6,424,935	6,448,169	6,471,412	6,494,142	6,516,817	6,538,930	6,560,580	6,581,765	6,602,495	6,622,769	6,642,587	6,661,949	6,680,865
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,567.01	1,567.06	1,614.14	1,614.22	1,614.33	1,614.44	1,614.56	1,614.68	1,614.81	1,614.94	1,615.07	1,615.20	1,615.33	1,615.46
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6,389,453	6,413,093	6,436,821	6,460,657	6,484,502	6,508,357	6,532,222	6,556,097	6,579,982	6,603,877	6,627,782	6,651,697	6,675,622	6,699,557

	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00	71,250.00
	4085	4100	4115	4130	4145	4160	4175	4190	4206	4222	4238	4254	4270	4286
	15	15	15	15	15	15	15	15	15	16	16	16	16	16
	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
	15	16	16	16	16	16	16	16	16	16	16	16	16	16
	4,085	4,100	4,115	4,131	4,146	4,161	4,177	4,192	4,208	4,223	4,239	4,254	4,270	4,286
	6,401,251	6,424,935	6,448,169	6,471,412	6,494,142	6,516,817	6,538,930	6,560,580	6,581,765	6,602,495	6,622,769	6,642,587	6,661,949	6,680,865
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01	1,567.01
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,567.01	1,567.06	1,614.14	1,614.22	1,614.33	1,614.44	1,614.56	1,614.68	1,614.81	1,614.94	1,615.07	1,615.20	1,615.33	1,615.46
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6,389,453	6,413,093	6,436,821	6,460,657	6,484,502	6,508,357	6,532,222	6,556,097	6,579,982	6,603,877	6,627,782	6,651,697	6,675,622	6,699,557

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2042
1,569.90	1,617.00	1,617.00	1,617.00	1,681.68	1,681.68	1,681.68	1,732.13	1,732.13	1,784.09	1,784.09	1,828.70	1,828.70	1,828.70	1,876.24
\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
11,799	11,842	11,886	12,288	12,333	12,379	12,922	12,970	13,018	13,458	13,508	13,964	14,016	14,016	14,420
6,401,251	6,424,935	6,642,169	6,666,745	6,691,412	6,984,817	7,010,661	7,036,600	7,274,515	7,301,430	7,548,299	7,576,228	7,794,366	7,794,366	7,823,206
-	192,748	-	-	267,656	-	-	211,098	-	219,043	-	189,406	-	-	203,403
-	-	-	-	-	-	-	-	-	-	-	2.59%	-	-	2.64%
28,368	28,357	28,345	28,333	28,321	28,309	28,297	28,284	28,272	28,259	28,246	28,233	28,220	28,206	28,206
56,300	36,434	37,666	37,805	37,945	39,608	39,755	39,902	41,251	41,403	42,803	42,961	44,198	44,361	44,361
64,668	64,791	66,011	66,138	66,266	67,917	68,052	68,186	69,523	69,662	71,049	71,194	72,418	72,567	72,567

\$ Services 15% savings 0.15
 50% savings 0.5
 100% savings 1
 BRENTWOOD
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses
 BRENTWOOD
 Wages
 Professional Services
 Eliminated Exp

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
BRENTWOOD														
Reported CAPX - from the financials	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROSS Property, plant and equipment														
Accumulated Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET PPE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investor Provided Capital	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation Expense	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX														
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
year-end GROSS Property, plant and equipment.	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TRANSFER ADJUSTED Brentwood Borough Wastewater System Assets

Total Debt	47,531	70,785	93,358
Purchase of Capital Assets	352,500	260,806	579,500

	2021	2020	2019
Income (Loss) AFTER Transfers	434,488	751,739	801,255
Interest paid	1,882	2,563	3,222
Depreciation	0	0	0
Total Source	\$436,370	\$754,302	\$804,477
Income tax	0	0	0
Principal	23,254	22,573	21,914
Interest paid	1,882	2,563	3,222
Total Use	\$25,136	\$25,136	\$25,136

WITH TRANSFER

Debt Service Coverage	17.36	30.01	32.00
Pre-Tax Interest Coverage - Including AFC(3)(x)	231.87	294.30	249.68
Post-Tax Interest Coverage - Including AFC(3)(x)	231.87	294.30	249.68
GCF / Interest Coverage(4)(x)	231.87	294.30	249.68
GCF / Tot. Debt(7)(%)	914.11	1062.00	858.26
GCF / Construction(6)(%)	0.01	288.24	138.27

Comparable Group

Debt Service Coverage - As Reported						
	2021	2020	2019			
Comparable Group						
AMERICAN STATES WATER COMPANY	3.1	1.6	2.2			
AMERICAN WATER WORKS COMPANY, INC.	3.0	2.3	1.8			
ARTESIAN RESOURCES CORPORATION	3.9	3.8	3.7			
CALIFORNIA WATER SERVICE GROUP	5.1	3.6	0.4			
ESSENTIAL UTILITIES, INC.	1.0	0.4	0.4			
MIDDLESEX WATER COMPANY	1.2	4.5	4.0			
SIJ GROUP	1.6	2.5	3.7			
THE YORK WATER COMPANY	0.7	0.7	0.3			
Median	2.3	2.4	2.0			
	2021	2020	2019	2021	2020	2019
Company Name	DEPRECIATION	DEPRECIATION	DEPRECIATION	TOTAL INTEREST EXPENSE	TOTAL INTEREST EXPENSE	TOTAL INTEREST EXPENSE
AMERICAN STATES WATER COMPANY	39,974	37,204	35,713	22,834	22,531	24,586
AMERICAN WATER WORKS COMPANY, INC.	636,000	604,000	582,000	403,000	397,000	386,000
ARTESIAN RESOURCES CORPORATION	11,885	11,143	10,803	7,592	7,619	7,024
CALIFORNIA WATER SERVICE GROUP	111,581	100,935	91,288	44,980	45,047	44,891
ESSENTIAL UTILITIES, INC.	297,952	257,059	156,476	207,709	188,435	149,125
MIDDLESEX WATER COMPANY	26,799	20,838	17,232	8,114	7,493	7,264
SIJ GROUP	96,474	91,622	68,489	54,339	54,255	31,796
THE YORK WATER COMPANY	8,859	8,177	7,688	4,926	4,707	5,124
	2021	2020	2019	2021	2020	2019
	INCOME TO PREF+COMM	INCOME TO PREF+COMM	INCOME TO PREF+COMM	REPAY LT DEBT	REPAY LT DEBT	REPAY LT DEBT
AMERICAN STATES WATER COMPANY	22,834	22,531	24,586	28,356	71,136	40,325
AMERICAN WATER WORKS COMPANY, INC.	403,000	397,000	386,000	372,000	342,000	495,000
ARTESIAN RESOURCES CORPORATION	7,592	7,619	7,024	1,825	1,772	1,725
CALIFORNIA WATER SERVICE GROUP	44,980	45,047	44,891	5,353	22,141	405,568
ESSENTIAL UTILITIES, INC.	207,709	188,435	149,125	769,546	1,820,571	1,073,708
MIDDLESEX WATER COMPANY	8,114	7,493	7,264	52,691	7,472	7,343
SIJ GROUP	54,339	54,255	31,796	76,113	28,931	1,400
THE YORK WATER COMPANY	4,926	4,707	5,124	37,649	39,628	85,906

Company Name	Pretax Operating Income			Interest expense			Net Income		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
AMERICAN STATES WATER CO	147,604	137,153	133,598	22,834	22,531	24,586	94,347	86,425	84,342
AMERICAN WATER WORKS CO INC	2,043,000	1,321,000	1,219,000	403,000	397,000	386,000	1,263,000	709,000	621,000
ARTESIAN RESOURCES -CL A	30,156	30,120	27,130	7,592	7,619	7,024	16,827	16,817	14,925
CALIFORNIA WATER SERVICE GP	150,197	153,896	125,678	44,980	45,047	44,891	101,125	96,831	63,116
ESSENTIAL UTILITIES, INC.	629,709	453,406	360,651	207,709	188,435	149,125	431,612	284,849	224,543
MIDDLESEX WATER CO	39,169	41,799	38,012	8,114	7,493	7,264	36,543	38,425	33,888
SJW GROUP	123,186	124,150	63,653	54,339	54,255	31,796	60,478	61,515	23,403
YORK WATER CO	23,030	23,323	21,766	4,926	4,707	5,124	16,984	16,598	14,402

Company Name	Gross Cash Flow			Total debt			CAPX		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
AMERICAN STATES WATER CO	137,882	125,872	126,678	629,017	586,555	499,928	144,515	130,423	151,940
AMERICAN WATER WORKS CO INC	2,119,000	1,507,000	1,398,000	11,077,000	11,025,000	9,547,000	1,764,000	1,822,000	1,654,000
ARTESIAN RESOURCES -CL A	30,266	24,401	21,079	172,029	171,460	153,846	40,814	34,277	40,677
CALIFORNIA WATER SERVICE GP	211,586	206,596	168,402	1,111,389	1,171,852	998,102	293,194	298,651	273,770
ESSENTIAL UTILITIES, INC.	700,258	511,439	354,411	6,114,443	5,777,606	3,097,913	1,020,519	835,642	550,273
MIDDLESEX WATER CO	61,981	52,811	46,410	331,418	287,541	263,687	79,378	105,619	89,125
SJW GROUP	149,679	143,507	86,320	1,595,037	1,538,915	1,423,078	233,933	195,323	164,325
YORK WATER CO	25,316	24,333	22,365	148,455	126,304	103,282	46,400	33,299	20,537

Company Name	Pretax Interest Coverage			Posttax Interest Coverage			GCF Interest Coverage		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
AMERICAN STATES WATER CO	6.5	6.1	5.4	5.1	4.8	4.4	7.0	6.6	6.2
AMERICAN WATER WORKS CO INC	5.1	3.3	3.2	4.1	2.8	2.6	6.3	4.8	4.6
ARTESIAN RESOURCES -CL A	4.0	4.0	3.9	3.2	3.2	3.1	5.0	4.2	4.0
CALIFORNIA WATER SERVICE GP	3.3	3.4	2.8	3.2	3.1	2.4	5.7	5.6	4.8
ESSENTIAL UTILITIES, INC.	3.0	2.4	2.4	3.1	2.5	2.5	4.4	3.7	3.4
MIDDLESEX WATER CO	4.8	5.6	5.2	5.5	6.1	5.7	8.6	8.0	7.4
SJW GROUP	2.3	2.3	2.0	2.1	2.1	1.7	3.8	3.6	3.7
YORK WATER CO	4.7	5.0	4.2	4.4	4.5	3.8	6.1	6.2	5.4
Median	4.4	3.7	3.6	3.7	3.2	2.9	5.9	5.2	4.7


Company Name	GCF To Debt			GCF To CAPX		
	2021	2020	2019	2021	2020	2019
AMERICAN STATES WATER CO	21.9	21.5	25.3	95.4	96.5	83.4
AMERICAN WATER WORKS CO INC	19.1	13.7	14.6	120.1	82.7	84.5
ARTESIAN RESOURCES -CL A	17.6	14.2	13.7	74.2	71.2	51.8
CALIFORNIA WATER SERVICE GP	19.0	17.6	16.9	72.2	69.2	61.5
ESSENTIAL UTILITIES, INC.	11.5	8.9	11.4	68.6	61.2	64.4
MIDDLESEX WATER CO	18.7	18.4	17.6	78.1	50.0	52.1
SJW GROUP	9.4	9.3	6.1	64.0	73.5	52.5
YORK WATER CO	17.1	19.3	21.7	54.6	73.1	108.9
Median	18.2	15.9	15.8	73.2	72.2	63.0

	2021	2020	2019
Pre-Tax Interest Coverage - Including AFC(3)(x)	4.4	3.7	3.6
Post-Tax Interest Coverage - Including AFC(3)(x)	3.7	3.2	2.9
GCF / Interest Coverage(4)(x)	5.9	5.2	4.7
GCF / Tot. Debt(7)(%)	18.2	15.9	15.8
GCF / Construction(6)(%)	73.2	72.2	63.0

Bulletin No. 196

1912 to July 1, 2022

The
Handy-Whitman Index[®]
of
Public Utility
Construction Costs[™]



Trends of Construction Costs

COMPILED & PUBLISHED BY
Whitman, Requardt & Associates, LLP
Engineers, Architects and Planners
801 South Caroline Street
Baltimore, Maryland 21231
410-235-3450

	BCWSA		ACSA		ALTOONA WATER AUTHORITY		CRWA	
	2020	2019	2020	2019	2020	2019	2020	2019
NET Property, plant and equipment	457,544,068	453,174,193	643,502,136	629,097,945	94,458,106	100,528,196	224,285,248	203,420,262
Operating Income	17,944,985	19,821,564	80,147,473	75,382,370	4,082,275	6,157,037	19,083,482	21,336,089
ROR/N PPE	3.92%	4.37%	12.45%	11.98%	4.32%	6.12%	8.51%	10.49%
3-Year Average	3.90%		11.79%		7.87%		10.13%	
Median of Each Year		5.08%						
Median of Each Entity		5.42%						
Conclusion		5.25%						

	CHESTER WATER AUTHORITY			ERIE CITY WATER AUTHORITY			LASA*			RAWA		
	2020	2019	2018	2020	2019	2018	2020	2019	2018	2020	2019	2018
NET Property, plant and equipment	280,862,318	282,920,765	277,881,505	200,008,941	194,099,358	191,070,499	147,014,498	140,405,221	142,318,075	63,336,954	66,455,706	64,973,550
Operating Income	4,928,913	4,705,194	1,487,430	13,461,619	9,549,652	10,005,109	6,069,056	6,901,580	6,054,460	3,653,656	3,556,133	2,945,874
ROR/N PPE	1.75%	1.66%	0.54%	6.73%	4.92%	5.24%	4.13%	4.92%	4.25%	5.77%	5.35%	4.53%
3-Year Average	1.32%			5.63%			4.43%			5.22%		

* Fiscal year 3/31

Median of Each Year

Median of Each Entity

Conclusion

	WCVMA*			PITTSBURGH WATER & SEWER		
	2020	2019	2018	2020	2019	2018
NET Property, plant and equipment	617,498,278	590,631,677	554,245,152	921,650,000	830,578,000	757,480,000
Operating Income	26,537,557	23,281,341	27,079,696	50,831,000	65,808,000	61,660,000
ROR/N PPE	4.30%	3.94%	4.89%	5.52%	7.92%	8.14%
3-Year Average	4.38%			7.19%		

*Fiscal Year 3/31

Median of Each Year

Median of Each Entity

Conclusion

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
YEARS ENDED DECEMBER 31, 2020 AND 2019

<u>ASSETS</u>	<u>2020</u>	<u>2019</u>
Current Assets		
Cash and Cash Equivalents	\$ 5,872,075	\$ 5,870,876
Investments	17,122,426	23,051,730
Accounts Receivable, Net of Allowance for Doubtful Accounts	8,310,705	6,175,101
Unbilled Revenue Receivable	9,768,802	9,020,572
Prepaid Expenses	<u>729,044</u>	<u>692,186</u>
Total Current Assets	<u>41,803,052</u>	<u>44,810,465</u>
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,617,503	3,922,837
Investments	63,732,897	60,095,138
Interest Receivable	<u>920,477</u>	<u>748,766</u>
Total Restricted Assets	<u>68,270,877</u>	<u>64,766,741</u>
Capital Assets		
Land, Rights-of-Way and Construction in Progress	81,292,208	77,851,553
Other Capital Assets, Net of Accumulated Depreciation	<u>376,251,860</u>	<u>375,322,640</u>
Total Capital Assets, Net	<u>457,544,068</u>	<u>453,174,193</u>
Total Non-Current Assets	<u>525,814,945</u>	<u>517,940,934</u>
Total Assets	<u>567,617,997</u>	<u>562,751,399</u>
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	7,790,319	8,818,011
Pension: Changes in Assumptions	591,106	591,106
Pension: Difference Between Expected and Actual Experience	805,127	805,127
Pension: Difference Between Projected and Actual Earnings on Investments	1,691,386	1,691,386
Pension: Contributions Made Subsequent to Measurement Date	4,326,752	4,326,752
OPEB: Difference Between Expected and Actual Experience	26,180	34,877
OPEB: Difference Between Projected and Actual Earnings on Plan Investments	<u>-</u>	<u>1,972</u>
Total Deferred Outflows of Resources	<u>15,230,870</u>	<u>16,269,231</u>
<u>LIABILITIES AND NET POSITION</u>		
Current Liabilities		
Accounts Payable and Accrued Expenses	12,749,312	11,887,091
Current Portion of Bonds Payable	22,375,000	21,345,000
Interest Payable	<u>745,039</u>	<u>803,887</u>
Total Current Liabilities	<u>35,869,351</u>	<u>34,035,978</u>
Non-Current Liabilities		
Customer and Developer Deposits	3,613,254	3,715,610
Bonds Payable, Net of Unamortized Bond Discount and Premium	223,030,306	233,209,683
Net Pension Liability	1,880,256	1,880,256
Net OPEB Liability	<u>4,026,011</u>	<u>3,953,798</u>
Total Non-Current Liabilities	<u>232,549,827</u>	<u>242,759,347</u>
Total Liabilities	<u>268,419,178</u>	<u>276,795,325</u>
Deferred Inflows of Resources		
Pension: Changes in Assumptions	32,118	32,118
OPEB: Changes in Assumptions	241,345	321,526
OPEB: Difference Between Projected and Actual Earnings on Investments	86,429	-
Proceeds from Sale of Future Revenues	<u>3,795,454</u>	<u>3,967,975</u>
Total Deferred Inflows of Resources	<u>4,155,346</u>	<u>4,321,619</u>
Net Position		
Net Investment in Capital Assets	229,523,791	216,079,031
Restricted for Capital Activity	15,719,591	12,077,609
Restricted for Debt Service	31,553,004	31,514,000
Unrestricted	<u>33,477,957</u>	<u>38,233,046</u>
Total Net Position	<u>\$ 310,274,343</u>	<u>\$ 297,903,686</u>

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES,
AND CHANGES IN NET POSITION
YEARS ENDED DECEMBER 31, 2020 AND 2019

	<u>2020</u>	<u>2019</u>
Operating Revenues		
Retail Sewer Service	\$ 54,861,161	\$ 49,612,675
Wholesale Sewer Service	14,337,247	20,728,839
Retail Water Service	11,747,314	11,481,175
Wholesale Water Service	4,663,441	4,315,851
Improvement and Tapping Fees	263,705	580,375
Other Revenues	<u>3,557,822</u>	<u>5,875,885</u>
Total Operating Revenues	<u>89,430,690</u>	<u>92,594,800</u>
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	19,678,584	20,534,850
Water Procurement	<u>5,736,644</u>	<u>5,352,970</u>
Total Sewage Treatment and Water Procurement	<u>25,415,228</u>	<u>25,887,820</u>
Plant Operations		
Payroll and Related Costs	2,732,227	1,927,213
Repairs and Maintenance	1,945,504	1,292,778
Electricity	521,131	405,213
Water and Sewage Testing	<u>249,680</u>	<u>256,279</u>
Total Plant Operations	<u>5,448,542</u>	<u>3,881,483</u>
Collection, Transmission and Distribution Service		
Payroll and Related Costs	8,845,809	9,070,825
Repairs and Maintenance	3,084,311	2,347,631
Electricity	885,701	807,210
Other Related Costs	<u>216,408</u>	<u>274,544</u>
Total Collection, Transmission and Distribution Service	<u>13,032,229</u>	<u>12,500,210</u>
Total Operating Expenses	<u>43,895,999</u>	<u>42,269,513</u>
General and Administrative Expenses		
Payroll and Related Costs	4,412,980	4,536,162
Professional Fees	2,329,876	2,732,816
Insurance	497,923	522,165
Other	<u>2,382,465</u>	<u>3,199,536</u>
Total General and Administrative Expense	<u>9,623,244</u>	<u>10,990,679</u>
Total Expenses	<u>53,519,243</u>	<u>53,260,192</u>
Income From Operations Before Depreciation	35,911,447	39,334,608
Depreciation	<u>(17,966,462)</u>	<u>(19,513,044)</u>
Operating Income	<u>17,944,985</u>	<u>19,821,564</u>
Nonoperating Revenue (Expense)		
Interest Expense, Net of Amounts Capitalized	(7,770,635)	(8,517,857)
Investment Income	628,113	2,078,449
Improvement and Tapping Fees	1,821,485	1,262,884
Amortization	<u>(253,291)</u>	<u>(218,126)</u>
Total Nonoperating Expense	<u>(5,574,328)</u>	<u>(5,394,650)</u>
Increase In Net Position	<u>12,370,657</u>	<u>14,426,914</u>
Net Position - Beginning of Year	<u>297,903,686</u>	<u>283,476,772</u>
Net Position - End of Year	<u>\$ 310,274,343</u>	<u>\$ 297,903,686</u>

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2019 AND 2018

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2019 and 2018 segment information is as follows:

Assets	2019			Totals
	Sewer System	Water System	Administrative Account	
Current Assets				
Cash and Investments	\$ 14,429,267	\$ 11,367,223	\$ 3,126,116	\$ 28,922,606
Accounts Receivable, Unbilled Revenue and Net Intercompany Transfers	6,989,222	17,310,475	(9,104,024)	15,195,673
Other	608,655	83,531	-	692,186
Non-Current Assets				
Restricted Assets	48,050,977	12,345,721	4,370,043	64,766,741
Capital Assets	<u>304,158,678</u>	<u>142,902,978</u>	<u>6,112,537</u>	<u>453,174,193</u>
Total Assets	<u>374,236,799</u>	<u>184,009,928</u>	<u>4,504,672</u>	<u>562,751,399</u>
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	2,839,649	5,978,362	-	8,818,011
Pension: Changes in Assumptions	465,033	126,073	-	591,106
Pension: Difference Between Expected and Actual Experience	674,207	130,920	-	805,127
Pension: Difference Between Projected and Actual Earnings on Investments	1,437,679	253,707	-	1,691,386
Pension: Contributions Made Subsequent to Measurement Date	3,275,976	1,050,776	-	4,326,752
OPEB: Difference Between Expected and Actual Experience	29,645	5,232	-	34,877
OPEB: Difference Between Projected and Actual Earnings on Plan Investments	<u>1,676</u>	<u>296</u>	<u>-</u>	<u>1,972</u>
Total Deferred Outflows of Resources	<u>8,723,865</u>	<u>7,545,366</u>	<u>-</u>	<u>16,269,231</u>
Liabilities and Net Position				
Liabilities				
Current Liabilities	29,501,359	3,745,556	789,063	34,035,978
Non-Current Liabilities	<u>150,796,046</u>	<u>88,247,692</u>	<u>3,715,609</u>	<u>242,759,347</u>
Total Liabilities	<u>180,297,405</u>	<u>91,993,248</u>	<u>4,504,672</u>	<u>276,795,325</u>
Deferred Inflows of Resources				
Pension: Changes in Assumptions	27,086	5,032	-	32,118
Pension: Difference Between Projected and Actual Earnings on Investments	(165,256)	165,256	-	-
OPEB: Changes in Assumptions	273,297	48,229	-	321,526
Proceeds from Sale of Future Revenues	<u>-</u>	<u>3,967,975</u>	<u>-</u>	<u>3,967,975</u>
Total Deferred Inflows of Resources	<u>135,127</u>	<u>4,186,492</u>	<u>-</u>	<u>4,321,619</u>
Net Position				
Net Investment in Capital Assets	156,941,099	53,025,395	6,112,537	216,079,031
Restricted for Capital Activity	5,071,173	6,352,002	654,434	12,077,609
Restricted for Debt Service	25,520,284	5,993,716	-	31,514,000
Unrestricted	<u>14,995,576</u>	<u>30,004,441</u>	<u>(6,766,971)</u>	<u>38,233,046</u>
Total Net Position	<u>\$ 202,528,132</u>	<u>\$ 95,375,554</u>	<u>\$ -</u>	<u>\$ 297,903,686</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2019 AND 2018

NOTE 6: SEGMENT INFORMATION (CONTINUED)

Assets	2018			Totals
	Sewer System	Water System	Administrative Account	
Current Assets				
Cash and Investments	\$ 13,996,611	\$ 9,258,718	\$ 1,343,631	\$ 24,598,960
Accounts Receivable, Unbilled Revenue and Net Intercompany Transfers	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	293,945,954	145,484,365	5,383,895	444,814,214
Total Assets	362,192,175	185,168,408	4,141,806	551,502,389
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
Pension: Changes in Assumptions	632,513	155,628	-	788,141
Pension: Difference Between Expected and Actual Experience	162,431	40,607	-	203,038
Pension: Contributions Made Subsequent to Measurement Date	6,428,229	1,607,056	-	8,035,285
Total Deferred Outflows of Resources	10,726,542	8,265,853	-	18,992,395
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	156,519,961	91,561,281	3,496,528	251,577,770
Total Liabilities	180,660,511	94,934,773	4,141,806	279,737,090
Deferred Inflows of Resources				
Pension: Changes in Assumptions	36,187	6,638	-	42,825
Pension: Difference Between Projected and Actual Earnings on Investments	2,478,081	619,520	-	3,097,601
Proceeds from the Sale of Future Revenues	-	4,140,496	-	4,140,496
Total Deferred Inflows of Resources	2,514,268	4,766,654	-	7,280,922
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	12,679,810	26,202,109	(5,875,828)	33,006,091
Total Net Position	\$ 189,743,938	\$ 93,732,834	\$ -	\$ 283,476,772

Appendix A-5.2 (Gannett)
 BUCKS COUNTY WATER AND SEWER AUTHORITY
 STATEMENTS OF NET POSITION
 DECEMBER 31, 2019 AND 2018

<u>ASSETS</u>	<u>2019</u>	<u>2018</u>
Current Assets		
Cash and Cash Equivalents	\$ 5,870,876	\$ 3,803,232
Investments	23,051,730	20,795,728
Accounts Receivable, Net of Allowance for Doubtful Accounts	6,175,101	7,707,994
Unbilled Revenue Receivable	9,020,572	9,970,317
Prepaid Expenses	692,186	695,549
Total Current Assets	<u>44,810,465</u>	<u>42,972,820</u>
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,922,837	3,541,256
Investments	60,095,138	59,883,991
Interest Receivable	748,766	290,108
Total Restricted Assets	<u>64,766,741</u>	<u>63,715,355</u>
Capital Assets		
Land, Rights-of-Way and CIP	77,851,553	79,376,857
Other Capital Assets, Net of Accumulated Depreciation	375,322,640	365,437,357
Total Capital Assets, Net	<u>453,174,193</u>	<u>444,814,214</u>
Total Non-Current Assets	<u>517,940,934</u>	<u>508,529,569</u>
Total Assets	<u>562,751,399</u>	<u>551,502,389</u>
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	8,818,011	9,965,931
Pension: Changes in Assumptions	591,106	788,141
Pension: Difference Between Expected and Actual Experience	805,127	203,038
Pension: Difference Between Projected and Actual Earnings on Investments	1,691,386	-
Pension: Contributions Made Subsequent to Measurement Date	4,326,752	8,035,285
OPEB: Difference Between Expected and Actual Experience	34,877	-
OPEB: Difference Between Projected and Actual Earnings on Plan Investments	1,972	-
Total Deferred Outflows of Resources	<u>16,269,231</u>	<u>18,992,395</u>
<u>LIABILITIES AND NET POSITION</u>		
Current Liabilities		
Accounts Payable and Accrued Expenses	11,887,091	6,872,214
Current Portion of Bonds Payable	21,345,000	20,460,000
Interest Payable	803,887	827,106
Total Current Liabilities	<u>34,035,978</u>	<u>28,159,320</u>
Non-Current Liabilities		
Customer and Developer Deposits	3,715,610	3,496,528
Bonds Payable, Net of Unamortized Bond Discount and Premium	233,209,683	239,927,805
Net Pension Liability	1,880,256	2,296,351
Net OPEB Liability	3,953,798	5,857,086
Total Non-Current Liabilities	<u>242,759,347</u>	<u>251,577,770</u>
Total Liabilities	<u>276,795,325</u>	<u>279,737,090</u>
Deferred Inflows of Resources		
Pension: Changes in Assumptions	32,118	42,825
Pension: Difference Between Projected and Actual Earnings on Investments	-	3,097,601
OPEB: Changes in Assumptions	321,526	-
Proceeds from Sale of Future Revenues	3,967,975	4,140,496
Total Deferred Inflows of Resources	<u>4,321,619</u>	<u>7,280,922</u>
Net Position		
Net Investment in Capital Assets	216,079,031	196,121,343
Restricted for Capital Activity	12,077,609	19,214,098
Restricted for Debt Service	31,514,000	35,135,240
Unrestricted	38,233,046	33,006,091
Total Net Position	<u>\$ 297,903,686</u>	<u>\$ 283,476,772</u>

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES,
AND CHANGES IN NET POSITION
YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues		
Retail Sewer Service	\$ 49,612,675	\$ 48,634,267
Wholesale Sewer Service	20,728,839	19,105,200
Retail Water Service	11,481,175	11,755,194
Wholesale Water Service	4,315,851	4,357,235
Improvement and Tapping Fees	580,375	279,425
Other Revenues	5,875,885	4,697,553
Total Operating Revenues	<u>92,594,800</u>	<u>88,828,874</u>
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	20,534,850	20,862,709
Water Procurement	5,352,970	5,611,587
Total Sewage Treatment and Water Procurement	<u>25,887,820</u>	<u>26,474,296</u>
Plant Operations		
Payroll and Related Costs	1,927,213	1,592,995
Repairs and Maintenance	1,292,778	1,251,844
Electricity	405,213	461,808
Water and Sewage Testing	256,279	218,091
Total Plant Operations	<u>3,881,483</u>	<u>3,524,738</u>
Collection, Transmission and Distribution Service		
Payroll and Related Costs	9,070,825	8,191,888
Repairs and Maintenance	2,347,631	1,992,003
Electricity	807,210	995,191
Other Related Costs	274,544	298,459
Total Collection, Transmission and Distribution Service	<u>12,500,210</u>	<u>11,477,541</u>
Total Operating Expenses	<u>42,269,513</u>	<u>41,476,575</u>
General and Administrative Expenses		
Payroll and Related Costs	4,536,162	6,780,772
Professional Fees	2,732,816	1,981,255
Insurance	522,165	476,597
Other	3,199,536	4,933,790
Total General and Administrative Expense	<u>10,990,679</u>	<u>14,172,414</u>
Total Expenses	<u>53,260,192</u>	<u>55,648,989</u>
Income From Operations Before Depreciation	39,334,608	33,179,885
Depreciation	<u>(19,513,044)</u>	<u>(18,063,567)</u>
Operating Income	<u>19,821,564</u>	<u>15,116,318</u>
Nonoperating Revenue (Expense)		
Interest Expense,		
Net of Amounts Capitalized	(8,517,857)	(9,017,615)
Investment Income	2,078,449	2,015,753
Other	-	4,824
Improvement and Tapping Fees	1,262,884	2,750,737
Amortization	<u>(218,126)</u>	<u>(51,377)</u>
Total Nonoperating Expense	<u>(5,394,650)</u>	<u>(4,297,678)</u>
Increase In Net Position, Before Contributed Capital	14,426,914	10,818,640
Contributed Capital	-	779,914
Net Position - Beginning of Year, as Previously Reported	283,476,772	275,130,457
Adjustment for GASB No. 75	-	<u>(3,252,239)</u>
Net Position - Beginning of Year, Restated	<u>283,476,772</u>	<u>271,878,218</u>
Net Position - End of Year	<u>\$ 297,903,686</u>	<u>\$ 283,476,772</u>

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2018 and 2017 segment information is as follows:

Assets	2018			Totals
	Sewer System	Water System	Administrative Account	
Current Assets				
Cash and Investments	\$ 13,996,611	\$ 9,258,718	\$ 1,343,631	\$ 24,598,960
Accounts Receivable and Unbilled Revenue	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	<u>293,945,954</u>	<u>145,484,365</u>	<u>5,383,895</u>	<u>444,814,214</u>
Total Assets	<u>362,192,175</u>	<u>185,168,408</u>	<u>4,141,806</u>	<u>551,502,389</u>
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
Changes in Assumptions	632,513	155,628	-	788,141
Difference Between Expected and Actual Experience	162,431	40,607	-	203,038
Contributions Made Subsequent to Measurement Date	<u>6,428,229</u>	<u>1,607,056</u>	<u>-</u>	<u>8,035,285</u>
Total Deferred Outflows of Resources	<u>10,726,542</u>	<u>8,265,853</u>	<u>-</u>	<u>18,992,395</u>
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	<u>156,519,961</u>	<u>91,561,281</u>	<u>3,496,528</u>	<u>251,577,770</u>
Total Liabilities	<u>180,660,511</u>	<u>94,934,773</u>	<u>4,141,806</u>	<u>279,737,090</u>
Deferred Inflows of Resources				
Changes in Assumptions	36,187	6,638	-	42,825
Difference Between Projected and Actual Earnings on Investments	2,478,081	619,520	-	3,097,601
Proceeds from the Sale of Future Revenues	<u>-</u>	<u>4,140,496</u>	<u>-</u>	<u>4,140,496</u>
Total Deferred Inflows of Resources	<u>2,514,268</u>	<u>4,766,654</u>	<u>-</u>	<u>7,280,922</u>
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	<u>12,679,810</u>	<u>26,202,109</u>	<u>(5,875,828)</u>	<u>33,006,091</u>
Total Net Position	<u>\$ 189,743,938</u>	<u>\$ 93,732,834</u>	<u>\$ -</u>	<u>\$ 283,476,772</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018		
	Sewer System	Water System	Totals
Operating Revenues			
Retail Sewer Service	\$ 48,634,267	\$ -	\$ 48,634,267
Wholesale Sewer Service	19,105,200	-	19,105,200
Retail Water Service	-	11,755,194	11,755,194
Wholesale Water Service	-	4,357,235	4,357,235
Improvement and Tapping Fees	-	279,425	279,425
Other Revenues	<u>3,130,165</u>	<u>1,567,388</u>	<u>4,697,553</u>
Total Operating Revenues	<u>70,869,632</u>	<u>17,959,242</u>	<u>88,828,874</u>
Expenses			
Operating Expenses			
Sewage Treatment and Water Procurement			
Sewage Treatment	20,862,709	-	20,862,709
Water Procurement	-	5,611,587	5,611,587
Total Sewage and Water Procurement	<u>20,862,709</u>	<u>5,611,587</u>	<u>26,474,296</u>
Plant Operations			
Payroll and Related Costs	1,592,995	-	1,592,995
Repairs and Maintenance	1,251,844	-	1,251,844
Electricity	461,808	-	461,808
Water and Sewage Testing	<u>218,091</u>	<u>-</u>	<u>218,091</u>
Total Plant Operations	<u>3,524,738</u>	<u>-</u>	<u>3,524,738</u>
Collection, Transmission and Distribution Service			
Payroll and related costs	6,404,591	1,787,297	8,191,888
Repairs and maintenance	1,660,514	331,489	1,992,003
Electricity	822,812	172,379	995,191
Other related costs	<u>209,224</u>	<u>89,235</u>	<u>298,459</u>
Total Collection, Transmission and Distribution Service Expense	<u>9,097,141</u>	<u>2,380,400</u>	<u>11,477,541</u>
Total Operating Expense	<u>33,484,588</u>	<u>7,991,987</u>	<u>41,476,575</u>
General and Administrative Expenses			
Payroll and related costs	5,714,319	1,066,453	6,780,772
Professional fees	1,747,815	233,440	1,981,255
Insurance	395,522	81,075	476,597
Other	<u>4,821,938</u>	<u>111,852</u>	<u>4,933,790</u>
Total General and Administrative Expenses	<u>12,679,594</u>	<u>1,492,820</u>	<u>14,172,414</u>
Income from Operations before depreciation	24,705,450	8,474,435	33,179,885
Depreciation	<u>(14,696,296)</u>	<u>(3,367,271)</u>	<u>(18,063,567)</u>
Operating Income	<u>10,009,154</u>	<u>5,107,164</u>	<u>15,116,318</u>
Nonoperating Revenue (Expense)			
Interest Expense, net of Amounts Capitalized	(5,405,915)	(3,611,700)	(9,017,615)
Investment Income	1,623,182	392,571	2,015,753
Other	4,824	-	4,824
Improvement and Tapping Fees	2,750,737	-	2,750,737
Amortization	<u>(51,377)</u>	<u>-</u>	<u>(51,377)</u>
Total Nonoperating Expense	<u>(1,078,549)</u>	<u>(3,219,129)</u>	<u>(4,297,678)</u>
Increase in Net Position, Before Contributed Capital	<u>8,930,605</u>	<u>1,888,035</u>	<u>10,818,640</u>
Contributed Capital	<u>710,204</u>	<u>69,710</u>	<u>779,914</u>
Net Position - Beginning of Year, as Previously Reported	182,867,532	92,262,925	275,130,457
Adjustment for GASB No. 75	<u>(2,764,403)</u>	<u>(487,836)</u>	<u>(3,252,239)</u>
Net Position - Beginning of Year, Restated	<u>180,103,129</u>	<u>91,775,089</u>	<u>271,878,218</u>
Net Position, End of Year	<u>\$ 189,743,938</u>	<u>\$ 93,732,834</u>	<u>\$ 283,476,772</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018			Totals
	Sewer System	Water System	Administrative Account	
Cash Flows from Operating Activities				
Cash Received from Customers	\$ 72,660,789	\$ 17,539,631	\$ -	\$ 90,200,420
Payments to Suppliers	(31,373,585)	(6,551,971)	-	(37,925,556)
Payroll and Related Payments	(13,711,973)	(3,095,494)	-	(16,807,467)
Other Operating (Payments) / Transactions	<u>12,644,098</u>	<u>(13,022,354)</u>	<u>222,511</u>	<u>(155,745)</u>
Net Cash Provided from Operations	<u>40,219,329</u>	<u>(5,130,188)</u>	<u>222,511</u>	<u>35,311,652</u>
Cash Flows from Capital and Related Financing Activities				
Acquisition and Construction of Capital Assets	(12,799,197)	(860,416)	(191,958)	(13,851,571)
Improvement and Tapping Fees	2,750,737	-	-	2,750,737
Bond Principal Repayments	(17,784,999)	(2,475,000)	-	(20,259,999)
Interest Paid	<u>(6,364,234)</u>	<u>(3,537,201)</u>	<u>-</u>	<u>(9,901,435)</u>
Net Cash Used in Capital and Related Financing Activities	<u>(34,197,693)</u>	<u>(6,872,617)</u>	<u>(191,958)</u>	<u>(41,262,268)</u>
Cash Flows from Investing Activities				
Sale of Investments, Net	(5,599,131)	12,069,155	-	6,470,024
Interest Received	<u>14,790</u>	<u>392,571</u>	<u>-</u>	<u>407,361</u>
Net Cash Used in Investing Activities	<u>(5,584,341)</u>	<u>12,461,726</u>	<u>-</u>	<u>6,877,385</u>
Net Increase (Decrease) in Cash and Cash Equivalents	437,295	458,921	30,553	926,769
Cash and Cash Equivalents - Beginning of Year	<u>1,529,900</u>	<u>33,485</u>	<u>4,854,334</u>	<u>6,417,719</u>
Cash and Cash Equivalents - End of Year	<u>\$ 1,967,195</u>	<u>\$ 492,406</u>	<u>\$ 4,884,887</u>	<u>\$ 7,344,488</u>
Displayed as:				
Cash and Cash Equivalents	\$ 1,967,195	\$ 492,406	\$ 1,343,631	\$ 3,803,232
Restricted Cash and Cash Equivalents	<u>-</u>	<u>-</u>	<u>3,541,256</u>	<u>3,541,256</u>
	<u>\$ 1,967,195</u>	<u>\$ 492,406</u>	<u>\$ 4,884,887</u>	<u>\$ 7,344,488</u>
Reconciliation of Operating Income to Net Cash Provided from Operations:				
Operating Income	\$ 10,009,154	\$ 5,107,164	\$ -	\$ 15,116,318
Adjustments to Reconcile Operating Income to Net Cash Provided from Operating Activities				
Depreciation	14,696,296	3,367,271	-	18,063,567
Changes in Assets and Liabilities:				
Receivables and Unbilled Revenue, Net	3,276,483	(247,091)	-	3,029,392
Prepaid Expenses	(34,155)	(5,410)	-	(39,565)
Intercompany Receivables (Payables)	12,685,022	(13,036,180)	351,158	-
Accounts Payable and Accrued Expenses	531,336	(121,266)	(164,592)	245,478
Interest Payable	(37,555)	16,262	-	(21,293)
Customer and Developer Deposits	-	-	35,945	35,945
Net Pension and OPEB Liabilities and Related Pension Deferrals	<u>(907,252)</u>	<u>(210,938)</u>	<u>-</u>	<u>(1,118,190)</u>
Net Cash Provided from Operations	<u>\$ 40,219,329</u>	<u>\$ (5,130,188)</u>	<u>\$ 222,511</u>	<u>\$ 35,311,652</u>

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2020 AND 2019

	Assets and Deferred Outflows of Resources		Liabilities, Deferred Inflows of Resources, and Net Position	
	2020	2019	2020	2019
Assets:			Liabilities:	
Current assets:			Current liabilities:	
Cash and cash equivalents	\$ 209,431,473	\$ 175,476,686	Accounts payable	\$ 6,092,972
Accounts receivable:			Accrued liabilities:	
Billed sewer revenue	20,446,710	16,702,983	Compensated absences	5,950,167
Unbilled sewer revenue	44,044,901	43,666,409	Salaries and wages	1,985,019
Other	4,734	30,225	Accrued interest on bonds	2,592,551
Other current assets	6,634,434	6,604,244	Reserve for litigation	2,371,900
Total current assets	280,562,252	242,480,547	Pretreatment advance payments	2,600
Restricted/designated assets:			Current maturities of sewer revenue bonds	28,785,000
Cash and cash equivalents	272,815,362	150,150,904	Total current liabilities	47,780,209
Investments	-	84,963,478	Long-term liabilities:	
Accrued interest receivable	-	375,444	Other post-employment benefits	13,901,968
Total restricted/designated assets	272,815,362	235,489,826	Net pension liability	7,266,922
Prepaid bond costs	5,815,062	6,591,319	Sewer revenue bonds - less current maturities	670,495,000
Nondepreciable capital assets:			Unamortized bond premium	67,960,993
Land	5,344,896	5,344,896	Net long-term debt	738,455,993
Construction in progress	94,302,298	81,287,241	Total long-term liabilities	759,624,883
Total nondepreciable capital assets	99,647,194	86,632,137	Total Liabilities	807,405,092
Depreciable capital assets -			Deferred inflows of Resources:	
at cost, net of accumulated depreciation	543,854,942	542,465,808	Related to pensions	25,133,372
Total	643,502,136	629,097,945	Other post-retirement benefits	3,169,749
Total Assets	1,202,694,812	1,113,659,637	Total Deferred Inflows of Resources	28,303,121
Deferred Outflows of Resources:			Net Position:	
Related to pensions	27,581,534	35,676,281	Net investment in capital assets	154,324,268
Other post-retirement benefits	1,758,333	853,236	Unrestricted	247,249,961
Refunding adjustment	5,247,763	6,278,101	Total Net Position	401,574,229
Total Deferred Outflows of Resources	34,587,630	42,807,618	Total Liabilities, Deferred Inflows of Resources, and Net Position	\$ 1,237,282,442
Total Assets and Deferred Outflows of Resources	\$ 1,237,282,442	\$ 1,156,467,255		\$ 1,156,467,255

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2020 AND 2019

	2020	2019
Operating Revenues	\$ 186,799,875	\$ 180,238,305
Operating Expenses:		
Treatment	50,981,608	49,805,868
Intercepting sewer systems	8,771,952	8,753,813
Upper Allegheny system	307,944	298,412
Administrative and engineering	15,682,596	15,962,845
Billing and collecting	4,461,391	3,572,073
Management information systems	4,071,959	3,690,385
Total operating expenses before depreciation	84,277,450	82,083,396
Operating Income Before Depreciation	102,522,425	98,154,909
Depreciation	22,374,952	22,772,539
Operating Income	80,147,473	75,382,370
Non-operating Revenues (Expenses):		
Interest income	2,002,687	8,966,272
Interest expense on bonds	(27,485,399)	(28,261,390)
Amortization of prepaid bond costs	(516,597)	(596,640)
Loss on capital assets retired	(4,573,423)	-
Change in value of pension related items	(2,469,057)	(4,177,854)
Change in value of OPEB related items	(2,175,059)	(774,061)
Total non-operating revenues (expenses)	(35,216,848)	(24,843,673)
Change in Net Position	44,930,625	50,538,697
Net Position:		
Beginning of year	356,643,604	306,104,907
End of year	\$ 401,574,229	\$ 356,643,604

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2019 AND 2018

	Assets and Deferred Outflows of Resources		Liabilities, Deferred Inflows of Resources, and Net Position	
	2019	2018	2019	2018
Assets:			Liabilities:	
Current assets:			Current liabilities:	
Cash and cash equivalents	\$ 175,476,686	\$ 142,482,220	Accounts payable	\$ 7,349,003
Accounts receivable:			Accrued liabilities:	
Billed sewer revenue	16,702,983	16,544,587	Compensated absences	4,994,678
Unbilled sewer revenue	43,666,409	41,408,016	Salaries and wages	1,751,181
Other	30,225	4,469	Accrued interest on bonds	2,638,762
Other current assets	6,604,244	6,556,274	Reserve for litigation	2,371,900
Total current assets	242,480,547	206,995,566	Pretreatment advance payments	1,850
Restricted/designated assets:			Current maturities of sewer revenue bonds	27,635,000
Cash and cash equivalents	150,150,904	83,445,720	Total current liabilities	46,742,374
Investments	84,963,478	167,782,528	Long-term liabilities:	
Accrued interest receivable	375,444	622,842	Other post-employment benefits	12,087,137
Total restricted/designated assets	235,489,826	251,851,090	Net pension liability	28,684,748
Prepaid bond costs	6,591,319	7,187,959	Sewer revenue bonds - less current maturities	650,300,000
Nondepreciable capital assets:			Unamortized bond premium	50,763,732
Land	5,344,896	5,344,896	Net long-term debt	701,063,732
Construction in progress	81,287,241	59,836,813	Total long-term liabilities	741,835,617
Total nondepreciable capital assets	86,632,137	65,181,709	Total Liabilities	788,577,991
Depreciable capital assets -			Deferred Inflows of Resources:	
at cost, net of accumulated depreciation	542,465,808	557,161,609	Related to pensions	9,341,236
Total	629,097,945	622,343,318	Other post-retirement benefits	1,904,424
Net pension asset	-	2,705,577	Total Deferred Inflows of Resources	11,245,660
Total Assets	1,113,659,637	1,091,083,510	Net Position:	
Deferred Outflows of Resources:			Net investment in capital assets	142,167,140
Related to pensions	35,676,281	17,633,917	Unrestricted	214,476,464
Other post-retirement benefits	853,236	932,894	Total Net Position	356,643,604
Refunding adjustment	6,278,101	7,077,328	Total Liabilities, Deferred Inflows of Resources, and Net Position	\$ 1,156,467,255
Total Deferred Outflows of Resources	42,807,618	25,644,139		\$ 1,116,727,649
Total Assets and Deferred Outflows of Resources	\$ 1,156,467,255	\$ 1,116,727,649		

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues	\$ 180,238,305	\$ 169,724,327
Operating Expenses:		
Treatment	49,805,868	47,633,280
Intercepting sewer systems	8,753,813	8,490,808
Upper Allegheny system	298,412	563,244
Administrative and engineering	15,962,845	14,736,160
Billing and collecting	3,572,073	3,482,212
Management information systems	3,690,385	3,723,344
Total operating expenses before depreciation	82,083,396	78,629,048
Operating Income Before Depreciation	98,154,909	91,095,279
Depreciation	22,772,539	23,071,589
Operating Income	75,382,370	68,023,690
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	8,966,272	3,127,451
Interest expense on bonds	(28,261,390)	(20,735,872)
Amortization of prepaid bond costs	(596,640)	(629,995)
Change in value of pension related items	(4,177,854)	(61,702)
Change in value of OPEB related items	(774,061)	(789,172)
Total non-operating revenues (expenses)	(24,843,673)	(19,089,290)
Change in Net Position	50,538,697	48,934,400
Net Position:		
Beginning of year	306,104,907	257,170,507
End of year	\$ 356,643,604	\$ 306,104,907

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues	\$ 169,724,327	\$ 170,182,173
Operating Expenses:		
Treatment	47,633,280	44,821,531
Intercepting sewer systems	8,490,808	7,100,846
Upper Allegheny system	563,244	487,512
Administrative and engineering	14,736,160	13,772,696
Billing and collecting	3,482,212	4,439,250
Management information systems	3,723,344	3,778,272
Total operating expenses before depreciation	78,629,048	74,400,107
Operating Income Before Depreciation	91,095,279	95,782,066
Depreciation	23,071,589	22,426,718
Operating Income	68,023,690	73,355,348
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	3,127,451	1,096,517
Interest expense on bonds, net of amounts capitalized	(20,735,872)	(21,544,440)
Amortization of prepaid bond costs	(629,995)	(693,501)
Change in value of pension related items	(61,702)	(3,196,667)
Change in value of OPEB related items	(789,172)	-
Total non-operating revenues (expenses)	(19,089,290)	(24,338,091)
Change in Net Position	48,934,400	49,017,257
Net Position:		
Beginning of year, as restated for 2018	257,170,507	213,528,616
End of year	\$ 306,104,907	\$ 262,545,873

The notes to financial statements are an integral part of this statement.

CAPITAL REGION WATER

BALANCE SHEETS

DECEMBER 31, 2020 AND 2019

	2020	2019
Assets and Deferred Outflows of Resources		
Assets:		
Current assets:		
Cash and cash equivalents	\$ 33,125,086	\$ 37,818,930
Accounts receivable, net of allowance for uncollectible accounts of \$6,812,663 and \$6,179,939	12,990,450	11,392,879
Grants receivable	207,125	481,413
Due from the City of Harrisburg	3,247,428	3,030,340
Prepaid expenses	631,891	407,379
Inventory	226,727	219,675
Total current assets	50,428,707	53,350,616
Restricted assets:		
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	10,339,323	10,728,097
Investments - restricted under trust indentures	19,133,382	23,792,020
Total restricted assets	29,472,705	34,520,117
Noncurrent assets:		
Capital assets, not being depreciated	41,304,196	25,938,916
Capital assets, net of accumulated depreciation of \$138,312,983 and \$132,254,413	182,981,052	177,481,346
Net pension asset	793,994	-
Total noncurrent assets	225,079,242	203,420,262
Total Assets	304,980,654	291,290,995
Deferred Outflows of Resources:		
Deferred loss on refunding	6,138,866	6,849,812
Deferred outflows of resources for other postemployment benefits	154,587	78,714
Deferred outflows of resources for pension	1,018,573	1,518,157
Total Deferred Outflows of Resources	7,312,026	8,446,683
Total Assets and Deferred Outflows of Resources	\$ 312,292,680	\$ 299,737,678

CAPITAL REGION WATER

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2020 AND 2019

	<u>2020</u>	<u>2019</u>
Operating Revenues:		
User charges	\$ 46,053,281	\$ 47,556,016
Total operating revenues	<u>46,053,281</u>	<u>47,556,016</u>
Operating Expenses:		
Operating	15,078,242	14,776,480
Administrative	5,832,986	5,788,495
Depreciation	<u>6,058,571</u>	<u>5,654,952</u>
Total operating expenses	<u>26,969,799</u>	<u>26,219,927</u>
Operating Income	<u>19,083,482</u>	<u>21,336,089</u>
Non-Operating Revenues (Expenses):		
Investment income	426,489	1,193,936
Grant revenue	177,024	1,184,617
Gain on sale of easements	191,516	40,000
Miscellaneous income (expense)	921,942	606,499
Gain (loss) on disposal of capital assets	2,000	(74,363)
Interest expense	<u>(5,725,558)</u>	<u>(5,836,796)</u>
Total non-operating revenues (expenses)	<u>(4,006,587)</u>	<u>(2,886,107)</u>
Change in Net Position	15,076,895	18,449,982
Net Position:		
Beginning of year	<u>94,622,873</u>	<u>76,172,891</u>
End of year	<u>\$109,699,768</u>	<u>\$ 94,622,873</u>

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2019

(with comparative totals as of December 31, 2018)

	2019	2018
Assets and Deferred Outflows of Resources		
Assets:		
Current assets:		
Cash and cash equivalents	\$ 37,818,930	\$ 48,169,716
Accounts receivable, net of allowance for uncollectible accounts of \$6,179,939 and \$5,914,774	11,392,879	10,001,747
Grants receivable	481,413	905,431
Due from the City of Harrisburg	3,030,340	3,686,285
Prepaid expenses	407,379	403,089
Inventory	219,675	347,960
Total current assets	53,350,616	63,514,228
Restricted assets:		
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	10,728,097	19,430,292
Investments - restricted under trust indentures	23,792,020	19,433,058
Total restricted assets	34,520,117	38,863,350
Noncurrent assets:		
Capital assets, not being depreciated	25,938,916	16,946,141
Capital assets, net of accumulated depreciation of \$132,254,413 and \$128,988,007	177,481,346	160,175,578
Net pension asset	-	1,009,658
Total noncurrent assets	203,420,262	178,131,377
Total Assets	291,290,995	280,508,955
Deferred Outflows of Resources:		
Deferred loss on refunding	6,849,812	7,877,263
Deferred outflows of resources for other postemployment benefits	78,714	77,533
Deferred outflows of resources for pension	1,518,157	651,522
Total Deferred Outflows of Resources	8,446,683	8,606,318
Total Assets and Deferred Outflows of Resources	\$ 299,737,678	\$ 289,115,273

CAPITAL REGION WATER

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2019

(with comparative totals for the year ended December 31, 2018)

	2019	2018
Operating Revenues:		
User charges	\$ 47,556,016	\$ 44,895,271
Total operating revenues	47,556,016	44,895,271
Operating Expenses:		
Operating	14,776,480	13,894,496
Administrative	5,788,495	5,293,225
Depreciation	5,654,952	5,394,021
Total operating expenses	26,219,927	24,581,742
Operating Income	21,336,089	20,313,529
Non-Operating Revenues (Expenses):		
Investment income	1,193,936	568,004
Grant revenue	1,184,617	1,502,468
Gain on sale of easements	40,000	4,838,927
Miscellaneous income (expense)	606,499	(180,383)
Loss on disposal of capital assets	(74,363)	-
Interest expense	(5,836,796)	(6,812,458)
Total non-operating revenues (expenses)	(2,886,107)	(83,442)
Change in Net Position	18,449,982	20,230,087
Net Position:		
Beginning of year	76,172,891	55,942,804
End of year	<u>\$ 94,622,873</u>	<u>\$ 76,172,891</u>

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2018

Assets and Deferred Outflows of Resources

Assets:

Current assets:

Cash and cash equivalents	\$ 48,169,716
Accounts receivable, net of allowance for uncollectible accounts of \$5,914,774	10,001,747
Grants receivable	905,431
Due from the City of Harrisburg	3,686,285
Prepaid expenses	403,089
Inventory	347,960

Total current assets	63,514,228
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Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	19,430,292
Investments - restricted under trust indentures	19,433,058

Total restricted assets	38,863,350
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Noncurrent assets:

Capital assets, not being depreciated	16,946,141
Capital assets, net of accumulated depreciation of \$128,988,007	160,175,578
Net pension asset	1,009,658

Total noncurrent assets	178,131,377
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Total Assets	280,508,955
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Deferred Outflows of Resources:

Deferred loss on refunding	7,877,263
Deferred outflows of resources for other postemployment benefits	77,533
Deferred outflows of resources for pension	651,522

Total Deferred Outflows of Resources	8,606,318
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Total Assets and Deferred Outflows of Resources

	\$ 289,115,273
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CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION
YEAR ENDED DECEMBER 31, 2018

Operating Revenues:		
User charges		\$ 44,895,271
Total operating revenues		<u>44,895,271</u>
Operating Expenses:		
Operating		13,894,496
Administrative		5,293,225
Depreciation		<u>5,394,021</u>
Total operating expenses		<u>24,581,742</u>
Operating Income		<u><u>20,313,529</u></u>
Non-Operating Revenues (Expenses):		
Investment income		568,004
Grant revenue		1,502,468
Gain on sale of easements		4,838,927
Miscellaneous expense		(180,383)
Interest expense		<u>(6,812,458)</u>
Total non-operating revenues (expenses)		<u>(83,442)</u>
Change in Net Position		20,230,087
Net Position:		
Beginning of year - restated		<u>55,942,804</u>
End of year		<u><u>\$ 76,172,891</u></u>

The accompanying notes are an integral part of these financial statements.

CITY OF ALTOONA
BLAIR COUNTY, PENNSYLVANIA
STATEMENT OF NET POSITION
DECEMBER 31, 2020
(AMOUNTS EXPRESSED IN WHOLE DOLLARS)

	PRIMARY GOVERNMENT		COMPONENT UNITS	
	Governmental Activities	Altoona Water Authority	Redevelopment Authority of Altoona	The Parking Authority of the City of Altoona
ASSETS				
Cash and Cash Equivalents	\$ 31,413,012	\$ 5,350,729	\$ 246,634	\$ 128,655
Investments	237,289	10,115,673	0	0
Taxes Receivable	4,127,451	0	0	0
Accounts Receivable	0	3,890,554	0	692
Intergovernmental Receivables	200,975	0	0	0
Loans Receivable - Current	687,316	0	9,826	0
Other Receivables	537,728	8,295	0	0
Prepaid Expenses	302,750	228,189	0	1,017
Inventory	406,484	0	0	0
Loans Receivable - Long-Term	5,731,660	0	94,387	0
Right to Use Asset, Net	0	94,458,106	0	0
Capital Assets, Net of Accumulated Depreciation	404,818,897	0	248,717	2,489,094
TOTAL ASSETS	\$448,463,562	\$114,051,546	\$ 599,564	\$2,619,458
Deferred Outflows of Resources				
Deferred Charges:				
Bond Discounts	\$ 43,943	\$ 0	\$ 0	\$ 0
Defined Benefit Pensions	9,503,418	1,160,795	0	0
OPEB Plans	410,933	0	0	0
Total Deferred Outflows of Resources	\$ 9,958,294	\$ 1,160,795	\$ 0	\$ 0
LIABILITIES				
Accounts Payable	\$ 1,940,050	\$ 1,137,391	\$ 580	\$ 17,229
Accrued Payroll	478,552	0	0	4,136
Payroll Taxes and Benefits Payable	321,792	0	0	3,263
Accrued Expenses	0	302,112	0	0
Accrued Payroll, Taxes, and Withholding	0	247,835	0	0
Accumulated Compensated Absences	0	0	0	1,093
Accrued Interest	484,310	0	0	291
Deposits Held	136,987	83,805	0	0
Unearned Revenues - Grants	6,720,952	0	0	0
Unearned Revenues - Rent Received in Advance	0	0	200	32,749
Noncurrent Liabilities:				
Due Within One Year	4,813,139	4,243,433	0	23,132
Due in More Than One Year	129,441,566	139,374,630	0	141,860
TOTAL LIABILITIES	\$144,337,348	\$145,389,206	\$ 780	\$ 223,753
Deferred Inflows of Resources				
Defined Benefit Pensions	\$ 13,641,984	\$ 1,975,668	\$ 0	\$ 0
NET POSITION				
Net Investment in Capital Assets	\$335,150,152	\$ 0	\$ 248,717	\$2,324,102
Restricted for:				
Highway Aid	966,475	0	0	0
Capital Expenditures	6,100,506	0	0	0
Recreation	243,369	0	0	0
Other Projects	4,410,401	0	344,636	0
Water Authority	0	0	0	0
Unrestricted (Deficit)	(46,428,379)	(32,152,533)	5,431	71,603
TOTAL NET POSITION	\$300,442,524	(\$ 32,152,533)	\$ 598,784	\$2,395,705

See Accompanying Notes and Independent Auditor's Report

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER OPERATING FUND

	2020 BUDGET
	0%
REVENUE	
WATER SALES	17,900,000
SALES TO OTHER UTILITIES	500,000
BULK SALES	-
CAPITAL SURCHARGE	500,000
PENALTIES	90,000
INSTALL/RENEW-SERVICE LINES	95,000
METER INCOME	30,000
SHUT OFFS	60,000
FIRE LINES	330,000
FINAL READINGS	45,000
CAPACITY FEES	30,000
REIMBURSEMENTS-BELLWOOD BORO	96,589
REIMBURSEMENTS-HOLLIDAYSBURG BORO	342,652
INTEREST INCOME	50,000
SERVICE-WASTEWATER DIVISION	1,161,358
TIMBER SALES	50,000
OTHER RENTALS	172,000
MISCELLANEOUS INCOME	96,000
BAD DEBT RECOVERY	4,000
TOTAL REVENUES	21,552,599

EXPENDITURES-ADMINISTRATIVE	
WAGES	794,997
OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	50,000
AUDITING	15,000
LEGAL FEES	25,000
TRUSTEES EXPENSE	-
OTHER PROFESSIONAL FEES	75,000
ADVERTISING	6,000
PUBLIC RELATIONS AND MARKETING	1,000
TRAVEL/CONFERENCES/EDUCATION	3,000
DUES & SUBSCRIPTIONS	7,500
MAINTENANCE BUILDING	20,000
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	6,000
POSTAGE	2,000
LEASE PAYMENT	3,799,870
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	12,000
TELEPHONE EXPENSE	15,000
BAD DEBT EXPENSE	20,000
UTILITIES	22,000
SMALL TOOLS, EQUIPMENT, FURNITURE	4,500
TOTAL ADMINISTRATIVE EXPENDITURES	4,894,567

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER OPERATING FUND

	2020 BUDGET
EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE	
SOCIAL SECURITY	423,599
WORKERS COMPENSATION	84,000
PA UNEMPLOYMENT COMPENSATION	5,000
PENSION	488,366
GROUP LIFE, AD&D, LTD , STD	90,000
HOSPITALIZATION & MAJOR MEDICAL	1,515,415
HEALTH & WELFARE(AFSCME)	28,000
MEDICAL EXAMINATIONS	8,000
INSURANCE-FLEET	17,773
INSURANCE-ALL RISK PROPERTY	142,219
INSURANCE-PUBLIC OFFICIAL LIABILITY	5,954
CONTINGENCIES	250,000
TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	3,058,326
TOTAL OPERATING EXPENDITURES	15,711,419
CAPITAL EXPENDITURES	
CONSTRUCTION & RENEWAL	438,500
VEHICLES	310,143
OFFICE FURNITURE & EQUIPMENT	-
METERS	10,000
COMPUTER EQUIPMENT	7,500
FIRE HYDRANTS	40,000
PLANT EQUIPMENT/RENEWAL	480,264
OTHER EQUIPMENT	24,650
TOTAL CAPITAL EXPENDITURES	1,311,057
DEBT SERVICE & INTEREST	
DEBT SERVICE PAYMENT	4,408,904
TOTAL DEBT SERVICE PAYMENT	4,408,904
TOTAL EXPENDITURES	21,431,380
NET REVENUE/(DEFICIT)	121,219

**ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER OPERATING FUND**

	2020 BUDGET
REVENUE	0%
WASTEWATER RENTALS	11,600,000
CAPITAL SURCHARGE	500,000
PENALTIES	65,000
CAPACITY FEES	10,000
SEWER INSTALL/TAP FEES	20,000
SEWER-SURCHARGE/PRETREATMENT	150,000
SEPTIC HAULER FEES	500,000
INTERMUNICIPAL SERVICE REIMBURSEMENT	668,680
INTEREST INCOME	75,000
MISCELLANEOUS INCOME	90,000
RECOVERY - CHARGED OFF ACCOUNTS	2,000
TOTAL REVENUES	13,680,680

EXPENDITURES-ADMINISTRATIVE

OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	85,000
AUDITING	12,000
LEGAL FEES	40,000
TRUSTEE EXPENSE	5,200
OTHER PROFESSIONAL FEES	35,000
ADVERTISING	3,000
PUBLIC RELATIONS EXPENSE	1,000
TRAVEL/CONFERENCES/EDUCATION	5,000
DUES & SUPSCRIPTIONS	7,700
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	5,000
POSTAGE	3,000
LEASE PAYMENT	2,137,427
PAYMENT FOR WATER DIVISION SERVICES	1,161,358
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	10,000
BAD DEBT EXPENSE	15,000
TELEPHONE EXPENSE	7,000
SMALL TOOLS, EQUIPMENT, FURNITURE	2,000
TOTAL ADMINISTRATIVE EXPENDITURES	3,550,385

**ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER OPERATING FUND**

	2020 BUDGET
EXPENDITURES-SANITARY SEWERS	
WAGES	690,528
MAINTENANCE-BUILDING	5,000
GIS SYSTEM EXPENSE	17,033
TELEPHONE EXPENSE	2,400
SAFETY EQUIPMENT/CLOTHING	4,000
MATERIALS & SUPPLIES	200,000
MAINTENANCE-VEHICLE	50,000
GASOLINE & OIL	25,000
DIESEL FUEL	30,000
STREET CUTS	150,000
ONE CALL SYSTEM EXPENSE	4,000
SMALL TOOLS, EQUIPMENT, FURNITURE	7,100
TOTAL SANITARY SEWERS EXPENDITURES	1,185,061

EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE

SOCIAL SECURITY	164,435
WORKERS COMPENSATION	42,000
PA UNEMPLOYMENT COMPENSATION	2,500
PENSION	230,800
GROUP LIFE, AD&D, LTD	30,000
HOSPITALIZATION & MAJR MEDICAL	653,800
HEALTH & WELFARE(AFSCME)	11,000
MEDICAL EXAMINATIONS	5,000
INSURANCE-FLEET	11,972
INSURANCE-ALL RISK PROPERTY	113,442
INSURANCE-BOILER MACHINERY	-
INSURANCE-PUBLIC OFFICIAL LIAB	5,658
CONTINGENCIES	100,000
TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	1,370,607

TOTAL OPERATING EXPENDITURES **9,369,495**

CITY OF ALTOONA
BLAIR COUNTY, PENNSYLVANIA
STATEMENT OF NET POSITION
DECEMBER 31, 2019
(AMOUNTS EXPRESSED IN WHOLE DOLLARS)

	PRIMARY GOVERNMENT		COMPONENT UNITS	
	Governmental Activities	Altoona Water Authority	Redevelopment Authority of Altoona	The Parking Authority of the City of Altoona
ASSETS				
Cash and Cash Equivalents	\$ 24,556,757	\$ 2,142,068	\$ 217,510	\$ 157,819
Investments	366,982	12,127,836	0	0
Taxes Receivable	4,174,803	0	0	0
Accounts Receivable	0	3,750,328	2,816	3,568
Intergovernmental Receivables	321,540	0	0	0
Loans Receivable – Current	795,935	0	8,972	0
Other Receivables	193,952	14,619	0	0
Prepaid Expenses	314,090	25,755	0	1,667
Inventory	512,219	0	0	0
Loans Receivable – Long-Term	5,374,360	0	103,723	0
Right to Use Asset, Net	0	100,528,196	0	0
Capital Assets, Net of Accumulated Depreciation	405,378,818	0	254,542	2,527,780
TOTAL ASSETS	\$441,989,456	\$118,588,802	\$ 587,563	\$2,690,834
Deferred Outflows of Resources				
Deferred Charges:				
Bond Discounts	\$ 780,363	\$ 0	\$ 0	\$ 0
Defined Benefit Pensions	10,878,514	1,651,319	0	0
OPEB Plans	1,130,677	0	0	0
Total Deferred Outflows of Resources	\$ 12,789,554	\$ 1,651,319	\$ 0	\$ 0
LIABILITIES				
Accounts Payable	\$ 2,790,042	\$ 1,732,865	\$ 4,978	\$ 14,842
Accrued Payroll	362,296	0	0	0
Payroll Taxes and Benefits Payable	134,704	0	0	3,459
Accrued Expenses	0	0	0	2,958
Accrued Payroll, Taxes, and Withholding	0	427,226	0	0
Accumulated Compensated Absences	0	279,288	0	2,119
Accrued Interest	295,444	0	0	321
Deposits Held	112,334	83,805	0	0
Unearned Revenues – Grants	6,271,037	0	0	0
Unearned Revenues - Rent Received in Advance	0	0	200	39,412
Noncurrent Liabilities:				
Due Within One Year	3,835,073	7,205,690	0	22,257
Due in More Than One Year	118,568,396	150,406,922	0	164,998
TOTAL LIABILITIES	\$132,369,326	\$160,135,796	\$ 5,178	\$ 250,366
Deferred Inflows of Resources				
Defined Benefit Pensions	\$ 12,696,000	\$ 1,965,233	\$ 0	\$ 0
NET POSITION				
Net Investment in Capital Assets	\$345,530,381	\$ 0	\$ 254,542	\$2,340,525
Restricted for:				
Highway Aid	894,316	0	0	0
Capital Expenditures	8,184,878	0	0	0
Recreation	231,511	0	0	0
Other Projects	5,470,093	0	339,715	0
Water Authority	0	0	0	0
Unrestricted (Deficit)	(50,597,495)	(41,860,908)	(11,872)	99,943
TOTAL NET POSITION	\$309,713,684	(\$ 41,860,908)	\$ 582,385	\$2,440,466

See Accompanying Notes and Independent Auditor's Report

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31,	
	<u>2017</u>	<u>2016</u>
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 28,033,026	\$ 27,234,701
Installations and Renewals Service Lines	119,509	116,080
Meter Sales, Shut-Offs, and Remotes	224,910	224,676
Timber Sales	40,197	142,007
Septic Hauler Fees	75,649	81,269
Fire Hydrant and Line Rentals	343,767	331,999
Service to Wastewater Division	1,057,455	1,097,406
Miscellaneous	322,114	414,937
Intermunicipal Service Reimbursements	1,409,183	1,346,227
Total Operating Revenues	<u>31,625,810</u>	<u>30,989,302</u>
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,117,738	5,106,472
Billing and Collection	709,035	750,662
Purification and Distribution/Disposal	5,001,575	5,078,445
Meter Division	482,163	476,819
Maintenance	3,823,793	3,918,953
Fringe Benefits and Insurance	3,706,216	3,838,891
Depreciation and Amortization	6,796,548	7,861,126
Total Operating Expenses- Functional and Departmental	<u>22,637,068</u>	<u>27,031,368</u>
Operating Income	<u>8,988,742</u>	<u>3,957,934</u>
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(223,701,014)	---
Investment Income	80,223	50,052
Interest Expense	(2,813,892)	(2,983,688)
Fees and Miscellaneous	(379)	(839)
Gain on Disposition of Fixed Assets	45,961	34,612
Contributed Capital	16,825	---
Amortization Bond Issue Costs	(125,478)	(126,251)
Total Nonoperating Revenues and (Expenses)	<u>(226,497,754)</u>	<u>(3,026,114)</u>
Net Income	(217,509,012)	931,820
Net Position - January 1	146,894,669	145,962,849
Net Position - December 31	<u>\$ (70,614,343)</u>	<u>\$ 146,894,669</u>

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31,	
	<u>2018</u>	<u>2017</u>
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 30,794,341	\$ 28,033,026
Installations and Renewals Service Lines	139,503	119,509
Meter Sales, Shut-Offs, and Remotes	250,565	224,910
Timber Sales	116,337	40,197
Septic Hauler Fees	2,269,905	75,649
Fire Hydrant and Line Rentals	341,023	343,767
Service to Wastewater Division	1,047,022	1,057,455
Miscellaneous	421,392	322,114
Intermunicipal Service Reimbursements	<u>1,231,099</u>	<u>1,409,183</u>
Total Operating Revenues	<u>36,611,187</u>	<u>31,625,810</u>
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,180,781	2,117,738
Billing and Collection	681,880	709,035
Purification and Distribution/Disposal	5,060,425	5,001,575
Meter Division	505,784	482,163
Maintenance	3,956,167	3,823,793
Fringe Benefits and Insurance	4,133,886	3,706,216
Depreciation and Amortization	<u>6,070,090</u>	<u>6,796,548</u>
Total Operating Expenses- Functional and Departmental	<u>22,589,013</u>	<u>22,637,068</u>
Operating Income	<u>14,022,174</u>	<u>8,988,742</u>
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(4,277,135)	(223,701,014)
Investment Income	170,111	80,223
Interest Expense	(6,783,092)	(2,813,892)
Fees and Miscellaneous	--	(379)
Gain on Disposition of Fixed Assets	105,075	45,961
Contributed Capital	201,042	16,825
Amortization Bond Issue Costs	<u>(154,988)</u>	<u>(125,478)</u>
Total Nonoperating Revenues and (Expenses)	<u>(10,738,987)</u>	<u>(226,497,754)</u>
Net Income/(Loss)	3,283,187	(217,509,012)
<u>Net Position - January 1</u>	<u>(70,614,343)</u>	<u>146,894,669</u>
<u>Net Position - December 31</u>	<u>\$ (67,331,156)</u>	<u>\$ (70,614,343)</u>

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

REVENUE	2019 BUDGET
WATER SALES	17,474,179
SALES TO OTHER UTILITIES	450,000
BULK SALES	-
CAPITAL SURCHARGE	500,000
PENALTIES	90,000
INSTALL/RENEW-SERVICE LINES	95,000
METER INCOME	30,000
SHUT OFFS	60,000
FIRE LINES	330,000
FINAL READINGS	45,000
CAPACITY FEES	30,000
REIMBURSEMENTS-BELLWOOD BORO	261,257
REIMBURSEMENTS-HOLLIDAYSBURG BORO	743,153
INTEREST INCOME	70,000
SERVICE-WASTEWATER DIVISION	1,112,400
TIMBER SALES	50,000
OTHER RENTALS	172,000
MISCELLANEOUS INCOME	96,000
BAD DEBT RECOVERY	4,000
TOTAL REVENUES	21,612,989

EXPENDITURES-ADMINISTRATIVE

WAGES	770,879
OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	45,000
AUDITING	15,000
LEGAL FEES	25,000
TRUSTEES EXPENSE	4,200
OTHER PROFESSIONAL FEES	100,000
ADVERTISING	6,000
PUBLIC RELATIONS AND MARKETING	1,000
TRAVEL/CONFERENCES/EDUCATION	2,500
DUES & SUBSCRIPTIONS	6,500
MAINTENANCE BUILDING	15,000
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	6,000
POSTAGE	2,000
LEASE PAYMENT	2,730,010
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	12,000
TELEPHONE EXPENSE	15,000
BAD DEBT EXPENSE	20,000
UTILITIES	22,000
SMALL TOOLS, EQUIPMENT, FURNITURE	2,500

TOTAL ADMINISTRATIVE EXPENDITURES	3,816,289
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ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-BILLING & COLLECTION	
WAGES	467,320
TRAVEL/CONFERENCES/EDUCATION	500
MAINTENANCE-EQUIPMENT	10,000
OFFICE SUPPLIES	20,000
UTILITY BILLING SOFTWARE HOSTING	85,000
POSTAGE	145,000
COLLECTION EXPENSE	7,000
TELEPHONE EXPENSE	3,000
SMALL TOOLS, EQUIPMENT, FURNITURE	4,000
TOTAL BILLING & COLLECTION EXPENDITURES	741,820
EXPENDITURES-PURIFICATION & DISTRIBUTION	
WAGES	1,247,592
TRAVEL/CONFERENCES/EDUCATION	7,000
DAM INSPECTIONS	27,000
TELEPHONE EXPENSE	2,700
MAINTENANCE-WATER PUMP STATION	-
MAINTENANCE-TANKS	-
MAINTENANCE-WATERSHED	15,000
SOURCE WATER PROTECTION	6,000
UTILITIES	105,000
SMALL TOOLS, EQUIPMENT, FURNITURE	8,000
TOTAL PURIFICATION & DISTRIBUTION EXPENDITURES	1,418,292
EXPENDITURES-HORSESHOE CURVE WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	4,200
ELECTRICITY	130,000
CHEMICALS	89,250
MAINTENANCE	86,250
SLUDGE DISPOSAL	10,000
UTILITIES - PROPANE HEATING	65,000
TOTAL HORSESHOE CURVE EXPENDITURES	417,200
EXPENDITURES-MILL RUN WTP	
LAB COSTS/SUPPLIES	17,300
TELEPHONE EXPENSE	1,300
ELECTRICITY	40,000
CHEMICALS	18,900
MAINTENANCE	25,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	15,000
TOTAL MILL RUN EXPENDITURES	120,500

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-TIPTON WTP	
LAB COSTS/SUPPLIES	25,800
TELEPHONE EXPENSE	1,500
ELECTRICITY	54,000
CHEMICALS	31,500
MAINTENANCE	23,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	10,000
TOTAL TIPTON EXPENDITURES	148,800
EXPENDITURES-KETTLE WTP	
LAB COSTS/SUPPLIES	3,000
TELEPHONE EXPENSE	1,000
ELECTRICITY	7,000
CHEMICALS	2,000
MAINTENANCE	5,000
SLUDGE DISPOSAL	
UTILITIES - PROPANE HEATING	4,500
TOTAL KETTLE EXPENDITURES	22,500
EXPENDITURES-HOMER GAP WTP	
LAB COSTS/SUPPLIES	2,000
TELEPHONE EXPENSE	400
ELECTRICITY	7,000
CHEMICALS	2,000
MAINTENANCE	4,000
SLUDGE DISPOSAL	-
UTILITIES - PROPANE HEATING	5,000
TOTAL HOMER GAP EXPENDITURES	20,400
EXPENDITURES-PLANE NINE WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	1,500
ELECTRICITY	75,000
CHEMICALS	31,500
MAINTENANCE	23,000
SLUDGE DISPOSAL	3,000
UTILITIES - PROPANE HEATING	15,000
INSURANCE	11,000
TOTAL PLANE NINE EXPENDITURES	192,500

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-BELLWOOD WTP	
LAB COSTS/SUPPLIES	32,500
TELEPHONE EXPENSE	1,400
ELECTRICITY	75,000
CHEMICALS	54,600
MAINTENANCE	28,750
SLUDGE DISPOSAL	4,000
UTILITIES - PROPANE HEATING	20,000
INSURANCE	10,000
TOTAL BELLWOOD EXPENDITURES	226,250
EXPENDITURES-METER DIVISION	
WAGES	450,182
MAINTENANCE-EQUIPMENT	30,000
TELEPHONE EXPENSE	5,000
OFFICE SUPPLIES/UNIFORMS/MAINT.	2,000
MATERIALS & SUPPLIES	20,000
GASOLINE & OIL	18,000
SMALL TOOLS, EQUIPMENT, FURNITURE	3,500
	-
TOTAL METER DIVISION EXPENDITURES	528,682
EXPENDITURES-MAINTENANCE	
WAGES	2,446,757
TRAVEL/CONFERENCES/EDUCATION	14,000
MAINTENANCE-BUILDING	10,000
MAINTENANCE-EQUIPMENT	8,000
MAINTENANCE-COMMUNICATION EQUIPMENT	500
OFFICE SUPPLIES	3,000
GIS SYSTEM EXPENSE	11,200
TELEPHONE EXPENSE	16,000
SAFETY EQUIPMENT/CLOTHING	10,000
MAINTENANCE - WATER PUMP STATIONS	12,000
MAINTENANCE - TANKS	30,000
UTILITIES	18,000
MECHANICS UNIFORMS	2,000
MATERIALS & SUPPLIES	400,000
LEASE EXPENSE	14,051
MAINTENANCE-VEHICLE	75,000
GASOLINE & OIL	55,000
DIESEL FUEL	65,000
STREET CUTS	325,000
ONE CALL SYSTEM EXPENSE	7,000
SMALL TOOLS, EQUIPMENT, FURNITURE	15,000
TOTAL MAINTENANCE EXPENDITURES	3,537,508

ALTOONA WATER AUTHORITY
WATER DIVISION
WATER REVENUE FUND

	2019 BUDGET
EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE	
SOCIAL SECURITY	411,779
WORKMENS COMPENSATION	140,000
PA UNEMPLOYMENT COMPENSATION	5,000
PENSION	486,300
GROUP LIFE, AD&D, LTD , STD	90,000
HOSPITALIZATION & MAJOR MEDICAL	1,480,000
HEALTH & WELFARE(AFSCME)	28,329
MEDICAL EXAMINATIONS	8,000
INSURANCE-FLEET	24,601
INSURANCE-ALL RISK PROPERTY	147,898
INSURANCE-PUBLIC OFFICIAL LIABILITY	3,685
CONTINGENCIES	-
TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	2,825,592
TOTAL OPERATING EXPENDITURES	14,016,333
CAPITAL EXPENDITURES	
CONSTRUCTION & RENEWAL	612,912
VEHICLES	-
OFFICE FURNITURE & EQUIPMENT	-
METERS	-
COMPUTER EQUIPMENT	-
FIRE HYDRANTS	-
PLANT EQUIPMENT/RENEWAL	-
OTHER EQUIPMENT	-
TOTAL CAPITAL EXPENDITURES	612,912
DEBT SERVICE & INTEREST	
DEBT SERVICE PAYMENT	6,435,936
TOTAL DEBT SERVICE PAYMENT	6,435,936
TOTAL EXPENDITURES	21,065,181
NET REVENUE/(DEFICIT)	547,808

**ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND**

	2019 BUDGET
REVENUE	0%
WASTEWATER RENTALS	11,343,481
CAPITAL SURCHARGE	500,000
PENALTIES	65,000
CAPACITY FEES	10,000
SEWER INSTALL/TAP FEES	20,000
SEWER-SURCHARGE/PRETREATMENT	150,000
SEPTIC HAULER FEES	190,000
INTERMUNICIPAL SERVICE REIMBURSEMENT	592,855
INTEREST INCOME	25,000
MISCELLANEOUS INCOME	90,000
RECOVERY - CHARGED OFF ACCOUNTS	2,000
TOTAL REVENUES	12,988,336
EXPENDITURES-ADMINISTRATIVE	
OFFICER'S COMPENSATION	1,200
CONSULTING ENGINEERS	113,000
AUDITING	12,000
LEGAL FEES	40,000
TRUSTEE EXPENSE	5,200
OTHER PROFESSIONAL FEES	35,000
ADVERTISING	3,000
PUBLIC RELATIONS EXPENSE	1,000
TRAVEL/CONFERENCES/EDUCATION	5,000
DUES & SUPSCRIPTIONS	6,700
MAINTENANCE-EQUIPMENT	12,000
OFFICE SUPPLIES	5,000
POSTAGE	3,000
PAYMENT FOR CITY SERVICES	1,535,630
PAYMENT FOR WATER DIVISION SERVICES	1,112,400
HUMAN RESOURCE EXPENSE	2,500
SAFETY COMMITTEE EXPENSE	10,000
BAD DEBT EXPENSE	15,000
TELEPHONE EXPENSE	7,000
SMALL TOOLS, EQUIPMENT, FURNITURE	2,000
TOTAL ADMINISTRATIVE EXPENDITURES	2,926,630

ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

2019
BUDGET

EXPENDITURES-DISPOSAL PLANTS

WAGES	1,338,792
TRAVEL/CONFERENCE/EDUCATION	16,000
PRETREATMENT MONITORING	60,000
TELEPHONE EXPENSE	4,500
SAFETY EQUIPMENT/CLOTHING	1,500
MAINTENANCE - PUMP STATIONS	4,000
SMALL TOOLS, EQUIPMENT, FURNITURE	10,000

TOTAL DISPOSAL PLANTS EXPENDITURES 1,434,792

EXPENDITURES - EASTERLY PLANT

LAB COSTS & SUPPLIES	55,000
TELEPHONE EXPENSE	2,000
ELECTRICITY-PLANTS	350,000
CHEMICALS	70,000
MAINTENANCE-PLANTS	103,000
MAINTENANCE-CSO'S	15,000
SLUDGE DISPOSAL	20,000
NATURAL GAS & OIL	35,000

TOTAL EASTERLY PLANT EXPENDITURES 650,000

EXPENDITURES - WESTERLY PLANT

LAB COSTS & SUPPLIES	55,000
TELEPHONE EXPENSE	10,000
ELECTRICITY-PLANTS	500,000
CHEMICALS	95,000
MAINTENANCE-PLANTS	204,000
MAINTENANCE-CSO'S	15,000
SLUDGE DISPOSAL	20,000
NATURAL GAS & OIL	55,000

TOTAL WESTERLY PLANT EXPENDITURES 954,000

**ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND**

**2019
BUDGET**

EXPENDITURES-SANITARY SEWERS

WAGES	682,400
MAINTENANCE-BUILDING	4,000
GIS SYSTEM EXPENSE	11,200
TELEPHONE EXPENSE	2,400
SAFETY EQUIPMENT/CLOTHING	4,000
MATERIALS & SUPPLIES	180,000
MAINTENANCE-VEHICLE	40,000
GASOLINE & OIL	20,000
DIESEL FUEL	30,000
STREET CUTS	150,000
ONE CALL SYSTEM EXPENSE	4,000
SMALL TOOLS, EQUIPMENT, FURNITURE	3,000

TOTAL SANITARY SEWERS EXPENDITURES	1,131,000
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EXPENDITURES-EMPLOYEE BENEFITS & INSURANCE

SOCIAL SECURITY	154,621
WORKMENS COMPENSATION	68,000
PA UNEMPLOYMENT COMPENSATION	2,500
PENSION	230,000
GROUP LIFE, AD&D, LTD	30,000
HOSPITALIZATION & MAJR MEDICAL	636,354
HEALTH & WELFARE(AFSCME)	11,600
MEDICAL EXAMINATIONS	5,000
INSURANCE-FLEET	16,436
INSURANCE-ALL RISK PROPERTY	103,458
INSURANCE-BOILER MACHINERY	-
INSURANCE-PUBLIC OFFICIAL LIAB	3,474
CONTINGENCIES	-

TOTAL EMPLOYEE FRINGE BENEFITS & INSURANCE	1,261,443
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TOTAL OPERATING EXPENDITURES	8,357,865
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ALTOONA WATER AUTHORITY
WASTEWATER DIVISION
SEWER REVENUE FUND

	2019 BUDGET
CAPITAL EXPENTITURES	
CONSTRUCTION & RENEWAL	-
VEHICLES	431,000
OFFICE FURNITURE & EQUIPMENT	8,000
COMPUTER EQUIPMENT	15,500
PLANT EQUIPMENT/RENEWAL	-
OTHER EQUIPMENT	9,000
TOTAL CAPITAL EXPENDITURES	463,500
DEBT SERVICE & INTEREST	
DEBT SERVICE PAYMENT	4,154,608
TOTAL DEBT SERVICE PAYMENT	4,154,608
TOTAL EXPENDITURES	12,975,973
NET REVENUE/(DEFICIT)	12,363

CITY OF READING

COMBINING STATEMENT OF NET POSITION - WATER FUNDS

December 31, 2019

	City Water Fund	Reading Area Water Authority	Eliminations	Total Water Fund
ASSETS				
Current assets:				
Cash	\$ 1,858,893	\$ 13,894,351	\$ -	\$ 15,753,244
Investments	119,120	-	-	119,120
Accounts receivable, net	1,687	5,230,760	-	5,232,447
Interfund receivables	293,208	-	(224,755)	68,453
Inventory	-	160,309	-	160,309
Prepaid expenses	-	54,600	-	54,600
Total current assets	2,272,908	19,340,020	(224,755)	21,388,173
Restricted assets - cash and investments	-	9,570,456	-	9,570,456
Noncurrent assets:				
Capital assets not being depreciated	2,059,359	270,252	-	2,329,611
Capital assets, net of accumulated depreciation	9,380,774	66,185,454	-	75,566,228
Total capital assets, net	11,440,133	66,455,706	-	77,895,839
Rights to leased land	-	917,715	-	917,715
Total noncurrent assets	11,440,133	67,373,421	-	78,813,554
TOTAL ASSETS	13,713,041	96,283,897	(224,755)	109,772,183
DEFERRED OUTFLOWS				
Deferred charge on bond refunding	123,536	917,612	-	1,041,148
Deferred outflows of resources for pension	599,238	-	-	599,238
Deferred outflows of resources for other postemployment benefits	20,939	-	-	20,939
TOTAL DEFERRED OUTFLOWS	743,713	917,612	-	1,661,325
LIABILITIES				
Current liabilities:				
Accounts payable	14,606	378,233	-	392,839
Interfund payables	4,214,064	224,755	(224,755)	4,214,064
Accrued interest	-	297,398	-	297,398
Accrued payroll and compensated absences	-	790,915	-	790,915
Escrow deposits	-	107,245	-	107,245
Current portion notes and bonds payable	99,498	3,379,254	-	3,478,752
Total current liabilities	4,328,168	5,177,800	(224,755)	9,281,213
Noncurrent liabilities:				
Notes and Bonds payable, net	3,065,323	77,462,829	-	80,528,152
Net pension liability	1,178,813	-	-	1,178,813
Other postemployment benefits	144,972	-	-	144,972
Total noncurrent liabilities	4,389,108	77,462,829	-	81,851,937
TOTAL LIABILITIES	8,717,276	82,640,629	(224,755)	91,133,150
DEFERRED INFLOWS				
Deferred inflows of resources for pension	576,698	-	-	576,698
Deferred inflows of resources for other postemployment benefits	1,900	-	-	1,900
TOTAL DEFERRED INFLOWS	578,598	-	-	578,598
NET POSITION				
Net investment in capital assets	8,398,848	(13,468,765)	-	(5,069,917)
Restricted for debt service	-	7,592,650	-	7,592,650
Restricted for capital assets	-	1,879,990	-	1,879,990
Unrestricted	(3,237,968)	18,557,005	-	15,319,037
TOTAL NET POSITION	\$ 5,160,880	\$ 14,560,880	\$ -	\$ 19,721,760

See note to supplementary information.

CITY OF READING

COMBINING STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION -
WATER FUNDS

Year Ended December 31, 2019

	City Water Fund	Reading Area Water Authority	Eliminations	Total Water Fund
OPERATING REVENUES				
Charges for services	\$ 12,151,531	\$ 32,093,301	\$ (12,151,531)	\$ 32,093,301
Other	487,110	41,836	-	528,946
TOTAL OPERATING REVENUES	12,638,641	32,135,137	(12,151,531)	32,622,247
OPERATING EXPENSES				
Lease payments	-	12,142,535	(12,142,535)	-
Personnel	441,051	6,372,046	-	6,813,097
Depreciation and amortization	596,856	4,311,994	-	4,908,850
Risk management	65,800	-	-	65,800
Contracted Services	-	907,019	-	907,019
Chemicals and supplies	-	1,173,058	-	1,173,058
Utilities	-	655,444	-	655,444
Other	1,869,230	3,016,908	(8,996)	4,877,142
TOTAL OPERATING EXPENSES	2,972,937	28,579,004	(12,151,531)	19,400,410
OPERATING INCOME	9,665,704	3,556,133	-	13,221,837
NONOPERATING REVENUES (EXPENSES)				
Intergovernmental revenue	-	125,000	-	125,000
Interest income	2,445	597,173	-	599,618
Interest expense	(154,896)	(3,768,727)	-	(3,923,623)
Gain (loss) on sale of solid waste accounts receivable	-	68,728	-	68,728
Other	-	19,797	-	19,797
NET NONOPERATING REVENUES (EXPENSES)	(152,451)	(2,958,029)	-	(3,110,480)
INCOME BEFORE TRANSFERS	9,513,253	598,104	-	10,111,357
Transfers out - lease payments	(9,774,710)	-	-	(9,774,710)
CHANGE IN NET POSITION	(261,457)	598,104	-	336,647
NET POSITION - BEGINNING OF YEAR - RESTATED	5,422,337	13,962,776	-	19,385,113
NET POSITION - END OF YEAR	\$ 5,160,880	\$ 14,560,880	\$ -	\$ 19,721,760

Management's Discussion and Analysis
December 31, 2018 and 2017

Financial Information

Net Position - The following schedule presents a summary of net position comparison at December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Assets			
Unrestricted current assets	\$ 25,886,197	\$ 24,371,571	\$ 20,614,911
Restricted current assets	9,389,010	11,067,725	19,177,064
Capital assets, net	64,973,550	59,036,648	55,262,527
Other asset	951,810	1,020,000	1,020,000
Deferred Outflow of Resources	<u>1,054,979</u>	<u>1,197,798</u>	<u>1,346,286</u>
Total Assets and Deferred Outflow of Resources	<u>\$ 102,255,546</u>	<u>\$ 96,693,742</u>	<u>\$ 97,420,788</u>
Liabilities			
Current liabilities	\$ 7,496,258	\$ 5,387,837	\$ 5,985,559
Long-term debt	<u>80,796,512</u>	<u>84,017,089</u>	<u>87,200,895</u>
Total Liabilities	<u>\$ 88,292,770</u>	<u>\$ 89,404,926</u>	<u>\$ 93,186,454</u>
Net Position			
Net investment in capital assets	\$ (18,130,096)	\$ (27,177,795)	\$ (22,222,481)
Restricted for debt service	7,513,275	7,426,839	7,409,503
Unrestricted	<u>24,579,597</u>	<u>27,039,772</u>	<u>19,047,312</u>
Total Net Position	<u>\$ 13,962,776</u>	<u>\$ 7,288,816</u>	<u>\$ 4,234,334</u>

Current liabilities increased by 39.1% in 2018 compared to a decrease by 10.0% in 2017 and an increase by 20.7% in 2016. The 2018 increase is attributable to increases in capital accounts payable.

Revenues - The following schedule presents a summary of revenues for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
Operating Revenues			
Water billings	\$ 29,663,185	\$ 29,736,140	\$ 29,622,297
Interest and penalty charges	541,209	472,340	586,502
Tampered meter and other charges	310,720	449,933	591,344
Tapping and connection fees	50,610	177,175	86,244
Abandonment fees	<u>20,107</u>	<u>60,907</u>	<u>32,001</u>
Total Operating Revenues	<u>\$ 30,585,831</u>	<u>\$ 30,896,495</u>	<u>\$ 30,918,388</u>

The 2018 fiscal year's total operating revenue decreased by 1.0% compared to 2017, and decreased by 0.1% and increased by 11.7% in 2017 and 2016, respectively.

Management's Discussion and Analysis
December 31, 2018 and 2017

Financial Information (continued)

Expenses - The following schedule presents a summary of expenses for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Operating Expenses			
Lease payments, City of Reading	\$ 11,640,032	\$ 11,426,339	\$ 11,441,419
Chemical supplies	1,051,101	746,486	1,197,002
Meter reading	-	-	539,483
Salaries, payroll taxes, and employee benefits	6,213,345	5,877,245	5,529,809
Contracted services	967,302	849,520	1,089,676
Other	3,895,738	3,176,042	2,881,120
Total Operating Expenses	<u>\$ 23,767,518</u>	<u>\$ 22,075,632</u>	<u>\$ 22,678,509</u>

The \$1,691,886 increase in expenses is primarily the result of the increase in chemical supplies, salaries, payroll taxes and employee benefits, and bad debt expense.

Changes in Net Position - The following schedule presents a summary of changes in net position for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Operating revenues	\$ 30,585,831	\$ 30,896,495	\$ 30,918,388
Operating expenses	<u>23,767,518</u>	<u>22,075,632</u>	<u>22,678,509</u>
Operating Income before Depreciation	6,818,313	8,820,863	8,239,879
Depreciation and amortization	<u>3,872,439</u>	<u>3,304,835</u>	<u>2,946,682</u>
Operating Income	2,945,874	5,516,028	5,293,197
Nonoperating revenues (expenses), net	<u>3,728,086</u>	<u>(2,461,546)</u>	<u>(3,468,433)</u>
Increase in Net Position	<u>\$ 6,673,960</u>	<u>\$ 3,054,482</u>	<u>\$ 1,824,764</u>

LANCASTER AREA SEWER AUTHORITY
Statements of Net Position
March 31, 2021 and 2020

	2021	2020
Assets and Deferred Outflows of Resources		
Current Assets		
Cash and cash equivalents	\$ 4,644,074	\$ 2,445,432
Funds in custody of trustee, restricted cash	4,210,000	6,209,890
Investments	-	1,500,000
Accounts receivable	3,593,825	2,752,178
Prepaid expenses	71,764	69,116
Total Current Assets	<u>12,519,663</u>	<u>12,976,616</u>
Capital Assets		
Capital assets not being depreciated		
Land	875,181	95,181
Construction in progress	4,742,245	5,206,076
Capital assets being depreciated		
Sewer system - lines	122,165,152	112,758,402
Sewer system - pump stations	41,931,866	41,163,499
Sewer system - treatment plant	72,170,735	70,517,190
Buildings and improvements	4,090,201	3,669,937
Technology	1,424,091	1,424,091
Vehicles	2,529,916	2,346,319
Equipment	1,077,480	996,387
Accumulated depreciation	<u>(103,992,369)</u>	<u>(97,771,861)</u>
Capital Assets, Net	<u>147,014,498</u>	<u>140,405,221</u>
Accounts receivable, net of current portion	161,167	188,278
Funds in custody of trustee, restricted cash, net of current portion	21,447,170	19,013,907
Funds in custody of trustee, restricted investments	<u>4,337,053</u>	<u>6,978,398</u>
Total Assets	<u>185,479,551</u>	<u>179,562,420</u>
Deferred Outflows of Resources		
Pension	<u>496,415</u>	<u>957,717</u>
Total Assets and Deferred Outflows of Resources	<u>\$ 185,975,966</u>	<u>\$ 180,520,137</u>

The Notes to Financial Statements are an integral part of these statements. | 14

LANCASTER AREA SEWER AUTHORITY
Statements of Revenues, Expenses, and Changes in Net Position
Years Ended March 31, 2021 and 2020

	2021	2020
Operating Revenue		
Sewer rental	\$ 22,534,309	\$ 21,682,126
Industrial waste surcharges	357,471	416,698
Bulk treatment fees	406,091	118,171
Trucked waste program	503,123	465,481
Interest and penalties	254,311	317,239
Miscellaneous income	321,335	304,333
Total operating revenue	<u>24,376,640</u>	<u>23,304,048</u>
Operating Expenses		
Administrative	3,841,748	4,069,985
Collection department	7,913,564	6,702,101
Treatment plant	5,168,757	4,508,047
Pretreatment program and laboratory department	306,245	346,310
Columbia Borough	741,975	776,025
West Earl	335,295	-
Total operating expenses	<u>18,307,584</u>	<u>16,402,468</u>
Operating income	<u>6,069,056</u>	<u>6,901,580</u>
Nonoperating Revenues (Expenses)		
Interest income	99,485	793,490
Tapping fees	1,322,458	1,123,675
Capacity reservation fees	287,960	215,181
Proceeds from sale of assets	66,100	40,911
Interest expense	(2,519,082)	(2,603,702)
Bond issue costs	(109,314)	-
Amortization	555,179	286,257
Total nonoperating revenues (expenses)	<u>(297,214)</u>	<u>(144,188)</u>
Income before capital contributions	5,771,842	6,757,392
Capital contributions	<u>1,075,815</u>	<u>851,741</u>
Increase in net position	6,847,657	7,609,133
Net position at beginning of year	<u>104,086,085</u>	<u>96,476,952</u>
Net position at end of year	<u>\$ 110,933,742</u>	<u>\$ 104,086,085</u>

The Notes to Financial Statements are an integral part of these statements. | 16

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2018 and 2017

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2018, 2017, and 2016. The change in net position increased from \$ 4.6 million in fiscal year 2017 to \$ 9.0 million in fiscal year 2018. Operating income increased \$ 381,000 over last year while non-operating revenue (expense) increased \$ 3.2 million over fiscal year 2017.

	2018	2017	2016
Operating revenue	\$ 21,499,186	\$ 20,849,832	\$ 19,713,716
Operating expenses	15,978,558	15,710,138	14,557,000
Operating income	5,520,628	5,139,694	5,156,716
Non-operating revenue (expenses)	2,251,417	(908,165)	(1,983,244)
Income before capital contribution	7,772,045	4,231,529	3,173,472
Capital contribution	1,224,093	324,142	551,477
Change in net position	8,996,138	4,555,671	3,724,949
Net position, beginning of year	81,380,843	76,825,172	73,100,223
Net position, end of year	\$ 90,376,981	\$ 81,380,843	\$ 76,825,172

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2018 Operating Revenue and Operating Expenses, respectively.

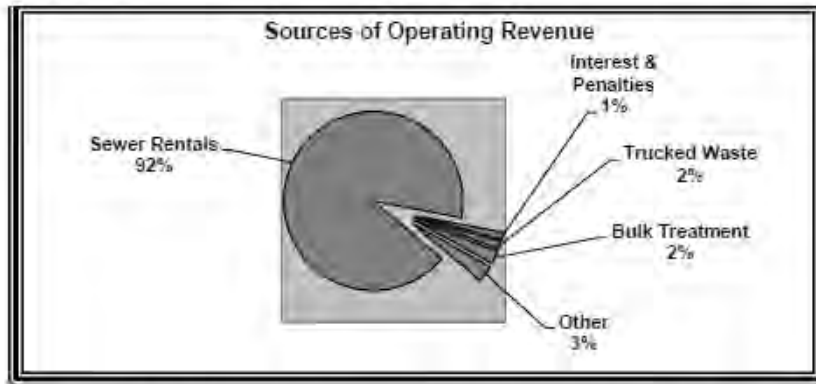


Table 3 - Sources of Operating Revenue - Fiscal Year 2018

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis

Financial Analysis (Continued)

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2019, 2018, and 2017. The change in net position decreased from \$ 9.0 million in fiscal year 2018 to \$ 6.1 million in fiscal year 2019. Operating income increased \$ 564,000 over last year while non-operating revenue (expense) decreased \$ 3.1 million over fiscal year 2018.

	2019	2018	2017
Operating revenue	\$ 22,974,614	\$ 21,499,186	\$ 20,849,882
Operating expenses	16,889,502	15,978,558	15,710,138
Operating income	6,085,112	5,520,628	5,139,694
Non-operating revenue (expenses)	(825,158)	2,251,417	(900,165)
Income before capital contribution	5,259,954	7,772,045	4,231,529
Capital contribution	840,017	1,224,093	324,142
Change in net position	6,099,971	8,996,138	4,555,671
Net position, beginning of year	90,376,981	81,380,843	76,825,172
Net position, end of year	\$ 96,476,952	\$ 90,376,981	\$ 81,380,843

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2019 Operating Revenue and Operating Expenses, respectively.

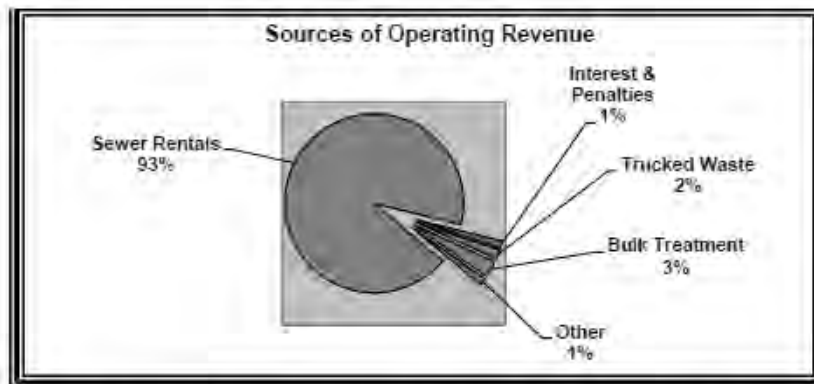


Table 3 - Sources of Operating Revenue - Fiscal Year 2019

**LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis**

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2020, 2019, and 2018. The change in net position increased from \$ 6.1 million in fiscal year 2019 to \$ 7.6 million in fiscal year 2020. Operating income increased \$ 847,000 over last year while non-operating expenses decreased \$ 650,000 over fiscal year 2019.

	2020	2019	2018
Operating revenue	\$ 23,304,048	\$ 22,943,962	\$ 21,499,186
Operating expenses	16,402,468	16,889,502	15,978,558
Operating income	6,901,580	6,054,460	5,520,628
Non-operating revenue (expenses)	(144,188)	(794,506)	2,251,417
Income before capital contribution	6,757,392	5,259,954	7,772,045
Capital contribution	851,741	840,017	1,224,093
Change in net position	7,609,133	6,099,971	8,996,138
Net position, beginning of year	96,476,952	90,376,981	81,380,843
Net position, end of year	\$ 104,086,085	\$ 96,476,952	\$ 90,376,981

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2020 Operating Revenue and Operating Expenses, respectively.

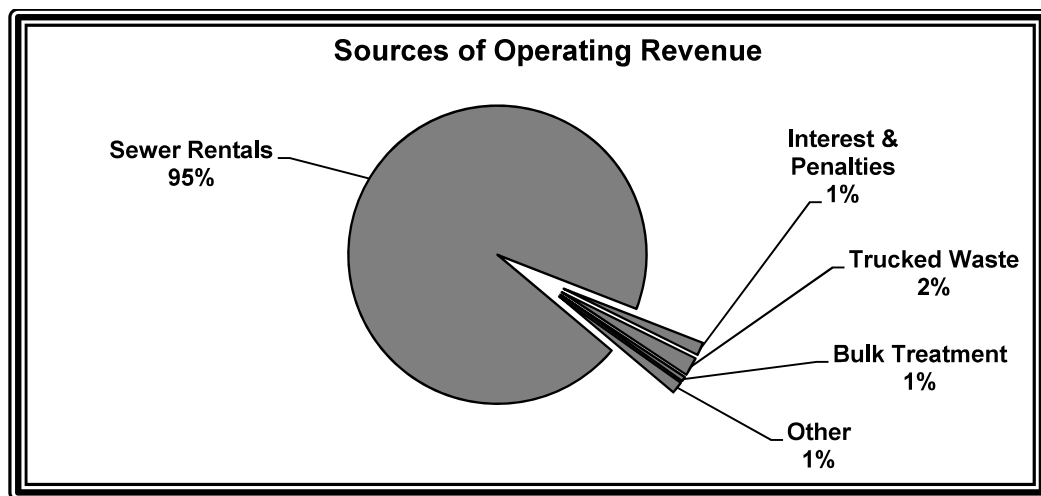


Table 3 - Sources of Operating Revenue - Fiscal Year 2020

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2018 and 2017

Revenue

In fiscal year 2018, revenue exceeded budgeted revenue by 7.2% resulting from capacity reservation and tapping fee income exceeding budget, which offset below-budget investment and other income.

Expenses

Expenses, excluding depreciation, were 5.3% over budget. Interest expense was below budget as 52% of paid interest expense was capitalized as project costs. This was offset by above-budget expenditures in Administrative and Treatment Plant expenses. Higher than budgeted legal expenses of \$ 31,000 and amortization of pension liability of \$ 58,000 generated above-budget Administrative expenses. Treatment plant expenses for nutrient credit purchases to remain in compliance with the Authority's discharge permit were over-budget by \$ 62,000 and expenses for sludge disposal were over-budget by \$ 91,000. Above-budget expense for depreciation of \$ 573,000 accounts for 71.2% of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2018 were \$ 141.2 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2018, 2017, and 2016 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2018	2017	2016
Construction in progress	\$ 41,124,606	\$ 24,247,571	\$ 8,328,405
Land	95,181	95,181	95,181
Sewer System			
Lines	102,594,800	99,909,426	99,088,012
Pump stations	38,845,592	33,042,528	32,887,101
Treatment plant	38,193,779	38,039,056	37,266,392
Buildings and improvements	3,640,150	3,640,150	3,199,420
Technology	1,424,091	1,353,402	1,295,369
Vehicles	2,291,170	1,760,826	1,706,256
Equipment	830,745	830,745	830,745
	<u>229,040,114</u>	<u>202,918,885</u>	<u>104,696,881</u>
Total accumulated depreciation	<u>(87,820,739)</u>	<u>(83,211,180)</u>	<u>(78,843,305)</u>
Total Capital Assets	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>	<u>\$ 105,853,576</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2018, 2017, and 2016**

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis

Budgetary Highlights (Continued)

Revenue

In fiscal year 2019, actual revenue exceeded budgeted revenue by \$ 820,000 resulting from sewer rental, investment, and other income exceeding budget. These were partially offset by below-budget revenue in capacity reservation and tapping fee income.

Expenses

Expenses, excluding depreciation, were \$ 1.5 million over budget. Above average rainfall generated a 40% increase in flow through the collection system and treatment plant for the year. Consequently, electricity and chemical costs, sewer treatment costs from the City of Lancaster and the Borough of Columbia, and nutrient credit purchase costs were \$ 1.4 million over budget. When combined with extensive rehabilitation of the centrifuge at the treatment plant, the operating expenses, excluding depreciation, exceeded budget by \$ 1.5 million. Above-budget expense for depreciation of \$ 308,000 accounts for the balance of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2019 were \$ 142.3 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2019, 2018, and 2017 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2019	2018	2017
Construction in progress	\$ 37,011,554	\$ 41,124,606	\$ 24,247,571
Land	95,181	95,181	95,181
Sewer System			
Lines	110,392,727	102,594,800	99,909,426
Pump stations	40,897,235	38,845,592	33,042,520
Treatment plant	38,262,279	38,193,779	38,039,056
Buildings and improvements	3,640,150	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,353,402
Vehicles	2,295,745	2,291,170	1,760,826
Equipment	977,181	830,745	830,745
	<u>234,996,143</u>	<u>229,040,114</u>	<u>202,918,885</u>
Total accumulated depreciation	<u>(92,678,068)</u>	<u>(87,820,739)</u>	<u>(83,211,180)</u>
Total Capital Assets	<u>\$ 142,318,075</u>	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2019, 2018, and 2017**

**LANCASTER AREA SEWER AUTHORITY
Management’s Discussion and Analysis**

In fiscal year 2020, actual revenue was below budgeted revenue by \$ 7,000 resulting from below-budget revenue in sewer rental and surcharges. These were offset by above-budget revenue in capacity reservation and tapping fee income and investment income.

Expenses

Expenses were \$ 127,000 under budget. Above-budget expenses for required equipment maintenance in our collection system were offset by below-budget depreciation costs as well as below-budget expenditures at the treatment plant and laboratory.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority’s total capital assets, net of accumulated depreciation, as of March 31, 2020 were \$ 140.4 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2020, 2019, and 2018 is presented in Table 6 below. Additional information on the Authority’s capital assets can be found in Note 5 of the financial statements.

	2020	2019	2018
Construction in progress	\$ 5,206,076	\$ 37,011,554	\$ 41,124,606
Land	95,181	95,181	95,181
Sewer System			
Lines	112,758,402	110,392,727	102,594,800
Pump stations	41,163,499	40,897,235	38,845,592
Treatment plant	70,517,190	38,262,279	38,193,779
Buildings and improvements	3,669,937	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,424,091
Vehicles	2,346,319	2,295,745	2,291,170
Equipment	996,387	977,181	830,745
	<u>238,177,082</u>	<u>234,996,143</u>	<u>229,040,114</u>
Total accumulated depreciation	<u>(97,771,861)</u>	<u>(92,678,068)</u>	<u>(87,820,739)</u>
Total Capital Assets	<u>\$ 140,405,221</u>	<u>\$ 142,318,075</u>	<u>\$ 141,219,375</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2020, 2019, and 2018**

Debt Administration

As of March 31, 2020, the Authority had \$ 66.4 million of bonds outstanding including \$ 56.5 million in Sewer Revenue Bonds and \$ 9.9 million of bonds through a subsidy agreement with the Borough of Columbia. Unamortized bond premiums of \$ 2.8 million bring the total bonds payable liability to \$ 69.3 million. Bond principal payments of \$ 5.8 million and amortization of bond premiums of \$ 0.3 million reduced the total bonds payable liability by \$ 6.1 million from the March 31, 2019 balance of \$ 75.4 million.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position
March 31, 2021 and 2020

	<u>2021</u>	<u>2020</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 32,955,491	\$ 29,663,969
Accounts receivable, customers (net of allowance for doubtful accounts of \$474,033 in 2021 and 2020)	6,110,790	7,014,694
Unbilled water and sewer service	10,669,704	10,722,797
Surcharges receivable, current portion	350,000	350,000
Other receivables	235,285	216,612
Material and supplies	3,914,453	3,630,945
Prepaid expenses	1,023,104	1,121,573
Total Current Assets	<u>55,258,827</u>	<u>52,720,590</u>
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	857,061,066	813,804,411
Less: accumulated depreciation	(239,562,788)	(225,388,158)
Property, Plant and Equipment, Net	<u>617,498,278</u>	<u>588,416,253</u>
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2021 and 2020	1,166,543	1,465,670
Prepaid bond insurance	920,538	867,810
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	140,795,056	176,264,906
Restricted cash held by the Authority (Note 6)	3,613,385	6,663,291
Total Non-Current Assets	<u>146,495,522</u>	<u>185,261,677</u>
Total Assets	<u>819,252,627</u>	<u>826,398,520</u>
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	-	7,199,443
Changes in assumptions related to pensions	29,403	-
Difference between expected and actual experience related to pensions	549,765	835,078
Contribution to pension plan subsequent to measurement date	51,812	-
Difference between expected and actual experience related to OPEB	16,345	20,431
Changes in assumptions related to OPEB	7,818,150	7,138,277
Deferred losses on bond refundings, net of amortization (Note 8)	3,104,156	3,413,275
Total Deferred Outflows of Resources	<u>11,569,631</u>	<u>18,606,504</u>

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2021 and 2020

	<u>2021</u>	<u>2020</u>
Operating Revenues		
Water	\$ 88,548,010	\$ 86,373,308
Wastewater	17,024,421	16,156,229
Other operating revenues	1,945,458	2,930,304
Total Operating Revenues	<u>107,517,889</u>	<u>105,459,841</u>
Operating Expenses		
Source of supply	1,075,085	1,072,453
Treatment system	8,688,752	8,651,822
Distribution	21,126,537	20,592,367
Engineering	1,674,676	1,599,655
Wastewater system	9,424,097	8,871,707
Landfill	4,842	4,790
Depreciation and amortization	15,777,383	14,151,165
Commercial and general	21,858,960	25,934,541
Management fee	1,350,000	1,300,000
Total Operating Expenses	<u>80,980,332</u>	<u>82,178,500</u>
Operating Income Before Non-Operating Expenses	26,537,557	23,281,341
Non-Operating Revenues (Expenses)		
Investment income	2,891,362	4,775,646
Net increase in the fair value of investments	40,103	43,786
Interest expense	(19,831,042)	(21,188,625)
Loss on disposals of property, plant and equipment	(199,495)	(775,797)
Total Non-Operating Expenses	<u>(17,099,072)</u>	<u>(17,144,990)</u>
Income Before Capital Contributions	9,438,485	6,136,351
Capital Contributions	<u>6,497,060</u>	<u>5,193,678</u>
Increase in Net Position	15,935,545	11,330,029
Total Net Position, Beginning of Fiscal Year	<u>156,507,789</u>	<u>145,177,760</u>
Total Net Position, End of Fiscal Year	<u>\$ 172,443,334</u>	<u>\$ 156,507,789</u>

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position
March 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 29,663,969	\$ 27,812,712
Accounts receivable, customers (net of allowance for doubtful accounts of \$474,033 in 2020 and \$473,827 in 2019)	7,014,694	6,547,940
Unbilled water and sewer service	10,722,797	9,852,958
Surcharges receivable, current portion	350,000	350,000
Other receivables	216,612	498,933
Material and supplies	3,630,945	2,868,304
Prepaid expenses	1,121,573	352,547
Total Current Assets	<u>52,720,590</u>	<u>48,283,394</u>
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	816,019,835	767,648,700
Less: accumulated depreciation	(225,388,158)	(213,403,548)
Property, Plant and Equipment, Net	<u>590,631,677</u>	<u>554,245,152</u>
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2020 and 2019	1,465,670	1,509,942
Prepaid bond insurance	867,810	913,328
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	176,264,906	207,837,151
Restricted cash held by the Authority (Note 6)	6,663,291	16,415,126
Total Non-Current Assets	<u>185,261,677</u>	<u>226,675,547</u>
Total Assets	<u>828,613,944</u>	<u>829,204,093</u>
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	7,199,443	30,552
Changes in assumptions related to pensions	-	57,541
Difference between expected and actual experience related to pensions	835,078	602,541
Contribution to pension plan subsequent to measurement date	-	150,548
Difference between expected and actual experience related to OPEB	20,431	24,517
Changes in assumptions related to OPEB	7,138,277	1,501,026
Deferred losses on bond refundings, net of amortization (Note 8)	3,413,275	4,283,283
Total Deferred Outflows of Resources	<u>18,606,504</u>	<u>6,650,008</u>

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position
March 31, 2019 and 2018

	<u>2019</u>	<u>Restated 2018</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 27,812,712	\$ 19,209,356
Accounts receivable, customers (net of allowance for doubtful accounts of \$473,827 in 2019 and \$470,533 in 2018)	6,547,940	6,298,373
Unbilled water and sewer service	9,852,958	9,851,714
Surcharges receivable, current portion	350,000	350,000
Other receivables	498,933	1,070,190
Inventory - material and supplies	2,868,304	2,515,551
Prepaid expenses	352,547	200,121
Total Current Assets	48,283,394	39,495,305
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	767,648,700	711,563,565
Less: accumulated depreciation	(213,403,548)	(201,495,896)
Property, Plant and Equipment, Net	554,245,152	510,067,669
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2019 and 2018	1,509,942	1,653,673
Prepaid bond insurance	913,328	958,845
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	207,837,151	234,717,525
Restricted cash held by the Authority (Note 6)	16,415,126	19,597,310
Total Non-Current Assets	226,675,547	256,927,353
Total Assets	829,204,093	806,490,327
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	30,552	-
Changes in assumptions related to pensions	57,541	77,283
Difference between expected and actual experience related to pensions	602,541	825,024
Contribution to pension plan subsequent to measurement date	150,548	56,041
Difference between expected and actual experience related to OPEB	24,517	-
Changes in assumptions related to OPEB	1,501,026	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,283,283	4,612,214
Total Deferred Outflows of Resources	6,650,008	5,570,562

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position

March 31, 2018 and 2017

	<u>2018</u>	<u>2017</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 19,209,356	\$ 15,067,865
Accounts receivable, customers (net of allowance for doubtful accounts of \$470,533 in 2018 and \$458,506 in 2017)	6,298,373	5,597,012
Unbilled water and sewer service	9,851,714	9,777,602
Surcharges receivable, current portion	350,000	350,000
Other receivables	1,070,190	5,178,590
Inventory - material and supplies	2,515,551	2,289,998
Prepaid expenses	<u>200,121</u>	<u>129,312</u>
 Total Current Assets	39,495,305	38,390,379
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	711,563,565	662,320,792
Less: accumulated depreciation	<u>(201,495,896)</u>	<u>(189,824,163)</u>
 Property, Plant and Equipment, net	510,067,669	472,496,629
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2018 and 2017	1,653,673	1,959,138
Prepaid bond insurance	958,845	596,655
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	234,717,525	254,963,842
Restricted cash held by authority (Note 6)	<u>19,597,310</u>	<u>19,003,328</u>
 Total Non-Current Assets	256,927,353	276,522,963
 Total Assets	806,490,327	787,409,971
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	-	170,728
Changes in assumptions related to pensions	77,283	-
Difference between expected and actual experience related to pensions	825,024	104,074
Contribution to pension plan subsequent to measurement date	56,041	-
Deferred losses on bond refundings, net of amortization (Note 8)	<u>4,612,214</u>	<u>1,205,212</u>
 Total Deferred Outflows of Resources	5,570,562	1,480,014

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Operating Revenues		
Water	\$ 86,373,308	\$ 86,597,707
Wastewater	16,156,229	15,286,438
Other operating revenues	2,930,304	5,450,849
Total Operating Revenues	<u>105,459,841</u>	<u>107,334,994</u>
Operating Expenses		
Source of supply	1,072,453	935,776
Treatment system	8,651,822	8,810,618
Distribution	20,592,367	18,735,370
Engineering	1,599,655	1,530,906
Wastewater system	8,871,707	8,444,588
Landfill	4,790	4,765
Depreciation and amortization	14,151,165	13,433,385
Commercial and general	25,934,541	27,059,890
Management fee	1,300,000	1,300,000
Total Operating Expenses	<u>82,178,500</u>	<u>80,255,298</u>
Operating Income Before Non-Operating Expenses	<u>23,281,341</u>	<u>27,079,696</u>
Non-Operating Revenues (Expenses)		
Investment income	4,775,646	4,943,913
Net increase in the fair value of investments	43,786	20,450
Interest expense	(21,188,625)	(20,975,541)
Loss on disposals of property, plant and equipment	(775,797)	(403,367)
Total Non-Operating Expenses	<u>(17,144,990)</u>	<u>(16,414,545)</u>
Income Before Capital Contributions	6,136,351	10,665,151
Capital Contributions	5,193,678	6,523,749
Increase in Net Position	11,330,029	17,188,900
Total Net Position, Beginning of Fiscal Year	<u>145,177,760</u>	<u>127,988,860</u>
Total Net Position, End of Fiscal Year	<u>\$ 156,507,789</u>	<u>\$ 145,177,760</u>

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2019 and 2018

	<u>2019</u>	<u>Restated 2018</u>
Operating Revenues		
Water	\$ 86,597,707	\$ 81,638,410
Wastewater	15,286,438	14,901,786
Other operating revenues	5,450,849	3,527,303
Total Operating Revenues	<u>107,334,994</u>	<u>100,067,499</u>
Operating Expenses		
Source of supply	935,776	865,364
Treatment system	8,810,618	8,002,831
Distribution	18,735,370	17,775,014
Engineering	1,530,906	1,307,465
Wastewater system	8,444,588	8,509,813
Landfill	4,765	43,367
Depreciation and amortization	13,433,385	12,577,264
Commercial and general	27,059,890	28,228,521
Management fee	1,300,000	1,225,000
Total Operating Expenses	<u>80,255,298</u>	<u>78,534,639</u>
Operating Income Before Non-Operating Revenues	<u>27,079,696</u>	<u>21,532,860</u>
Non-Operating Revenues (Expenses)		
Investment income	4,943,913	3,535,070
Net increase (decrease) in the fair value of investments	20,450	(407,750)
Interest expense	(20,975,541)	(15,262,836)
Loss on disposals of property	(403,367)	(336,175)
Total Non-Operating Expenses	<u>(16,414,545)</u>	<u>(12,471,691)</u>
Income Before Capital Contributions	10,665,151	9,061,169
Capital Contributions	<u>6,523,749</u>	<u>13,400,327</u>
Increase in Net Position	17,188,900	22,461,496
Total Net Position, Beginning of Fiscal Year	127,988,860	135,957,658
Prior Period Adjustment, see Note 19	<u>-</u>	<u>(30,430,294)</u>
Total Net Position, End of Fiscal Year	<u>\$ 145,177,760</u>	<u>\$ 127,988,860</u>

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2018 and 2017

	<u>2018</u>	<u>2017</u>
Operating Revenues		
Water	\$ 81,638,410	\$ 77,440,502
Wastewater	14,901,786	14,121,562
Other operating revenues	3,527,303	2,858,021
Total Operating Revenues	100,067,499	94,420,085
Operating Expenses		
Source of supply	865,364	861,886
Treatment system	8,002,831	8,006,826
Distribution	17,775,014	17,459,687
Engineering	1,307,465	1,271,392
Wastewater system	8,509,813	7,632,386
Landfill	43,367	12,005
Depreciation and amortization	12,577,264	11,562,121
Commercial and general	28,228,521	25,817,145
Management fee	1,225,000	1,200,000
Total Operating Expenses	78,534,639	73,823,448
Operating Income Before Non-Operating Revenues	21,532,860	20,596,637
Non-Operating Revenues (Expenses)		
Investment income	3,535,070	3,225,914
Net increase (decrease) in the fair value of investments	(407,750)	431,964
Interest expense	(15,262,836)	(15,032,096)
Loss on disposals of property	(336,175)	(1,732,987)
Total Non-Operating Expenses	(12,471,691)	(13,107,205)
Income Before Capital Contributions	9,061,169	7,489,432
Capital Contributions	13,400,327	13,432,729
Increase in Net Position	22,461,496	20,922,161
Total Net Position, Beginning of Year	135,957,658	115,035,497
Total Net Position, End of Year	\$ 158,419,154	\$ 135,957,658

See accompanying notes to the financial statements.

**ERIE CITY WATER AUTHORITY
(AKA ERIE WATER WORKS)**

Statement of Net Position

December 31, 2020 and 2019

	2020	2019
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES		
Current Assets		
Cash and cash equivalents	\$ 15,840,370	\$ 12,385,206
Restricted cash - workers' compensation fund	279,455	338,915
Investments - cash and certificates of deposit (at par)	795,109	846,875
Receivables - customers, net	5,791,611	3,974,224
Current portion of customer receivables	19,600	19,600
Inventories, at cost	1,549,331	1,627,035
Prepaid expenses	1,340,963	865,774
Total current assets	25,616,439	20,057,629
Non-Current Assets		
Restricted investments		
Amount provided for retirement of long-term debt	7,686,000	8,864,436
Amount provided for future system improvements	11,941,433	19,881,874
Board designated reserve for capital expenditures	5,000,000	5,000,000
Investment in self-liquidity bonds	5,225,000	5,325,000
Long-term customer receivables	117,932	137,221
Capital assets, net of accumulated depreciation		
Contributed capital assets	2,508,257	2,829,653
Purchased capital assets	197,500,684	191,269,705
Total non-current assets	229,979,306	233,307,889
Total assets	255,595,745	253,365,518
Deferred Outflows of Resources		
Deferred City of Erie lease payments	103,067,058	5,033,530
Changes in pension experience	1,753,594	1,254,876
Changes in pension investment returns	-	-
Changes in pension assumptions	1,969,111	2,724,471
Deferred loss on advanced bond refunding, net	23,376,680	11,836,635
Deferred bond swap fee, net	11,179,830	11,912,546
Total deferred outflow of resources	141,346,273	32,762,058
Total assets and deferred outflow of resources	\$ 396,942,018	\$ 286,127,576

The notes to the financial statements are an integral part of these statements.

ERIE CITY WATER AUTHORITY
(AKA ERIE WATER WORKS)
Statement of Revenues, Expenses and Changes in Net Position
December 31, 2020 and 2019

	<u>2020</u>	<u>2019</u>
Operating revenues	<u>\$ 40,725,085</u>	<u>\$ 40,086,711</u>
Operating expenses		
Personnel	6,112,365	6,345,483
Personnel benefits	3,504,971	4,689,942
Supplies and materials	2,012,909	2,010,029
Other services and charges	5,037,083	5,498,375
City of Erie lease	<u>2,850,000</u>	<u>3,600,000</u>
Total operating expenses	<u>19,517,328</u>	<u>22,143,829</u>
Operating income before depreciation	21,207,757	17,942,882
Depreciation	<u>7,746,138</u>	<u>8,393,230</u>
Operating income	13,461,619	9,549,652
Non-operating revenue (expense)		
Interest expense	(13,588,313)	(12,123,859)
Other revenue (expense), net	<u>(153,290)</u>	<u>1,651,260</u>
Net loss before contributed capital	(279,984)	(922,947)
Capital asset contributions	<u>-</u>	<u>-</u>
CHANGE IN NET POSITION	(279,984)	(922,947)
Net Position		
Beginning of year	<u>(55,786,094)</u>	<u>(54,863,147)</u>
End of year	<u>\$ (56,066,078)</u>	<u>\$ (55,786,094)</u>

The notes to the financial statements are an integral part of these statements.

Erie City Water Authority
Statements of Financial Position

	As of December 31,			
	2019	2018	Change	% Change
ASSETS				
Current assets	\$ 20,057,629	\$ 17,026,267	\$ 3,031,362	17.80%
Restricted investments	28,746,310	32,386,195	(3,639,885)	-11.24%
Capital assets, net of accumulated depreciation	194,099,358	191,070,499	3,028,859	1.59%
Other non-current assets	10,462,221	10,481,961	(19,740)	-0.19%
Deferred outflows of resources	32,762,058	34,530,203	(1,768,145)	-5.12%
Total Assets and Deferred Outflows	\$ 286,127,576	\$ 285,495,125	\$ 632,451	0.22%
LIABILITIES AND NET POSITION				
Current liabilities	\$ 7,175,123	\$ 8,766,073	\$ (1,590,950)	-18.15%
Long-term debt, net of unaccrued discounts	306,968,863	310,547,787	(3,578,924)	-1.15%
Other non-current liabilities	25,881,649	21,044,412	4,837,237	22.99%
Deferred inflow of resources	1,888,035	-	1,888,035	0.00%
Total liabilities and deferred inflow of resources	341,913,670	340,358,272	1,555,398	0.46%
Net position -				
Net investment in capital assets	15,948,959	11,468,894	4,480,065	39.06%
Restricted for capital projects, debt service	8,864,436	9,849,537	(985,101)	-10.00%
Unrestricted	(80,599,489)	(76,181,578)	(4,417,911)	5.80%
Total net position	(55,786,094)	(54,863,147)	(922,947)	1.68%
Total liabilities and net position	\$ 286,127,576	\$ 285,495,125	\$ 632,451	0.22%

Changes in Net Position –

The Authority's net position decreased by \$922,947 in 2019. The 2019 decrease in the net position resulted from several factors related to materials and supplies costs and personnel related costs that was offset by savings on interest expense.

Total operating revenues for the year ended December 31, 2019 of \$40,086,711 increased \$316,562 (0.80%) compared to December 31, 2018.

Total operating expenses of \$22,143,829 increased \$756,012 (3.53%).

Total 2019 expenses of \$42,660,918 compared to \$44,001,398 in 2018 decreased \$1,340,480 (11.11%).

Erie City Water Authority

(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

December 31, 2018 and 2017

to \$285.50 million. Total liabilities and inflows increased \$36.14 million [11.88%] to \$340.36 million. The primary reasons for the increase are discussed in the following *Changes in Net Position* section.

Restricted investments of \$32.39 million increased \$21.03 million [285.19%], primarily from \$27 million of new capital project funds from the 2018 bond issue.

Capital assets (net of depreciation) increased \$3.09 million. Gross capital assets (before depreciation) increased \$11.47 million representing capital additions in accordance with the Authority's adopted capital project program.

**ERIE CITY WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION**

	As of December 31,			
	2018	2017	\$ Change	% Change
ASSETS				
Current assets	\$ 17,026,267	\$ 13,116,705	\$ 3,909,562	29.8%
Restricted investments	32,386,195	11,356,255	21,029,940	185.2%
Capital assets, net of accumulated depreciation	191,070,499	187,981,855	3,088,644	1.6%
Other non-current assets	10,481,961	10,665,706	(183,745)	(1.7%)
Deferred outflows of resources	34,530,203	30,999,314	3,530,889	11.4%
Total Assets and Deferred Outflows	\$ 285,495,125	\$ 254,119,835	\$ 31,375,290	12.3%
LIABILITIES AND NET ASSETS				
As of December 31,				
	2018	2017	\$ Change	% Change
Current liabilities	\$ 8,766,073	\$ 7,893,978	\$ 872,095	29.8%
Long-term debt, net of unaccrued discounts	310,547,787	284,395,079	26,152,708	9.2%
Other non-current liabilities	21,044,412	11,930,218	(9,114,194)	76.4%
Deferred inflow of resources	-	1,113,991	(1,113,991)	-
Total liabilities and deferred outflow of resources	340,358,272	305,333,266	35,025,006	11.5%
Net position –				
Invested in capital assets, net of related debt	11,468,894	7,320,870	4,148,024	56.7%
Restricted for capital projects, debt service	9,849,537	7,691,083	2,158,454	28.1%
Unrestricted	(76,181,578)	(66,225,384)	(9,956,194)	(15.0%)
Total net position	(54,863,147)	(51,213,431)	(3,649,716)	(7.1%)
Total liabilities and net position	\$ 285,495,125	\$ 254,119,835	(\$ 31,375,290)	(12.3%)

Changes in Net Position –

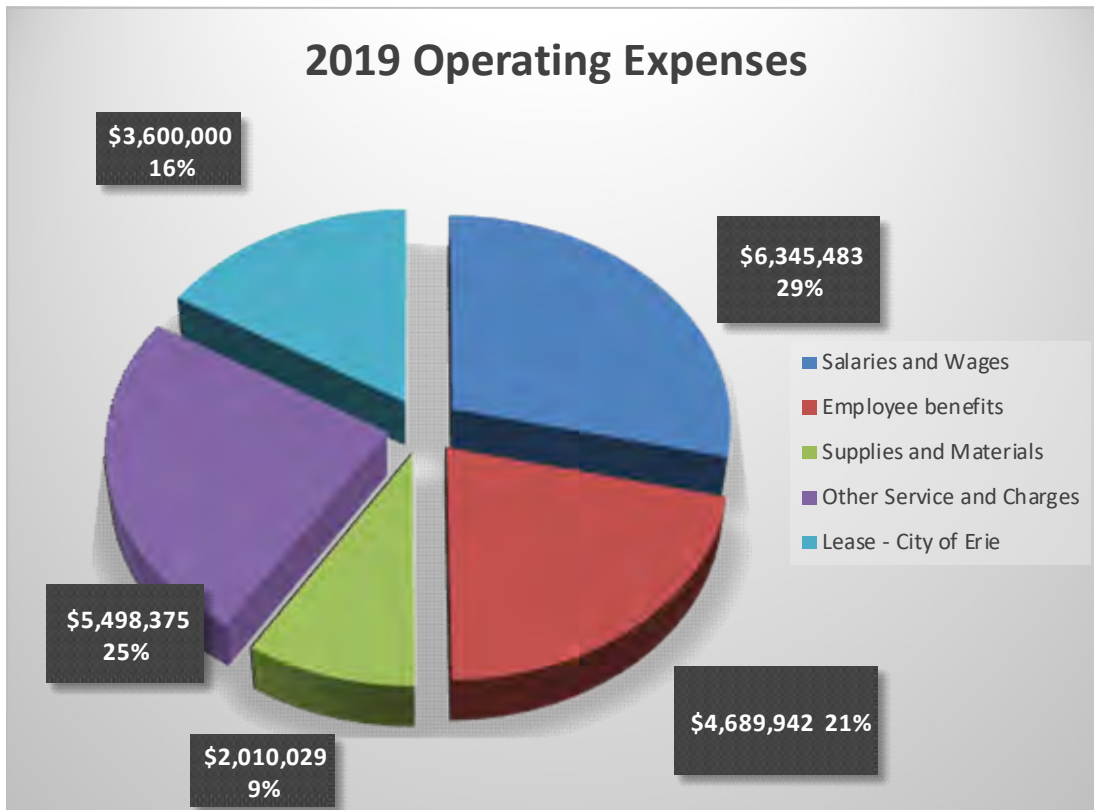
The Authority's net position decreased by <\$3.65> million in 2018, compared to a <\$.84> million decrease in 2017. The 2018 decrease in the net position resulted from several factors – \$1.84 million increase in pension costs, \$1.1 million increase in interest expense and \$1.03 million of bond issue costs.

Total operating revenues for the year ended December 31, 2018 of \$39.8 million increased \$1.3 million [3.3%] compared to December 31, 2017.

Total operating expenses of \$21.4 million increased \$2.48 million [13.1%]. The majority of the

ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	For the year ended December 31,			
	2019	2018	Change	% Change
Operations				
Operating revenues	\$ 40,086,711	\$ 39,770,149	\$ 316,562	0.80%
Operating expenses	(22,143,829)	(21,387,817)	(756,012)	3.53%
Depreciation	(8,393,230)	(8,377,223)	(16,007)	0.19%
Operating income	\$ 9,549,652	\$ 10,005,109	\$ (455,457)	-4.55%
Non-operating revenue (expense)				
Interest expense	\$ (12,123,859)	\$ (14,236,358)	\$ 2,112,499	-14.84%
Other revenues	2,302,321	1,948,092	354,229	18.18%
Other expenses	(651,061)	(1,446,534)	795,473	-54.99%
	(10,472,599)	(13,734,800)	3,262,201	-23.75%
Net loss before capital contributions	(922,947)	(3,729,691)	2,806,744	-75.25%
Capital assets contributions	-	79,975	(79,975)	-100.00%
Change in net position	\$ (922,947)	\$ (3,649,716)	\$ 2,726,769	-74.71%



Erie City Water Authority

(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

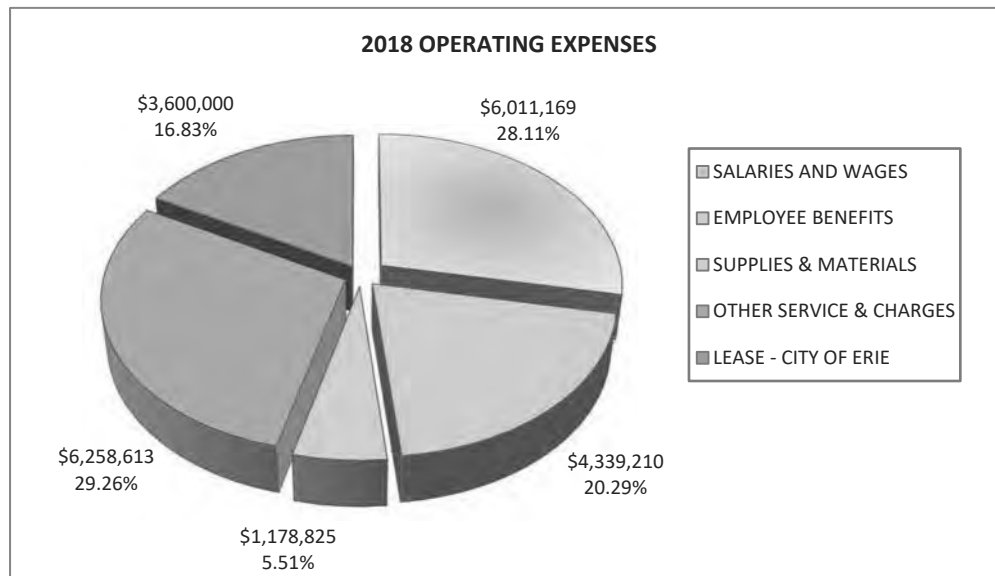
December 31, 2018 and 2017

2018 decrease in operating expenses was attributable to higher pension costs and contracted services.

Total 2018 expenses of \$44.0 million \$40.3 million increased \$3.7 million [9.18%] compared to 2017.

**ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**

	For the year ended December 31,			
	2018	2017	\$ Change	% Change
Operations -				
Operating revenues	\$ 39,770,149	\$ 38,483,311	\$ 1,286,838	3.3%
Operating expenses	(21,387,817)	(18,912,253)	2,475,564	13.1%
Depreciation	(8,377,223)	(8,214,879)	162,344	(2.0%)
Operating income	<u>10,005,109</u>	<u>11,356,179</u>	1,351,070	(11.9%)
Non-operating revenue (expense)				
Interest expense	(14,236,358)	(13,165,069)	1,071,289	8.1%
Other revenues	1,948,092	1,326,328	621,764	46.9%
Other expenses	(1,446,534)	(354,727)	1,091,807	307.8%
	<u>(13,734,800)</u>	<u>(12,193,468)</u>	1,541,332	12.6%
Net loss before capital contributions	(3,729,691)	(837,289)	(2,892,402)	(345.4%)
Capital asset contributions	79,975		79,975	-
Change in net position	<u>(\$ 3,649,716)</u>	<u>(\$ 837,289)</u>	<u>(\$ 2,812,427)</u>	<u>(335.9%)</u>



Chester Water Authority
Statements of Net Position
December 31, 2019 and 2018

Assets and Deferred Outflows of Resources

	December 31,	
	<u>2019</u>	<u>2018</u>
<u>Current Assets</u>		
Cash and cash equivalents	\$ 12,498,028	\$ 9,680,971
Investments	1,224,596	1,207,385
Accounts receivable, net of allowance for doubtful accounts of \$300,000 in both 2019 and 2018	4,715,593	4,215,519
Unbilled revenue	4,184,067	4,143,347
Materials and supplies	2,392,807	2,894,794
Other current assets	225,137	44,735
Total Current Assets	25,240,228	22,186,751
<u>Non-Current Assets</u>		
Property, plant, and equipment—net of accumulated depreciation	282,114,520	277,881,505
Net pension asset	806,245	-
Total Non-Current Assets	282,920,765	277,881,505
<u>Restricted Assets</u>		
Cash and cash equivalents	28,304,535	7,629,992
Total Restricted Assets	28,304,535	7,629,992
Total Assets	336,465,528	307,698,248
<u>Deferred Outflows of Resources</u>		
Changes in pension investment returns and actuarial assumptions	1,134,806	4,646,383
Changes in OPEB investment returns and actuarial assumptions	1,912,766	420,158
Total Deferred Outflows of Resources	3,047,572	5,066,541
<u>Total Assets and Deferred Outflows of Resources</u>	\$ 339,513,100	\$ 312,764,789

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2019 and 2018

	December 31,	
	<u>2019</u>	<u>2018</u>
<u>Operating Revenues</u>		
Residential	\$ 16,511,126	\$ 16,270,379
Commercial	7,179,069	7,006,726
Industrial	9,832,034	8,262,780
Fire protection	4,063,901	3,902,103
Capacity charges, flat and late fee revenues	1,374,484	1,134,612
Sales to other water utilities	6,802,562	6,749,553
Total Operating Revenues	45,763,176	43,326,153
<u>Operating Expenses</u>		
Purification and Pumping	7,409,809	7,479,180
Distribution	6,687,166	7,989,652
Administrative	13,672,346	12,605,483
Finance/customer service, billing and collections	3,834,971	4,189,300
Depreciation	9,453,690	9,575,108
Total Operating Expenses	41,057,982	41,838,723
<u>Operating Income</u>	4,705,194	1,487,430
<u>Non-Operating Revenues/(Expenses)</u>		
Net investment income	155,689	131,632
Interest expense	(2,810,444)	(2,776,729)
Other nonoperating revenues	311,563	514,232
Amortization of bond discounts and debt issuance costs	479,795	401,140
Gain (loss) on disposal of property and equipment	302,194	17,882
Total Non-Operating Revenues/(Expenses)	(1,561,203)	(1,711,843)
<u>Income (Loss) Before Contributions</u>	3,143,991	(224,413)
<u>Capital Contributions</u>	894,723	5,652,845
<u>Change In Net Position</u>	4,038,714	5,428,432
<u>Net Position - Beginning of year, as previously reported</u>	234,034,302	233,538,507
<u>Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability</u>	-	(4,932,637)
<u>Net Position - Beginning of year, restated</u>	234,034,302	228,605,870
<u>Net Position - End of year</u>	\$ 238,073,016	\$ 234,034,302

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2018 and 2017

Assets and Deferred Outflows of Resources

	December 31,	
	2018	2017
<u>Current Assets</u>		
Cash and cash equivalents	\$ 9,680,971	\$ 12,277,333
Investments	1,207,385	1,185,056
Accounts receivable, net of allowance for doubtful accounts of \$300,000 in both 2018 and 2017	4,215,519	4,018,123
Unbilled revenue	4,143,347	4,100,936
Materials and supplies	2,894,794	2,438,785
Other current assets	44,734	72,551
Total Current Assets	22,186,750	24,092,784
<u>Non-Current Assets</u>		
Property, plant, and equipment—net of accumulated depreciation	277,881,505	271,133,389
Net pension asset	-	1,501,182
Total Non-Current Assets	277,881,505	272,634,571
<u>Restricted Assets</u>		
Cash and cash equivalents	7,629,992	7,549,260
Total Restricted Assets	7,629,992	7,549,260
Total Assets	307,698,247	304,276,615
<u>Deferred Outflows of Resources</u>		
Changes in pension investment returns and actuarial assumptions	4,646,383	1,479,458
Changes in OPEB investment returns and actuarial assumptions	420,158	-
Total Deferred Outflows of Resources	5,066,541	1,479,458
<u>Total Assets and Deferred Outflows of Resources</u>	\$ 312,764,788	\$ 305,756,073

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes in Net Position
For The Years Ended December 31, 2018 and 2017

	December 31.	
	<u>2018</u>	<u>2017</u>
<u>Operating Revenues</u>		
Residential	\$ 16,270,379	\$ 16,471,074
Commercial	7,006,726	5,885,341
Industrial	8,262,780	7,414,215
Fire protection	3,902,103	4,001,045
Capacity charges, flat and late fee revenues	1,134,612	1,360,899
Sales to other water utilities	6,749,553	7,158,892
Total Operating Revenues	<u>43,326,153</u>	<u>42,291,466</u>
<u>Operating Expenses</u>		
Purification and Pumping	7,479,180	7,326,031
Distribution	7,989,652	7,159,659
Administrative	12,605,483	11,664,820
Finance/customer service, billing and collections	4,189,300	3,824,583
Depreciation	9,575,108	9,521,150
Total Operating Expenses	<u>41,838,723</u>	<u>39,496,243</u>
<u>Operating Income</u>	<u>1,487,430</u>	<u>2,795,223</u>
<u>Non-Operating Revenues (Expenses)</u>		
Net investment income	131,632	146,144
Interest expense	(2,776,729)	(2,681,713)
Other nonoperating revenues	514,231	982,798
Amortization of bond discounts and debt issuance costs	401,140	250,136
Gain (loss) on disposal of property and equipment	17,882	(481,900)
Total Non-Operating Revenues/(Expenses)	<u>(1,711,844)</u>	<u>(1,784,535)</u>
<u>(Loss) Income Before Contributions</u>	<u>(224,414)</u>	<u>1,010,688</u>
<u>Capital Contributions</u>	<u>5,652,845</u>	<u>2,699,498</u>
<u>Change in Net Position</u>	<u>5,428,431</u>	<u>3,710,186</u>
<u>Net Position—Beginning of year, as previously reported</u>	<u>233,538,507</u>	<u>229,828,321</u>
<u>Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability</u>	<u>(4,932,637)</u>	<u>-</u>
<u>Net Position - Beginning of year, restated</u>	<u>228,605,870</u>	<u>229,828,321</u>
<u>Net Position—End of year</u>	<u>\$ 234,034,301</u>	<u>\$ 233,538,507</u>

See accompanying notes to financial statements.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2020 AND 2019

<u>Assets</u>	<u>2020</u>	<u>2019</u>
Current assets:		
Cash and cash equivalents	\$ 60,210	\$ 64,680
Accounts receivable, net:		
Water:		
Billed	7,400	7,138
Unbilled	7,955	8,965
Total water	15,355	16,103
Wastewater treatment:		
Billed	3,676	2,130
Unbilled	3,457	3,725
Total wastewater treatment	7,133	5,855
Other receivables	1,924	2,450
Total accounts receivable, net	24,412	24,408
Prepaid expenses	1,737	707
Inventory	2,075	1,597
Total current assets	88,434	91,392
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	16,201	16,360
Investments	9,705	9,604
Total restricted assets	25,906	25,964
Capital assets, not being depreciated	155,050	135,287
Capital assets, net of accumulated depreciation	766,600	695,291
Total noncurrent assets	947,556	856,542
Total Assets	1,035,990	947,934
Deferred Outflows of Resources		
Deferred charge on refunding	91,827	99,012
Accumulated decrease in fair value of hedging derivatives	33,863	13,351
Total Deferred Outflows of Resources	125,690	112,363

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2020 AND 2019

	2020	2019
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 162,676	\$ 171,681
Wastewater treatment	71,899	70,970
Other	7,422	6,398
Total operating revenues	241,997	249,049
Operating Expenses:		
Direct operating expenses	92,134	89,512
Wastewater treatment	72,698	72,389
Reimbursement for City of Pittsburgh indirect services	4,289	1,991
Expense of water provided by other entities	386	1,338
Depreciation	21,659	18,011
Total operating expenses	191,166	183,241
Operating Income	50,831	65,808
Non-operating Revenues (Expenses):		
Federal and private grants	7,001	6,922
Interest revenue	201	719
Investment income (loss) - change in fair value of swap	-	(4,180)
Interest and amortization	(37,463)	(38,740)
Bond issuance costs	(2,075)	(2,462)
Total non-operating revenues (expenses)	(32,336)	(37,741)
Net Income before Capital Contribution and Special Item	18,495	28,067
Capital Contribution:		
Donated property	76	110
Special Item:		
Private lead line replacement	(18,832)	(22,283)
Net Income (Loss)	(261)	5,894
Net Position:		
Beginning of year	1,535	(4,359)
End of year	\$ 1,274	\$ 1,535

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2019 AND 2018

Assets	2019	2018
Current assets:		
Cash and cash equivalents	\$ 64,680	\$ 46,920
Accounts receivable, net:		
Water:		
Billed	7,138	8,537
Unbilled	8,965	8,583
Total water	16,103	17,120
Wastewater treatment:		
Billed	2,130	7,014
Unbilled	3,725	3,719
Total wastewater treatment	5,855	10,733
Other receivables	2,450	1,510
Total accounts receivable, net	24,408	29,363
Prepaid expenses	707	520
Inventory	1,597	1,984
Total current assets	91,392	78,787
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	16,360	13,970
Investments	9,604	9,356
Total restricted assets	25,964	23,326
Hedging derivative - interest rate swap	-	4,750
Capital assets, not being depreciated	135,287	139,303
Capital assets, net of accumulated depreciation	695,291	618,177
Total noncurrent assets	856,542	785,556
Total Assets	947,934	864,343
Deferred Outflows of Resources		
Deferred charge on refunding	99,012	102,534
Accumulated decrease in fair value of hedging derivatives	13,351	757
Total Deferred Outflows of Resources	112,363	103,291

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2019 AND 2018

	2019	2018
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 171,681	\$ 159,506
Wastewater treatment	70,970	67,261
Other	6,398	4,967
Total operating revenues	249,049	231,734
Operating Expenses:		
Direct operating expenses	89,512	72,633
Wastewater treatment	72,389	71,822
Reimbursement for City of Pittsburgh services	1,991	4,911
Expense of water provided by other entities:		
Subsidy of customers located in the City	1,338	3,814
Depreciation	18,011	16,894
Total operating expenses	183,241	170,074
Operating Income	65,808	61,660
Non-operating Revenues (Expenses):		
Federal and private grants	6,922	-
Donated property	110	13,649
Interest revenue	719	469
Investment income (loss) - change in fair value of swap	(4,180)	2,542
Interest and amortization	(38,740)	(34,365)
Bond issuance costs	(2,462)	-
Total non-operating revenues (expenses)	(37,631)	(17,705)
Net Income before Special Item	28,177	43,955
Special Item:		
Private lead line replacement	(22,283)	(4,478)
Net Income	5,894	39,477
Net Position:		
Beginning of year	(4,359)	(43,836)
End of year	\$ 1,535	\$ (4,359)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2018 AND 2017

<u>Assets</u>	<u>2018</u>	<u>2017</u>
Current assets:		
Cash and cash equivalents	\$ 46,920	\$ 11,076
Accounts receivable, net:		
Water:		
Billed	8,537	9,335
Unbilled	8,583	6,760
Total water	<u>17,120</u>	<u>16,095</u>
Wastewater treatment:		
Billed	7,014	9,975
Unbilled	3,719	3,746
Total wastewater treatment	<u>10,733</u>	<u>13,721</u>
Other receivables	<u>1,510</u>	<u>1,074</u>
Total accounts receivable, net	<u>29,363</u>	<u>30,890</u>
Prepaid expenses	520	674
Inventory	<u>1,984</u>	<u>3,777</u>
Total current assets	<u>78,787</u>	<u>46,417</u>
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	13,970	18,264
Investments	<u>9,356</u>	<u>11,684</u>
Total restricted assets	<u>23,326</u>	<u>29,948</u>
Hedging derivative - interest rate swap	4,750	-
Capital assets, not being depreciated	139,303	100,240
Capital assets, net of accumulated depreciation	<u>618,177</u>	<u>589,567</u>
Total noncurrent assets	<u>785,556</u>	<u>719,755</u>
Total Assets	<u>864,343</u>	<u>766,172</u>
Deferred Outflows of Resources		
Deferred charge on refunding	102,534	110,326
Accumulated decrease in fair value of hedging derivatives	<u>757</u>	<u>3,279</u>
Total Deferred Outflows of Resources	<u>103,291</u>	<u>113,605</u>

(Continued)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 159,506	\$ 128,488
Wastewater treatment	67,261	68,935
Other	4,967	5,573
Total operating revenues	231,734	202,996
Operating Expenses:		
Direct operating expenses	72,633	71,156
Wastewater treatment	71,822	75,107
Reimbursement for City of Pittsburgh services	4,911	5,363
Expense of water provided by other entities:		
Subsidy of customers located in the City	3,814	5,594
Depreciation	16,894	16,172
Total operating expenses	170,074	173,392
Operating Income	61,660	29,604
Non-operating Revenues (Expenses):		
Donated property	13,649	1,595
Interest revenue	469	460
Investment income (loss) - change in fair value of swap	2,542	835
Interest and amortization	(34,365)	(34,913)
Bond issuance costs	-	(3,894)
Total non-operating revenues (expenses)	(17,705)	(35,917)
Special Item:		
Private lead line replacement	(4,478)	-
Net Income (Loss)	39,477	(6,313)
Net Position:		
Beginning of year	(43,836)	(37,523)
End of year	\$ (4,359)	\$ (43,836)

The notes to financial statements are an integral part of this statement.

Handy-Whitman Handy-Whitman

Line #	Line #
34	39

1912	7	6
1913	9	6
1914	10	5
1915	8	6
1916	9	6
1917	11	9
1918	16	10
1919	19	11
1920	20	12
1921	22	13
1922	22	12
1923	20	12
1924	21	13
1925	22	13
1926	21	13
1927	21	13
1928	21	13
1929	20	14
1930	20	14
1931	20	14
1932	18	13
1933	18	11
1934	19	12
1935	19	13
1936	20	13
1937	21	14
1938	22	14

Handy-Whitman Handy-Whitman

Line #	Line #
34	39
1939	14
1940	14
1941	15
1942	16
1943	16
1944	17
1945	17
1946	19
1947	22
1948	41
1949	27
1950	28
1951	29
1952	31
1953	33
1954	35
1955	36
1956	0
1957	41
1958	44
1959	46
1960	48
1961	50
1962	51
1963	53
1964	55
1965	58
1966	60
1967	63
1968	66
1969	72
22	22
24	24
0	0
0	0
0	0
25	25
26	26
29	29
35	35
41	41
42	42
43	43
45	45
47	47
48	48
48	48
53	53
57	57
60	60
63	63
65	65
68	68
69	69
71	71
72	72
73	73
74	74
75	75
76	76
77	77
80	80

Handy-Whitman Handy-Whitman

Line #	Line #
34	39
1970	79
1971	89
1972	96
1973	100
1974	115
1975	123
1976	130
1977	139
1978	145
1979	160
1980	175
1981	184
1982	198
1983	207
1984	215
1985	221
1986	226
1987	230
1988	245
1989	258
1990	262
1991	272
1992	283
1993	292
1994	300
1995	307
1996	321
1997	323
1998	330
	84
	94
	98
	100
	110
	146
	154
	162
	173
	185
	202
	219
	231
	239
	244
	254
	255
	263
	280
	295
	301
	307
	311
	321
	327
	332
	339
	347
	355

Handy-Whitman Handy-Whitman

Line #	Line #
1999	361
2000	377
2001	391
2002	404
2003	407
2004	432
2005	469
2006	499
2007	530
2008	588
2009	614
2010	624
2011	648
2012	687
2013	701
2014	731
2015	740
2016	755
2017	777
2018	803
2019	830
2020	858
2021	922
2022	1012
2023	1021
SPOT	1021
	334
	348
	354
	360
	368
	388
	410
	454
	485
	514
	537
	555
	576
	598
	602
	608
	618
	624
	650
	668
	688
	705
	743
	793
	797
	797
	34
	39

KROLL

2022 SBBI[®] Yearbook
Stocks, Bonds, Bills, and Inflation[®]

U.S. Capital Markets Performance by
Asset Class 1926-2021

Exhibit 2.3: Basic Series, Summary Statistics of Annual Total Returns (%)
1926–2021

Series	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Distribution (%)
Large-Cap Stocks	10.5	12.3	19.6	
Small-Cap Stocks*	12.1	16.3	31.2	
Long-term Corp Bonds	6.1	6.4	8.5	
Long-term Gov't Bonds	5.5	6.0	9.8	
Inter-term Gov't Bonds	5.0	5.2	5.6	
U.S. Treasury Bills	3.3	3.3	3.1	
Inflation	2.9	3.0	4.0	

*The 1933 small-cap stocks total return was 142.9%, and is not shown here.

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Exhibit 6.8: Total Returns, Income Returns, and Capital Appreciation Returns of the SBBI®
Asset Classes; Summary Statistics of Annual Returns (%)
1926–2021

	<u>Geometric Mean (%)</u>	<u>Arithmetic Mean (%)</u>	<u>Standard Deviation (%)</u>	<u>Serial Correlation</u>
Large-Cap Stocks				
Total Return	10.5	12.3	19.6	0.01
Income	3.9	3.9	1.6	0.92
Capital Appreciation	6.4	8.2	19.0	0.01
Small-Cap Stocks (TR)	12.1	16.3	31.2	0.05
Long-term Corp Bonds (TR)	6.1	6.4	8.5	0.01
Long-term Gov't Bonds				
Total Return	5.5	6.0	9.8	-0.16
Income	4.8	4.9	2.6	0.96
Capital Appreciation	0.5	0.9	8.9	-0.25
Inter-term Gov't Bonds				
Total Return	5.0	5.2	5.6	0.14
Income	4.3	4.3	2.9	0.96
Capital Appreciation	0.6	0.7	4.4	-0.17
U.S. Treasury Bills (TR)	3.3	3.3	3.1	0.92
Inflation	2.9	3.0	4.0	0.62

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In general, risk is rewarded by a higher return over the long term. For example, Exhibit 6.8 shows that over the 1926–2021 time horizon small-cap stocks were the riskiest asset class with a standard deviation of 31.2%, but also provided the greatest rewards to long-term investors, with an arithmetic mean annual return of 16.3%. Comparably, the risk (as measured by standard deviation) of large-cap stocks was significantly lower at 19.6%, and the reward (as measured by arithmetic average annual return) of large-cap stocks was correspondingly lower at 12.3%.

U.S. Treasury bills, with a standard deviation of 3.1%, were nearly riskless and had the lowest arithmetic mean annual return at 3.3%.

Inflation-Adjusted Series Summary Statistics

Inflation-adjusted basic series summary statistics are presented in Exhibit 6.9. Note that the real rate of interest is close to zero (0.4%) on average. For the 96-year period, the geometric and arithmetic means are lower by the amount of inflation than those of the nominal series.

Note that this increased return comes at a price: risk (as measured by standard deviation) increases from 19.6% for large-cap stocks to 31.2% for small-cap stocks. The relationship between risk and return is a fundamental principle of finance. History tells us that small companies are riskier than large companies. Investors are compensated for taking on this additional risk by the higher returns provided by small companies.

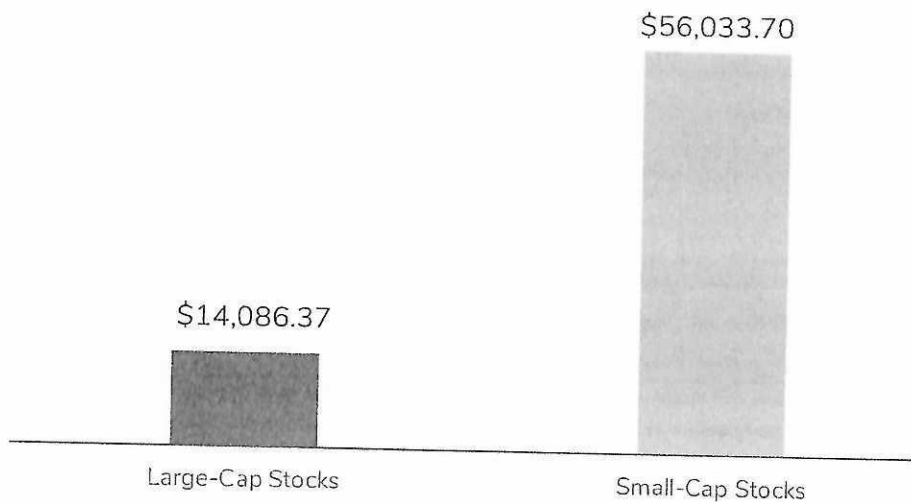
Exhibit 7.1: Summary Statistics of Large-Cap Stocks and Small-Cap Stocks (%)
1926–2021

	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)
Large-Cap Stocks	10.5	12.3	19.6
Small-Cap Stocks	12.1	16.3	31.2

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The differences in the performance of large-cap stocks and small-cap stocks can have important implications for investors. Exhibit 7.2 is a graphical depiction of the value of \$1 invested at the end of 1925 in large-cap and small-cap stocks and held through December 31, 2021 (a total of 96 years).

Exhibit 7.2: The Value of \$1 Invested in Large-Cap and Small-Cap Stocks, 1926–2021
Index (Year-end 1925 = \$1.00)



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120 months (10-years), to 240 months (20-years) and finally to 360 months (30-years), small stocks increasingly outperform large stocks (55%, 66%, 88%, and 96% of the time, respectively).

This same pattern of increasing outperformance of small stocks as the holding period is increased can also be seen in the three "Post Banz" periods.

Long-term Returns in Excess of Systematic Risk

The capital asset pricing model, or CAPM, does not fully account for the higher returns of small-cap stocks. The textbook CAPM can be expressed as follows:

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

Where:

- k_e = Cost of equity capital
- R_f = Risk-free rate
- β = Beta
- RP_m = Equity risk premium (also referred as ERP)

According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk). Beta measures the extent to which a security or portfolio is exposed to systematic risk.

The beta of each decile indicates the degree to which the decile's return moves with that of the overall market. A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk.

CAPM is an attempt to predict future returns. CAPM can be used to see how well it would have done predicting returns that we already know (i.e., historical returns; returns that have already occurred). This is called "back-testing". If what "actually happened" is greater than "what CAPM would have predicted", then CAPM fell short of explaining what actually happened.

Smaller companies tend to have returns that are not fully explained by their higher betas, so return in excess of that predicted by CAPM tends to increase as one moves from the largest companies to the smallest companies. This size related phenomenon prompted a revision to the CAPM to include a size premium. A size premium (as used in the CAPM equation) is thus a measure of "what actually happened" minus "what textbook CAPM predicted":

Size Premium = Actual Excess Return – Excess Return Predicted by CAPM

A size premium is a common adjustment that analysts make to the textbook CAPM when developing cost of equity capital estimates.^{189,190} This is sometimes referred to as the “modified” CAPM:

$$k_e = R_f + \beta \times (RP_m) + RPs$$

Where:

k_e	=	Cost of equity capital
R_f	=	Risk-free rate
β	=	Beta
RP_m	=	Equity risk premium (also referred as ERP)
RPs	=	Size Premium

The size effect is not without controversy, nor is this controversy something new. Traditionally, small companies are believed to have greater required rates of return than large companies because small companies are inherently riskier. It is not clear, however, whether this is due to size itself, or to other factors closely related to or correlated with size (e.g., liquidity).¹⁹¹

¹⁸⁹ The CRSP Deciles Size Study and Risk Premium Report Study, both of which provide size premia and other risk premia based upon data licensed from the Center for Research in Security Prices (CRSP) at the University of Chicago Booth School of Business, are fully available in the Kroll Cost of Capital Navigator platform at kroll.com/costofcapitalnavigator (subscription required). CRSP® is a registered trademark and service mark of Center for Research in Security Prices, LLC and has been licensed for use by Kroll, LLC. The Kroll publications and services are not sponsored, sold or promoted by CRSP®, its affiliates or its parent company. To learn more about CRSP, visit www.crsp.org.

¹⁹⁰ A detailed discussion of company size and return (and size premia) based upon CRSP deciles 1-10 and the 10th decile split (10a, 10b, 10w, 10x, 10y, and 10z) is available in the Resources Library of the Cost of Capital Navigator at kroll.com/costofcapitalnavigator. (subscription required).

¹⁹¹ For more information, see the Resources section of the Cost of Capital Navigator at kroll.com/costofcapitalnavigator. A comprehensive discussion of the size effect is in the Cost of Capital Navigator “U.S. Cost of Capital Module’s” Resources Library.

Exhibit 10.8: Equity Risk Premium Calculated Using the S&P 500 and the Income Return on Three Government Bonds of Different Horizons (%)
1926–2021

	Long- horizon	Intermediate- horizon	Short- horizon
S&P 500	7.46	8.04	9.03

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The equity risk premium is calculated by subtracting the arithmetic mean of the government bond income return from the arithmetic mean of the stock market total return. Exhibit 10.9 demonstrates this calculation for the long-horizon equity risk premium, the intermediate-horizon equity risk premium, and the short-horizon equity risk premium.

Exhibit 10.9: Calculation of the Long-Horizon Equity Risk Premium, the Intermediate-Horizon Equity Risk Premium, and the Short-Horizon Equity Risk Premium (%)
1926–2021

	Arithmetic Annual Mean		
	S&P 500 (the "Market")	Risk-free Rate	Equity Risk Premium
S&P 500	12.33	4.87 =	7.46
Intermediate-horizon	12.33	4.29 =	8.04
Short-horizon	12.33	3.30 =	9.03

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The Market Benchmark and Firm Size

Although not restricted to the 500 largest companies, the S&P 500 is considered a large-cap index. The returns of the S&P 500 are market-cap-weighted. The larger companies in the index therefore receive the majority of the weight. If using a large-cap index to calculate the equity risk premium, an adjustment is usually needed to account for the different risk and return characteristics of small stocks. This was discussed in Chapter 7 on the size premium.

6/17/2021

Business Valuation Resources



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Specify search criteria

Company Name Gannett Fleming
Valuation Date 12/31/2020
Returns Reference - Start Year EARLIEST YEAR
Returns Reference - End Year 2020
Returns Calculation - Mean <input checked="" type="radio"/> Arithmetic <input type="radio"/> Geometric

ERP	ERP	Size Premium	IRP	DoE	WACC	Summary		
			Firms		Portfolio		Size Premium	
Decile	Count	Min size ('000)	Max Size ('000)	Annual Return	Beta	S&P 500	Beta Adjusted	
1 - Largest	199	\$29,025,803	\$1,966,078,882	11.06%	0.92	(0.75%)		

6/17/2021

Business Valuation Resources

2	186	\$13,178,743	\$28,808,073	12.82%	1.04	1.01%
3	210	\$6,743,361	\$13,177,828	13.66%	1.11	1.85%
4	218	\$3,861,858	\$6,710,676	13.67%	1.13	1.86%
5	255	\$2,445,693	\$3,836,536	14.49%	1.17	2.68%
6	246	\$1,591,865	\$2,444,745	14.82%	1.18	3.01%
7	306	\$911,586	\$1,591,765	15.63%	1.26	3.82%
8	365	\$451,955	\$911,103	15.91%	1.31	4.10%
9	412	\$190,019	\$451,800	16.69%	1.34	4.88%
10 - Smallest	569	\$2,194	\$189,831	19.64%	1.40	7.83%
1 through 2	385	\$13,178,743	\$1,966,078,882	11.32%	0.94	(0.48%)
3 through 5	683	\$2,445,693	\$13,177,828	13.80%	1.13	1.99%
6 through 8	917	\$451,955	\$2,444,745	15.27%	1.23	3.46%
9 through 10	981	\$2,194	\$451,800	17.53%	1.35	5.72%
1 through 5	1,068	\$2,445,693	\$1,966,078,882	11.64%	0.96	(0.17%)
6 through 10	1,898	\$2,194	\$2,444,745	15.49%	1.24	3.68%

S&P 500 Annual Return for Period 1928 - 2020 : 11.81%

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Cycle 11 forecast (adopted by the Commission on June 24, 2019) by City of Pittsburgh Neighborhood Cluster and Municipality Outside Pittsburgh 2015-2045
City of Pittsburgh and county totals are at bottom of worksheet
Sorted County, Municipality



NOTE: column names in yellow cells are for mapping

County/region totals	AREA IN SQUARE MILES											2015											2020										
	Total	Land	Water	Households	Average household size	Group-quarter population	Total population	WORKPLACE EMPLOYMENT				Households	Average household size	Group-quarter population	Total population	WORKPLACE EMPLOYMENT				Households	Average household size	Group-quarter population	Total population	WORKPLACE EMPLOYMENT									
								Manufacturing	Retail	Services	Other					Manufacturing	Retail	Services	Other					Manufacturing	Retail	Services	Other	Manufacturing	Retail				
totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15	totemp_15						
Pittsburgh, City of	58,2860	55,4805	2,8055	132,468	2.13	23,939	305,928	30,694	7,656	299,568	16,778	354,696	132,450	2.12	23,939	304,900	32,014	7,641	299,568	16,778	354,696	132,450	2.12	23,939	304,900	32,014	7,641						
Allegheny (Excludes City of Pittsburgh)	685,6730	674,1324	11,5406	397,066	2.30	11,413	925,217	106,279	30,489	339,885	58,000	534,653	397,623	2.30	11,413	924,120	110,938	30,447	339,885	58,000	534,653	397,623	2.30	11,413	924,120	110,938	30,447						
Armstrong	664,2882	653,9256	10,6626	28,524	2.36	757	67,979	4,071	2,210	13,611	5,052	24,944	27,332	2.34	757	64,822	4,160	2,034	13,611	5,052	24,944	27,332	2.34	757	64,822	4,160	2,034						
Beaver	443,6825	433,9979	9,6846	70,079	2.38	2,951	169,785	13,374	6,957	44,256	7,058	71,645	68,468	2.37	2,951	165,356	13,247	6,462	44,256	7,058	71,645	68,468	2.37	2,951	165,356	13,247	6,462						
Butler	794,6921	788,4355	6,2566	74,476	2.42	5,584	185,689	20,488	12,830	66,232	15,922	115,472	76,551	2.40	5,584	189,577	21,551	12,461	66,232	15,922	115,472	76,551	2.40	5,584	189,577	21,551	12,461						
Fayette	797,8329	789,7719	8,0610	53,997	2.41	4,697	134,851	10,817	3,995	33,348	7,177	55,337	51,731	2.41	4,697	129,158	10,604	3,886	33,348	7,177	55,337	51,731	2.41	4,697	129,158	10,604	3,886						
Greene	577,6056	575,7618	1,8438	14,394	2.33	3,975	37,938	2,650	396	8,802	7,692	19,540	14,192	2.31	3,975	37,184	2,568	3,866	8,802	7,692	19,540	14,192	2.31	3,975	37,184	2,568	3,866						
Indiana	834,2155	828,9756	5,2399	34,061	2.41	5,923	87,895	7,921	2,416	25,331	10,145	45,813	33,989	2.39	5,923	87,307	7,947	2,384	25,331	10,145	45,813	33,989	2.39	5,923	87,307	7,947	2,384						
Lawrence	362,6886	360,3848	2,3038	36,435	2.38	2,361	89,162	6,814	3,921	25,248	5,239	41,222	35,262	2.37	2,361	85,935	6,751	3,947	25,248	5,239	41,222	35,262	2.37	2,361	85,935	6,751	3,947						
Washington	860,3761	856,8240	3,5521	83,739	2.42	5,255	208,226	19,051	9,478	69,515	23,173	121,217	84,406	2.42	5,255	209,558	19,660	9,250	69,515	23,173	121,217	84,406	2.42	5,255	209,558	19,660	9,250						
Westmoreland	1,036,7886	1,025,9157	10,8629	151,173	2.33	8,562	361,251	36,817	18,488	102,926	23,936	182,167	149,268	2.32	8,562	355,285	37,420	17,889	102,926	23,936	182,167	149,268	2.32	8,562	355,285	37,420	17,889						
SPC Region	7,116,1191	7,043,3057	72,8130	1,076,412	2.32	75,817	2,573,921	258,976	98,836	1,028,722	180,172	1,566,706	1,071,772	2.31	75,817	2,553,202	265,960	96,787	1,028,722	180,172	1,566,706	1,071,772	2.31	75,817	2,553,202	265,960	96,787						



Cycle 11 forecast (adopted by the City of Pittsburgh and county totals are Sorted County, Municipality

NOTE: column names in yellow cells are for FY

County/region totals	LACE EMPLOYMENT					Average household size
	Services	Other	Total	Households	Average household size	
Butler	14,555	907	17,817	5,705	2.14	
Butler Township	9,214	644	15,326	7,415	2.18	
Butler	1,592	207	3,200	3,301	2.29	
Butler	26	26	56	209	2.42	
Butler	239	19	322	311	2.21	
Butler	204	79	370	1,115	2.54	
Butler	1,260	406	2,030	2,092	2.36	
Butler	841	244	2,219	1,805	2.48	

County/region totals	LACE EMPLOYMENT					Average household size
	Services	Other	Total	Households	Average household size	
Pittsburgh, City of	317,187	17,493	374,335	136,051	2.11	
Allegheny (Excludes City of Pittsburgh)	359,256	60,434	560,175	405,189	2.29	
Armstrong	13,755	4,819	24,768	26,707	2.33	
Beaver	45,184	7,615	72,508	68,875	2.36	
Butler	69,657	16,426	120,095	78,859	2.39	
Fayette	34,138	6,950	55,578	50,787	2.40	
Greene	8,569	6,987	18,510	14,141	2.29	
Indiana	25,671	9,423	45,425	34,596	2.38	
Lawrence	25,295	5,217	41,210	34,811	2.36	
Washington	73,396	23,891	126,197	86,246	2.42	
Westmoreland	106,194	25,352	188,855	150,737	2.31	
SPC Region	1,080,302	184,607	1,627,656	1,086,999	2.30	

Cycle 11 forecast (adopted by the City of Pittsburgh and county totals are Sorted County, Municipality



NOTE: column names in yellow cells are for r

County/region totals	2025										2030									
	Group- quarter population	Total population			WORKPLACE EMPLOYMENT			Average household size	Households	Group- quarter population	Total population			WORKPLACE EMPLOYMENT			Total			
		gpop_25	totpop_25	retemp_25	manufac_25	servemp_25	othemp_25				totemp_25	gpop_30	totpop_30	retemp_30	manufac_30	servemp_30		othemp_30	totemp_30	
Butler City	494	12,692	1,602	646	14,272	927	17,447	5,789	12,851	494	12,851	1,555	591	14,185	960	17,291				
Butler Township	353	16,508	3,974	1,186	8,939	626	14,785	7,637	16,865	353	16,865	3,878	1,024	8,920	598	14,420				
Butler	15	7,569	1,310	55	1,555	197	3,117	3,388	7,720	15	7,720	1,305	52	1,576	186	3,119				
Butler	0	506	0	3	23	15	41	217	238	0	516	0	3	26	11	40				
Butler	0	686	20	42	235	14	311	320	703	0	703	19	40	237	11	307				
Butler	5	2,839	50	32	198	71	351	1,144	2,889	5	2,889	52	29	207	64	352				
Butler	11	4,947	323	32	1,243	397	1,995	2,182	5,092	11	5,092	325	30	1,265	382	2,002				
Butler	300	4,770	154	897	834	238	2,123	1,874	4,912	300	4,912	158	825	861	236	2,080				
2025																				
County/region totals	Group- quarter population	Total population	Retail	Manufac- turing	Services	Other	Total	Households	Average household size	Group- quarter population	Total population	Retail	Manufac- turing	Services	Other	Total				
Pittsburgh, City of	23,939	311,659	31,555	6,974	316,613	17,096	372,238	141,330	2.11	23,939	321,969	31,463	6,456	320,875	16,694	375,488				
Allegheny (Excludes City of Pittsburgh)	11,413	938,526	107,804	27,741	358,847	58,814	553,206	417,727	2.28	11,413	963,797	106,063	25,548	363,733	56,898	552,242				
Armstrong	757	63,952	4,016	1,840	13,625	4,553	24,034	26,625	2.32	757	62,573	3,916	1,692	13,751	4,408	23,767				
Beaver	2,951	165,660	12,932	5,893	44,795	7,359	70,979	70,860	2.35	2,951	169,639	12,750	5,429	45,190	7,175	70,544				
Butler	5,584	193,864	21,255	11,224	69,246	15,854	117,579	82,415	2.37	5,584	201,009	21,043	10,245	70,135	15,274	116,697				
Fayette	4,697	126,620	10,262	3,550	35,774	6,648	54,234	50,898	2.40	4,697	126,610	10,026	3,265	34,094	6,491	53,976				
Greene	4,375	36,790	2,475	352	8,482	6,601	17,910	14,344	2.27	4,375	36,981	2,411	327	8,552	6,405	17,695				
Indiana	5,923	88,299	7,810	2,172	25,548	9,334	44,864	35,835	2.37	5,923	90,698	7,726	2,005	25,899	9,423	45,063				
Lawrence	2,361	84,432	6,586	3,622	25,228	4,985	40,391	35,418	2.35	2,361	85,425	6,446	3,367	25,644	4,831	40,288				
Washington	5,255	213,562	19,321	8,429	73,404	23,428	124,582	89,310	2.41	5,255	220,479	19,089	7,789	74,543	23,174	124,995				
Westmoreland	8,562	357,066	36,547	16,215	107,927	24,440	185,129	155,475	2.30	8,562	366,299	36,028	14,930	109,373	23,578	183,909				
SPC Region	75,817	2,579,530	260,533	88,012	1,077,489	179,112	1,605,146	1,120,217	2.29	75,817	2,645,429	256,961	81,053	1,091,789	174,351	1,604,154				

Cycle 11 forecast (adopted by the City of Pittsburgh and county totals are Sorted County, Municipality



NOTE: column names in yellow cells are for r

County/region totals	2035										2040																	
	Households					Average household size					Group-quarter population					Total population					WORKPLACE EMPLOYMENT							
	hholds	avgsize	gqpop	totpop	retail	manufac-turing	services	other	total	hholds	avgsize	gqpop	totpop	retail	manufac-turing	services	other	total	hholds	avgsize	gqpop	totpop	retail	manufac-turing	services	other	total	
Pittsburgh, City of	146,977	2.10	23,939	333,067	32,272	6,217	332,566	16,985	388,040	152,774	2.10	23,939	344,473	33,601	6,111	347,332	17,759	404,803	146,977	2.13	24,984	353,544	34,473	6,111	359,028	18,244	417,803	
Allegheny	430,866	2.27	11,413	989,969	107,535	24,553	377,146	57,268	566,502	443,757	2.26	11,413	1,015,104	110,874	24,079	394,297	59,272	588,522	430,866	2.31	26,934	1,021,038	110,874	24,079	394,297	59,272	588,522	
Armstrong	26,934	2.31	757	63,017	3,920	1,618	14,169	4,392	24,099	27,335	2.30	757	63,683	3,963	15,778	14,681	4,443	24,665	26,934	2.34	2,951	64,636	3,963	15,778	14,681	4,443	24,665	
Beaver	73,039	2.34	2,951	174,012	12,821	5,169	46,364	7,021	71,375	74,901	2.33	2,951	177,584	12,989	4,991	47,747	6,954	72,681	73,039	2.35	5,584	183,173	12,989	4,991	47,747	6,954	72,681	
Butler	86,517	2.35	5,584	209,286	21,405	9,760	72,638	15,237	119,040	90,241	2.34	5,584	216,520	21,957	9,485	75,624	15,462	122,528	86,517	2.39	4,697	228,255	21,957	9,485	75,624	15,462	122,528	
Fayette	51,424	2.39	4,697	127,595	10,042	3,136	35,096	6,496	54,770	51,815	2.38	4,697	128,255	10,138	3,060	36,267	6,578	56,043	51,424	2.25	4,375	37,450	2,420	311	8,786	6,420	9,737	46,261
Greene	14,671	2.25	4,375	37,450	2,420	311	8,786	6,420	17,937	15,000	2.24	4,375	37,912	2,460	300	9,083	6,551	18,394	14,671	2.35	5,923	95,010	8,009	1,858	27,696	10,187	47,750	
Indiana	37,127	2.35	5,923	93,276	7,848	1,916	26,760	9,737	46,261	38,100	2.34	5,923	95,010	8,009	1,858	27,696	10,187	47,750	37,127	2.33	2,361	89,361	6,599	3,161	27,558	4,732	42,050	
Lawrence	36,507	2.33	2,361	87,531	6,896	3,240	26,539	4,759	41,034	37,490	2.32	2,361	89,361	6,599	3,161	27,558	4,732	42,050	36,507	2.40	5,255	235,444	20,066	7,330	80,825	24,756	132,977	
Washington	92,809	2.40	5,255	228,261	19,440	7,486	77,373	23,696	127,995	96,068	2.40	5,255	235,444	20,066	7,330	80,825	24,756	132,977	92,809	2.29	8,562	387,880	37,125	13,962	117,387	23,596	192,120	
Westmoreland	161,336	2.29	8,562	377,950	36,450	14,312	113,658	23,403	187,223	166,525	2.28	8,562	387,880	37,125	13,962	117,387	23,596	192,120	161,336	2.28	75,817	2,791,226	267,831	75,915	1,178,497	180,290	1,702,533	
SPC Region	1,158,207	2.28	75,817	2,721,414	260,649	77,718	1,130,495	175,414	1,644,276	1,194,006	2.27	75,817	2,791,226	267,831	75,915	1,178,497	180,290	1,702,533	1,158,207									

Cycle 11 forecast (adopted by the City of Pittsburgh and county totals are Sorted County, Municipality



NOTE: column names in yellow cells are for FY

		2045									
County/region totals	Municipality (or Pittsburgh neighborhood cluster)	Households	Average household size	Group-quarter population	Total population	WORKPLACE EMPLOYMENT					Total
						retemp_45	mfemp_45	servemp_45	othemp_45	totemp_45	
Butler	Butler City	6,277	2.12	494	13,818	523	15,083	961	18,140	18,140	
Butler	Butler Township	8,379	2.11	353	18,044	3,961	823	9,584	603	14,971	
Butler	Center Township	3,679	2.23	15	8,226	1,427	50	1,811	186	3,474	
Butler	Connoquessing Borough	242	2.25	0	545	0	2	37	14	53	
Butler	East Butler Borough	348	2.16	0	752	21	40	269	31	361	
Butler	Oakland Township	1,242	2.46	5	3,060	63	27	266	68	424	
Butler	Penn Township	2,481	2.23	11	5,554	359	28	1,472	382	2,241	
Butler	Summit Township	2,101	2.42	300	5,383	183	715	1,053	291	2,242	
		2045									
County/region totals	Municipality (or Pittsburgh neighborhood cluster)	Households	Average household size	Group-quarter population	Total population	WORKPLACE EMPLOYMENT					Total
						retemp_45	mfemp_45	servemp_45	othemp_45	totemp_45	
Pittsburgh, City of		159,173	2.09	23,939	357,154	35,092	6,020	363,751	18,746	423,609	
Allegheny	(Excludes City of Pittsburgh)	458,330	2.25	11,413	1,043,734	114,757	23,650	413,193	62,025	613,625	
Armstrong		27,651	2.29	757	64,156	3,993	1,537	15,215	4,538	25,283	
Beaver		76,453	2.32	2,951	180,383	13,147	4,830	49,164	6,949	74,090	
Butler		93,322	2.32	5,584	222,117	22,436	9,219	78,674	15,765	126,094	
Fayette		52,019	2.38	4,697	128,468	10,177	2,973	37,415	6,682	57,247	
Greene		15,318	2.22	4,375	38,341	2,491	290	9,405	6,750	18,936	
Indiana		38,684	2.32	5,923	95,804	8,125	1,801	28,598	10,715	49,239	
Lawrence		38,221	2.31	2,361	90,583	6,669	3,088	28,582	4,722	43,061	
Washington		98,910	2.39	5,755	241,574	20,650	7,177	84,430	26,085	138,342	
Westmoreland		170,375	2.27	8,562	394,643	37,705	13,608	121,626	23,891	196,830	
SPC Region		1,228,456	2.26	75,817	2,856,957	275,242	74,193	1,230,053	186,868	1,766,356	

DEALS AUGUST 6, 2018 / 5:11 PM / 6 MONTHS AGO

SJW Group makes \$1.1 billion all-cash offer for Connecticut Water

3 MIN READ



NEW YORK (Reuters) - SJW Group ([SJW.N](#)) and Connecticut Water Service Inc ([CTWS.O](#)) said on Monday they were changing from a merger to an acquisition agreement, with SJW offering to buy the New England utility for \$1.1 billion in cash instead of combining stock.

The switch to an all-cash offer is worth \$70 per Connecticut Water share, a 33 percent premium to Connecticut Water's share price prior to the original deal announced in March, according to a joint statement.

It was also higher than the implied \$61.86 per share value of the Clinton, Connecticut-based firm under the merger-of-equals transaction, which would have created a combined company in which existing SJW shareholders would hold 60 percent of the stock.

SJW closed 2.3 percent lower, while Connecticut Water was 9 percent higher at \$68.50.

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To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase ([JPM.N](#)). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

The new deal aims to conclude in the first quarter of 2019, subject to approvals from Connecticut Water’s shareholders, as well as regulators in Connecticut and Maine.

The duo’s original all-stock merger announcement in March triggered competing offers from Eversource Energy ([ES.N](#)) and California Water Service Group ([CWT.N](#)).

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“We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals,” SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

Switching to an acquisition, versus a merger structure, means that SJW shareholders will no longer be required to vote on approving the deal, the statement said.

CalWater has an open tender offer to acquire SJW that runs until Sept. 28.

However, asked if the change was aimed at heading off any shareholder challenge to the deal, Thornburg told Reuters it “wasn’t a consideration” and it had received nothing but support from its shareholders.

RBS sounds alarm over Brexit

CalWater declined to comment. A spokesman for Eversource said the company was evaluating developments but, as it has made clear, it will be disciplined in pursuing this or any other transaction.

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker
Our Standards: [The Thomson Reuters Trust Principles.](#)

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CONNECTICUT WATER SERVICE INC / CT

BALANCE_SHEET2

Form Type: 10-K

Period End: Dec 31, 2017

Date Filed: Mar 15, 2018

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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED BALANCE SHEETS

December 31, (in thousands, except share amounts)	2017	2016
ASSETS		
Utility Plant	\$ 927,289	\$ 777,860
Construction Work in Progress	11,761	33,748
	939,050	811,608
Accumulated Provision for Depreciation	(241,327)	(210,212)
Net Utility Plant	697,723	601,396
Other Property and Investments	10,662	9,071
Cash and Cash Equivalents	3,618	1,564
Accounts Receivable (Less Allowance, 2017 - \$1,265; 2016 - \$1,100)	14,965	13,024
Accrued Unbilled Revenues	8,481	8,171
Materials and Supplies, at Average Cost	1,593	1,536
Prepayments and Other Current Assets	7,021	5,069
Total Current Assets	35,678	29,364
Unrecovered Income Taxes - Regulatory Asset	66,631	93,264
Pension Benefits - Regulatory Asset	11,339	12,266
Post-Retirement Benefits Other Than Pension - Regulatory Asset	116	265
Goodwill	67,016	30,427
Deferred Charges and Other Costs	9,618	8,449
Total Regulatory and Other Long-Term Assets	154,720	144,671
Total Assets	\$ 898,783	\$ 784,502
CAPITALIZATION AND LIABILITIES		
Common Stockholders' Equity:		
Common Stock Without Par Value: Authorized - 25,000,000 Shares		
Issued and Outstanding:		
2017 - 12,065,016; 2016 - 11,248,458	\$ 191,641	\$ 145,739
Retained Earnings	102,417	91,213
Accumulated Other Comprehensive Loss	(428)	(924)
Common Stockholders' Equity	293,630	236,028
Preferred Stock	772	772
Long-Term Debt	253,367	197,047
Total Capitalization	547,769	433,847
Current Portion of Long-Term Debt	6,173	4,859
Interim Bank Loans Payable	19,281	32,953
Accounts Payable and Accrued Expenses	11,319	13,116
Accrued Interest	1,439	1,012
Current Portion of Refund to Customers - Regulatory Liability	64	855
Other Current Liabilities	3,262	2,330
Total Current Liabilities	41,538	55,125
Advances for Construction	20,024	19,127
Deferred Federal and State Income Taxes	33,579	50,558
Unfunded Future Income Taxes	58,384	90,977
Long-Term Compensation Arrangements	32,649	33,540
Unamortized Investment Tax Credits - Regulatory Liability	1,133	1,189
Excess Accumulated Deferred Income Tax - Regulatory Liability	30,937	4,373
Refund to Customers - Regulatory Liability	-	108
Other Long-Term Liabilities	1,241	701
Total Long-Term Liabilities	177,947	200,573
Contributions in Aid of Construction	131,529	94,957
Commitments and Contingencies	-	-
Total Capitalization and Liabilities	\$ 898,783	\$ 784,502

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**CONNECTICUT WATER SERVICE INC / CT
INCOME_STATEMENT2**

Form Type: 10-K

Period End: Dec 31, 2017

Date Filed: Mar 15, 2018

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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED STATEMENTS OF INCOME

For the Years Ended December 31, (in thousands, except per share data)

	2017	2016	2015
Operating Revenues	\$ 107,054	\$ 98,667	\$ 96,041
Operating Expenses			
Operation and Maintenance	48,017	44,191	48,052
Depreciation	16,684	13,905	12,871
Income Taxes	(1,993)	2,570	(818)
Taxes Other Than Income Taxes	10,941	9,796	9,294
Total Operating Expenses	73,649	70,462	69,399
Net Operating Revenues	33,405	28,205	26,642
Other Utility Income, Net of Taxes	824	744	797
Total Utility Operating Income	34,229	28,949	27,439
Other Income (Deductions), Net of Taxes			
(Loss) Gain on Real Estate Transactions	33	(54)	349
Non-Water Sales Earnings	1,167	1,219	1,394
Allowance for Funds Used During Construction	774	1,198	530
Other	(2,308)	(1,009)	(214)
Total Other Income (Loss), Net of Taxes	(334)	1,354	2,059
Interest and Debt Expenses			
Interest on Long-Term Debt	9,054	7,714	7,087
Other Interest Income, Net	(359)	(922)	(458)
Amortization of Debt Expense and Premium, Net	146	124	108
Total Interest and Debt Expenses	8,841	6,916	6,737
Net Income	25,054	23,387	22,761
Preferred Stock Dividend Requirement	38	38	38
Total Net Income Applicable to Common Stock	\$ 25,016	\$ 23,349	\$ 22,723
Weighted Average Common Shares Outstanding:			
Basic	11,540	11,009	10,958
Diluted	11,762	11,228	11,164
Earnings Per Common Share:			
Basic	\$ 2.17	\$ 2.12	\$ 2.07
Diluted	\$ 2.13	\$ 2.08	\$ 2.04

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the Years Ended December 31, (in thousands)

	2017	2016	2015
Net Income	\$ 25,054	\$ 23,387	\$ 22,761
Other Comprehensive Income (Loss), net of tax			
Adjustment to post-retirement benefit plans, net of tax benefit			
(expense) of \$(419), \$15, and \$(505) in 2017, 2016, and 2015, respectively	289	(24)	765
Unrealized Investment gain (loss), net of tax (expense) benefit of \$(13), \$(22) and \$62, in 2017, 2016, and 2015, respectively	207	35	(97)
Other Comprehensive Income, net of tax	\$ 496	\$ 11	\$ 668
Comprehensive Income	\$ 25,550	\$ 23,398	\$ 23,429

A-6 LIST OF TOWNS SERVED

List by operating divisions the towns served directly, indicating those in which franchise is for limited area by an asterisk (*) after name. Give population of the area and the number of customers.

Line No.	Town	Population of Area	Number of Customers	Line No.	Town	Population of Area	Number of Customers
					Sub Totals Forward:	30,120	725
1	Belmont N. H.	7,356	160	16			
2	Bow, N.H.	7,519	95	17			
3	Carroll, N.H.	763	409	18			
4	Belmont, NH	7,356	22	19			
5	Gilford, NH	7,126	39	20			
6				21			
7				22			
8				23			
9				24			
10				25			
11				26			
12				27			
13				28			
14				29			
15	Sub Totals Forward:	30,120	725	30	Total	30,120	725

A-7 PAYMENTS TO INDIVIDUALS

List names of all individuals, partnerships, or corporations to whom payments totaling \$10,000 or more for services rendered were made or accrued during the year, and the amount paid or accrued to each. Where payments or accruals to the individual members of a partnership or firm together total \$10,000 or more, list each individual and the amount paid or due each.

Line No.	Name	Address	Amount
1	NESC	Plainville., Ct.	222,877
2	City of Laconia	Laconia, NH	91,004
3	Rowell's Services	Northfield, NH	57,242
4	Eversource	Boston, MA	43,226
5	CoBank	Greenwood Village, CO	43,000
6	Stephen P. St. Cyr & Associates	Biddeford, Me.	40,959
7	NH Brown Law	Somersworth, NH	37,206
8	PKF O'Conner Davies	Shelton, Ct.	36,020
9	State of NH	Concord, NH	16,544
10	Fortin Construction	Londonderry, NH	16,155
11	Town of Carroll	Carroll, NH	15,201
12	Town of Belmont	Belmont, NH	14,953
13	Harcros Chemicals	Chicago, IL	12,909
14			
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29			
30	Total		\$ 647,296

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CONSUMPTION INFORMATION (Dover Division)			
1. Estimated total population of territory covered by franchise			
2. Estimated population reached by the distributing system			
3. Estimated population actually supplied			1,809
4. Total consumption during the year in gallons			50,866,736
5. Average daily consumption (in gallons)			138,429
6. Day on which the greatest amount was pumped			8/13/2020
7. Gallons pumped on above day			368,000
8. Week during which greatest amount was pumped		8/9/20-8/15/20	
9. Gallons pumped during above week			1,906,000
10. Gallons per day per service			218
11. Consumption metered			50,866,736
12. Consumption metered,		100 percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
637	1	0	636
Name of City, Town, or District		Number of Customers as of December 31	
Dover, MA		636	
Sixty-four of these connections represent contractual service to Town of Dover plus one master meter at town connection.			

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CONSUMPTION INFORMATION (Plymouth Division)			
1. Estimated total population of territory covered by franchise			2,513
2. Estimated population reached by the distributing system			2,513
3. Estimated population actually supplied			2,513
4. Total consumption during the year (GALS)			101,211,880
5. Average daily consumption			294,414
6. Day on which the greatest amount was pumped			7/27/2020
7. Gallons pumped on above day			724,300
8. Week during which greatest amount was pumped		7/26/2020-8/1/2020	
9. Gallons pumped during above week			4,544,900
10. Gallons per day per service			219
11. Consumption metered			101,211,880
12. Consumption metered,		100% percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
853	0	9	862
Name of City, Town, or District		Number of Customers as of December 31	
Plymouth, MA		862	

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CONSUMPTION INFORMATION (Springdale Division)			
1. Estimated total population of territory covered by franchise			115
2. Estimated population reached by the distributing system			115
3. Estimated population actually supplied			115
4. Total consumption during the year (GALS)			7,463,606
5. Average daily consumption			20,448
6. Day on which the greatest amount was pumped			6/27/2020
7. Gallons pumped on above day			88,000
8. Week during which greatest amount was pumped		6/21/20-6/27/20	
9. Gallons pumped during above week			407,000
10. Gallons per day per service			418
11. Consumption metered			7,463,606
12. Consumption metered,		100 percent of total consumption	
13. CUSTOMERS			
Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
41	0	1	42
Name of City, Town, or District		Number of Customers as of December 31	
Dover, MA		42	

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CONSUMPTION INFORMATION

1. Estimated total population of territory covered by franchise	1100
2. Estimated population reached by the distributing system	1100
3. Estimated population actually supplied	1100
4. Total consumption during the year	31,956,826 gals.
5. Average daily consumption	87,553 gals.
6. Day on which the greatest amount was pumped	7/20/2020
7. Gallons pumped on above day	173,596
8. Week during which greatest amount was pumped	7/16/20-7/25/20
9. Gallons pumped during above week	975,066
10. Gallons per day per service	180
11. Consumption metered	31,956,826 gals.
12. Consumption metered,	100 % of total consumption

13. CUSTOMERS

Number Being Supplied at Beginning of Year	Discontinued Since	Connected Since	Number Being Supplied at Close of Year
487	0		487

Name of City, Town, or District	Number of Customers as of December 31
Sheffield, MA *487 metered customers, 3 fixed fee customers	490

Filed by Eversource Energy
 (Commission File No. 001-05324) pursuant
 to Rule 425 under the Securities Act of 1933

Subject Company: New England Service Company



JOINT NEWS RELEASE

New England Service Company To be Acquired by Aquarion Water Company

*Region's largest private water company expands operations in
 Connecticut, Massachusetts and New Hampshire*

BRIDGEPORT, CONN. – April 8, 2021 – Aquarion Company (Aquarion), parent of Aquarion Water Company, and New England Service Company (NESC) (OTC Pink Sheets Trading Symbol: NESW) today announced that they have entered into a definitive agreement whereby Aquarion will acquire all outstanding shares of NESC and NESC will become a wholly-owned subsidiary of Aquarion. Aquarion is a water supply company and holding company based in Bridgeport, Connecticut, providing regulated water service to customers in Connecticut, Massachusetts, and New Hampshire. NESC is a holding company based in Plainville, Connecticut providing regulated water service to customers in Connecticut, Massachusetts, and New Hampshire.

Under the agreement, which was unanimously approved by the Boards of Directors of both Aquarion and NESC, the acquisition will be executed through a stock-for-stock transaction that is structured to be a tax-free reorganization. The agreement provides that the stockholders of NESC will receive 0.51208 shares of the common shares of Aquarion's parent, Eversource Energy (Eversource) (NYSE: ES), in exchange for each share of NESC common stock. The fixed exchange ratio implies a \$44.90 per share price based on the \$87.68 closing price of Eversource Energy common shares on April 6, 2021. In connection with the exchange, Eversource Energy will issue approximately 463,000 shares of ES Common Stock at closing.

The merger includes NESC's Valley Water System in Connecticut, Colonial Water Company and Mountain Water Systems in Massachusetts, and Abenaki Water Company in New Hampshire, as well as unregulated service operations throughout New England. The merger will add nearly 10,000 customers to Aquarion's existing base of 216,000 customers. Under the agreement, all NESC employees will be retained.

"This merger will create long-term benefits for customers, employees, and the communities we serve," said Donald Morrissey, President of Aquarion Water Company. "We will make investments in these water systems focused on reliability and water quality and deliver a superior customer experience. We also welcome NESC's dedicated employees to the Aquarion team. I'm confident that we share a similar passion for delivering superior water service to customers and the communities we serve and being great stewards of the environment."

Over the last ten years, Aquarion has integrated over 70 water systems into its operations, strengthening the company's ability to deliver high-quality water to communities throughout the region.

"I am pleased to announce the NESC and Aquarion combination and look forward to working with Aquarion's leadership team on a smooth transition for our customers and employees," said Don Vaughan, NESC Chairman. He also noted, "Aquarion is well-positioned to deliver the reliable high-quality water service that our customers expect." NESC President, Nicholas LaChance, added "The stockholders, customers and employees of NESC will benefit from this deal with Aquarion. We view this transaction with Aquarion as a win for all of our stakeholders, and we look forward to working closely with their team."

The completion of the transaction will require approval by the stockholders of NESC, and the NESC Board of Directors has resolved to recommend the adoption of the merger agreement by the stockholders. The transaction is also subject to the approval of regulatory authorities, including the Connecticut Public Utilities Regulatory Authority, Massachusetts Department of Public Utilities, and New Hampshire Public Utilities Commission, and satisfaction of several other conditions. The parties plan to file all required regulatory applications over the coming months with an anticipated closing by the end of 2021.

Advisors and Counsel

Ropes & Gray LLP served as counsel to Aquarion Company and Eversource Energy in the transaction. Boenning & Scattergood, Inc. provided a fairness opinion to the Board of Directors of New England Service Company. Cranmore, FitzGerald and Meaney served as counsel to New England Service Company.

About Aquarion Water Company:

Aquarion Water Company is the public water supply company for more than 625,000 people in 52 cities and towns throughout Connecticut, as well as serving customers in Massachusetts and New Hampshire. It is the largest investor-owned water utility in New England and among the seven largest in the U.S. Based in Bridgeport, CT, Aquarion has been in the public water supply business since 1857. Across its operations, Aquarion strives to act as a responsible steward of the environment and to assist the communities it serves in promoting sustainable practices. Aquarion Company is a wholly-owned subsidiary of Eversource.

For more information on Aquarion Water Company, please visit www.aquarionwater.com or www.facebook.com/aquarionwater.

About New England Service Company

Headquartered in Plainville, Connecticut, NESC is predominantly involved in the operation, management and financing of water systems and other related activities. NESC was formed in 1997 to operate in both regulated and unregulated water markets. NESC is the sole stockholder of four regulated water companies.

For more information on New England Service Company please visit
www.NewEnglandServiceCompany.com

This news release includes statements concerning Aquarion and Aquarion Water Company's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts, including statements regarding the planned merger with New England Service Company, the timing of such transaction and benefits anticipated from such transaction. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Generally, readers can identify these forward-looking statements through the use of words or phrases such as "will," "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements involve risks and uncertainties that may cause actual results or outcomes to differ materially from those included in the forward-looking statements. Factors that may cause actual results to differ materially from those included in the forward-looking statements include, but are not limited to: the transaction is subject to conditions to closing, including regulatory approvals, that may not be satisfied; it may take longer than anticipated to consummate the transaction; we may not realize the benefits we anticipate from the transaction; unforeseen liabilities; risks relating to integration of the acquired business; and other presently unknown or unforeseen factors.

Other risk factors are detailed in Eversource Energy's reports filed with the Securities and Exchange Commission (SEC) and updated as necessary, and are available on Eversource Energy's website at www.eversource.com and on the SEC's website at www.sec.gov. All such factors are difficult to predict and contain uncertainties that may materially affect Aquarion or Aquarion Water Company's actual results, many of which are beyond our control. You should not place undue reliance on the forward-looking statements; each speaks only as of the date on which such statement is made, except as required by federal securities laws, and Aquarion Water Company undertakes no obligation to update any forward-looking statement or statements to reflect events or circumstances after the date on which such statement is made or to reflect the occurrence of unanticipated events.

Additional Information

This communication does not constitute an offer to buy or solicitation of any offer to sell securities. This communication relates to a proposed business combination transaction between Aquarion Company and New England Service Company. In connection with the proposed business combination, Eversource Energy will file a registration statement with the SEC. This communication is not a substitute for any registration statement, prospectus/proxy statement or other document Eversource Energy, Aquarion Company and/or New England Service Company may file with the SEC in connection with the proposed transaction. INVESTORS AND SECURITY HOLDERS OF NEW ENGLAND SERVICE COMPANY ARE URGED TO READ CAREFULLY THE REGISTRATION STATEMENT, PROSPECTUS, PROXY STATEMENT AND OTHER DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT EVERSOURCE ENERGY, AQUARION COMPANY, NEW ENGLAND SERVICE COMPANY AND THE PROPOSED TRANSACTION. Investors and security holders may obtain free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC's web site at www.sec.gov or by directing a request to Eversource's Investor Relations department at (860) 665-5154 or by email to jeffrey.kotkin@eversource.com.

Certain Information Regarding Participants

This filing may be deemed solicitation material in respect of the proposed business combination transaction between Aquarion Company and New England Service Company. The directors, trustees, executive officers and certain other members of management and employees of Eversource Energy, Aquarion Company and New England Service Company may be deemed “participants” in the solicitation of proxies from stockholders of New England Service Company in favor of the proposed merger. You can find information about Eversource’s trustees and executive officers in Eversource’s annual report on Form 10-K for the year ended December 31, 2020, which was filed with the SEC on February 17, 2021 and its proxy statement for its 2021 annual meeting filed with the SEC on March 26, 2021. Information regarding the persons who may, under the rules of the SEC, be considered participants in the solicitation of the stockholders of New England Service Company in connection with the proposed merger will be set forth in the registration statement, prospectus/proxy statement or other documents filed with the SEC if any when they become available. You may obtain these documents (when they become available) free of charge at the SEC’s web site at www.sec.gov and from Investor Relations at Eversource as described above.

Media Contacts:

Aquarion Contact:

Peter Fazekas
Director – Corporate Communications
Aquarion Water Company
Phone: (203) 336-7651
pfazekas@aquarionwater.com

New England Service Company Contact:

Nicholas LaChance
President and Chief Executive Officer
New England Service Company
37 Northwest Drive
Plainville, CT 06062
Phone: (860)-747-1665
NLaChance@NewEnglandServiceCompany.com

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NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Balance Sheets

	December 31,	
	2020	2019
ASSETS		
Utility plant, at cost	\$ 52,176,919	\$ 50,866,999
Less accumulated depreciation and amortization	<u>(17,108,971)</u>	<u>(16,242,563)</u>
Net Utility Plant	<u>35,067,948</u>	<u>34,624,436</u>
Non-utility property, plant and equipment	2,340,344	2,229,441
Less: accumulated depreciation	<u>(841,502)</u>	<u>(736,994)</u>
Net Non-Utility Property, Plant and Equipment	<u>1,498,842</u>	<u>1,492,447</u>
Current Assets		
Cash and cash equivalents	1,217,863	781,095
Marketable securities	387,294	456,385
Accounts receivable	682,735	728,725
Accrued unbilled revenues	391,450	369,136
Regulatory asset - revenue adjustment mechanism, current portion	83,303	218,322
Income taxes receivable	-	5,286
Materials and supplies inventory	105,343	99,032
Prepaid expenses	<u>51,811</u>	<u>52,968</u>
Total Current Assets	<u>2,919,799</u>	<u>2,710,949</u>
Other Assets		
Investment in cooperative capital plan	28,473	21,500
Deferred charges and other regulatory assets	2,243,524	1,750,628
Regulatory asset - revenue adjustment mechanism, net of current portion	10,426	48,847
Preliminary survey and investigation	5,111	4,883
Regulatory asset - income taxes recoverable	<u>4,263,900</u>	<u>4,238,900</u>
Total Other Assets	<u>6,551,434</u>	<u>6,064,758</u>
Total Assets	<u>\$ 46,038,023</u>	<u>\$ 44,892,590</u>

See Notes to Consolidated Financial Statements

NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Balance Sheets (continued)

	December 31,	
	2020	2019
STOCKHOLDERS' EQUITY AND LIABILITIES		
Stockholders' Equity		
Common stock, no par; 3,000,000 shares authorized; 906,418 shares issued, 903,325 and 900,850 shares outstanding at December 31, 2020 and 2019	\$ 3,784,217	\$ 3,784,217
Additional paid in capital	297,426	297,426
Treasury stock, at cost, 3,093 and 5,568 shares at December 31, 2020 and 2019	(72,974)	(128,758)
Retained earnings	<u>12,776,934</u>	<u>12,511,864</u>
Total Stockholders' Equity	<u>16,785,603</u>	<u>16,464,749</u>
Long-term debt, net of current portion	<u>9,148,153</u>	<u>9,349,951</u>
Current Liabilities		
Note payable, bank	122,000	70,500
Current portion of long-term debt	678,831	570,170
Accounts payable and accrued expenses	765,365	544,412
Accrued property and other taxes	234,396	215,792
Deferred revenues	<u>117,927</u>	<u>76,874</u>
Total Current Liabilities	<u>1,918,519</u>	<u>1,477,748</u>
Other Liabilities		
Deferred income taxes	5,739,210	5,443,590
Regulatory - excess deferred income taxes	762,275	763,669
Regulatory - excess income taxes	293,643	195,762
Security deposits and other deferred credits	105,525	109,249
Customer advances for construction	97,586	42,738
Contributions in aid of construction	9,519,329	9,431,954
Amortized contributions in aid of construction	<u>1,668,180</u>	<u>1,614,180</u>
Total Other Liabilities	<u>18,185,748</u>	<u>17,601,142</u>
Total Stockholder's Equity and Liabilities	<u>\$ 46,038,023</u>	<u>\$ 44,893,590</u>

See Notes to Consolidated Financial Statements

NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Statements of Income

	Year Ended December 31,	
	<u>2020</u>	<u>2019</u>
OPERATING REVENUES		
Contracts with customers		
Utility revenues	\$ 6,531,154	\$ 6,047,244
Contracting and jobbing	1,519,110	1,497,323
Total Contracts with Customers	8,050,264	7,544,567
Alternative revenue programs	(56,176)	97,506
Total Operating Revenues	<u>7,994,088</u>	<u>7,642,073</u>
OPERATING EXPENSES		
Operation expenses	3,399,314	3,292,866
Maintenance expenses	369,749	322,583
Cost of contracting and jobbing	737,715	804,274
Depreciation and amortization	1,170,093	1,129,426
Taxes other than income taxes	757,357	743,266
Interest charges	347,298	350,372
Total Operating Expenses	<u>6,781,526</u>	<u>6,642,787</u>
Income from Operations	<u>1,212,562</u>	<u>999,286</u>
OTHER INCOME AND (DEDUCTIONS)		
Rental income and other	2,000	3,114
Investment income	21,350	70,550
Allowance for funds used during construction	10,771	5,275
Non-operating expense	(3,454)	(2,676)
Total Other Income	<u>30,667</u>	<u>76,263</u>
Income Before Income Taxes	1,243,229	1,075,549
Income tax expense	310,230	289,200
Net Income	<u>\$ 932,999</u>	<u>\$ 786,349</u>
PER SHARE AMOUNTS		
Weighted average shares outstanding	<u>902,454</u>	<u>897,030</u>
Net income	<u>\$ 1.03</u>	<u>\$ 0.88</u>
Dividends	<u>\$ 0.74</u>	<u>\$ 0.70</u>
Book value	<u>\$ 18.60</u>	<u>\$ 18.35</u>

See Notes to Consolidated Financial Statements

VALLEY WATER SYSTEMS, INC.

Notes to Financial Statements
Years Ended December 31, 2020 and 2019

1. Description of the Company

Valley Water Systems, Inc. (the "Company"), a wholly owned subsidiary of New England Service Company ("NESC"), is a public utility distributing water to approximately 6,760 customers in the towns of Plainville, Farmington, and Southington, Connecticut area. As a public utility operating in Connecticut, the Company functions under rules and regulations prescribed by the State of Connecticut Public Utilities Regulatory Authority ("PURA").

2. Summary of Significant Accounting Policies

Basis of Presentation

The Company maintains its accounts in accordance with the PURA Uniform System of Accounts as prescribed for Water Utilities Class A. The Company prepares its financial statements in accordance with accounting principles generally accepted in the United States of America which include the provisions of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 980, *Regulated Operations* ("ASC 980"). Under ASC 980, regulated companies defer costs and credits on the balance sheet as regulatory assets and liabilities when it is probable that those costs and credits will be recognized in the rate setting process in a period different from the period in which they would have been reflected in income by an unregulated company. These deferred regulatory assets and liabilities are then reflected in the income statement in the period in which the same amounts are reflected in rates charged for service.

Use of Estimates

The preparation of financial statements require management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported revenues and expenses. Accordingly, actual results could differ from these estimates.

Cash and Cash Equivalents

Cash and cash equivalents includes cash balances held in bank accounts and highly liquid debt instruments with maturities of three months or less at the time of purchase.

From time to time, the Company had on deposit at financial institutions cash and cash equivalents which exceed current federal deposit insurance limitations. The Company had not experienced any losses in such accounts to date and believes it is not exposed to any significant credit risk on cash and cash equivalents.

Accounts Receivable

Accounts receivable are stated at the amount management expects to collect from outstanding balances. The Company continuously monitors the creditworthiness of customers and establishes, when necessary, an allowance for amounts that may become uncollectible in the future based on current economic trends, historical payment and bad debt write-off experience.

1 subsidiary water companies, serving approximately 200,000 customers in 52 towns and
 2 cities with a population of approximately 674,000 throughout Connecticut’s seven
 3 counties.² A map showing AWC-CT’s current service area is attached to the Joint
 4 Application as Exhibit I. AWC-CT has provided water and water services to Connecticut
 5 residents and customers continuously since 1857. AWC-CT is well known to PURA and
 6 well respected by the water industry in Connecticut, and nationally. AWC-CT had over
 7 \$1.68 billion of utility plant assets as of December 31, 2020 and operating revenues of
 8 \$189.6 million in 2020.

9 **Q. Please describe New England Service Company.**

10 **A.** NESC is a Connecticut stock corporation. NESC was formed in 1996 as a holding company
 11 to operate in both regulated and unregulated water utility markets. NESC has one regulated
 12 water distribution operating subsidiary in Connecticut. VWS, a utility established in 1884
 13 as the Plainville Water Company, delivers water to over 6,800 customers or a population of
 14 approximately 18,000 in Plainville, Southington, and Farmington, Connecticut. A map
 15 showing VWS’ current service area is attached to the Joint Application as Exhibit I.
 16 In addition to owning VWS, NESC is also the sole stockholder of Colonial Water
 17 Company, a utility that provides water to about 1,530 customers in Dover and Plymouth,
 18 Massachusetts; Mountain Water Systems, a utility that provides water to about 490
 19 customers in Sheffield, Massachusetts; and Abenaki Water Company, a combination of

² AWC-CT has acquired and integrated 16 new water systems since its last general rate proceeding in September 2013 via the acquisitions of the assets of the Indian Fields, West Service Corp. (2 systems), Bedrock, East Derby, Litchfield Hills, Southeastern CT Water Authority Lantern Hill Division, Hickory Hills Corporation, Arlington Acres, Pleasure Valley, Hillside Water Corporation, Town of Marlborough, and Town of New Fairfield systems, in addition to the transfer of the Laurel Ridge, West Shore Owners Association and Interlaken Water System assets.

Filed by Eversource Energy
(Commission File No. 001-05324) pursuant
to Rule 425 under the Securities Act of 1933
Subject Company: The Torrington Water Company

THE TORRINGTON WATER COMPANY LETTERHEAD

March 8, 2022

Dear Stockholder:

We are pleased to announce that on March 7, 2022, the Board of Directors of The Torrington Water Company (OTC Pink Sheets Trading Symbol: TORW) unanimously approved an Agreement and Plan of Merger (the "Agreement") with Aquarion Company ("Aquarion"), a wholly-owned subsidiary of Eversource Energy (NYSE: ES). Aquarion is a holding company based in Bridgeport, Connecticut with regulated water operations in Connecticut, Massachusetts, and New Hampshire. The Torrington Water Company ("TWC") is a public utility that provides water service to approximately 10,000 customers in the city of Torrington and the towns of Burlington, Harwinton, Litchfield and New Hartford, Connecticut.

Under the terms of the Agreement, which has been unanimously approved by the boards of directors of Aquarion and TWC, TWC would merge with and become a wholly-owned subsidiary of Aquarion, and the stockholders of TWC would receive in exchange for their TWC shares a number of validly issued, fully paid and nonassessable common shares, par value \$5.00 per share, of Eversource Energy. The exchange ratio ("Exchange Ratio") that determines the number of Eversource Energy common shares issued in the merger will float between 1.0241 and 1.07 IO and will be determined by dividing \$93.51 by Eversource's volume weighted average share price for IO full trading days ending on and including the second full trading day prior to closing date of the merger ("Eversource Share Value"). The Exchange Ratio becomes fixed at 1.0710 if the Eversource Share Value is less than \$87.32 and becomes fixed at 1.0241 if the Eversource Share Value is greater than \$91.32. An Exchange Ratio of 1.0710 implies a \$92.81 per share value based on the closing price of \$88.66 for Eversource Energy common shares on March 7, 2022, or a market premium of approximately 1.04% over TWC's \$45.50 closing price on March 7, 2022. Boenning & Scattergood, Inc. provided a fairness opinion to the Board of Directors of TWC. Based on an Exchange Ratio of 1.07 IO and the most recently declared dividends by TWC and Eversource Energy, TWC shareholders would receive an equivalent dividend of \$2.58 per share compared to their current dividend on TWC shares of \$1.38 per share.

The completion of the merger will require approval by the stockholders of TWC, and the TWC Board of Directors has resolved to recommend the adoption of the Agreement by the stockholders. The merger is also subject to the satisfaction of several other customary closing conditions, including the approval of the Connecticut Public Utilities Regulatory Authority. The parties plan to file for the approval of the Connecticut Public Utilities Regulatory Authority shortly, with an anticipated consummation of the merger by the end of 2022.

Within the coming weeks, you will be mailed a Proxy Statement/Prospectus for the TWC Stockholder Meeting, at which TWC stockholders will consider and vote with respect to the proposed merger.

Enclosed with this letter is the press release announcing the signing of the Agreement. The press release provides additional information that will answer many of your questions.

Sincerely yours,
Susan Suhanovsky
President

Forward-Looking Statements

This letter includes statements concerning The Torrington Water Company's expectations, beliefs, plans, objectives, goals, strategies, assumptions of future events, future financial performance or growth and other statements that are not historical facts, including statements regarding the planned merger with Aquarion Water Company, the timing of such transaction and benefits anticipated from such transaction. These statements are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Generally, readers can identify these forward-looking statements through the use of words or phrases such as "will," "estimate," "expect," "anticipate," "intend," "plan," "project," "believe," "forecast," "should," "could" and other similar expressions. Forward-looking statements involve risks and uncertainties that may cause actual results or outcomes to differ materially from those included in the forward-looking statements. Factors that may cause actual results to differ materially from those included in the forward-looking statements include, but are not limited to: the transaction is subject to conditions to closing, including regulatory approvals, that may not be satisfied; it may take longer than anticipated to consummate the transaction; we may not realize the benefits we anticipate from the transaction; unforeseen liabilities; risks relating to integration of the acquired business; and other presently unknown or unforeseen factors.

This Communication Does Not Constitute a Solicitation of Proxies

This communication does not constitute an offer to buy or solicitation of any offer to sell securities. This communication relates to a proposed business combination transaction between Aquarion Company and The Torrington Water Company. In connection with the proposed business combination, Eversource Energy will file a registration statement with the SEC. This communication is not a substitute for any registration statement, prospectus/proxy statement or other document Eversource Energy, Aquarion Company and/or The Torrington Water Company may file with the SEC in connection with the proposed transaction. INVESTORS AND SECURITY HOLDERS OF THE TORRINGTON WATER COMPANY ARE URGED TO READ CAREFULLY THE REGISTRATION STATEMENT, PROSPECTUS, PROXY STATEMENT AND OTHER DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT EVERSOURCE ENERGY, AQUARION COMPANY, THE TORRINGTON WATER COMPANY AND THE PROPOSED TRANSACTION. Investors and security holders may be able to obtain free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC's website at www.sec.gov. The materials may also be obtained for free by directing a written request to: Susan Suhanovsky, President, The Torrington Water Company, PO Box 867, Torrington, CT 06790, telephone (860) 489-4149. Investors should read the proxy materials/prospectus before making a decision regarding the merger.

This filing may be deemed solicitation material in respect of the proposed business combination transaction between Aquarion Company and The Torrington Water Company. The directors, trustees, executive officers and certain other members of management and employees of Eversource Energy, Aquarion Company and The Torrington Water Company may be deemed “participants” in the solicitation of proxies from stockholders of The Torrington Water Company in favor of the proposed merger. You can find information about Eversource’s trustees and executive officers in Eversource’s annual report on Form 10-K for the year ended December 31, 2021, which was filed with the SEC on February 17, 2022 and its proxy statement for its 2021 annual meeting filed with the SEC on March 26, 2021. Information regarding the persons who may, under the rules of the SEC, be considered participants in the solicitation of the stockholders of The Torrington Water Company in connection with the proposed merger will be set forth in the registration statement, prospectus/proxy statement or other documents filed with the SEC if any when they become available. You may obtain these documents (when they become available) free of charge at the SEC’s web site at www.sec.gov and from Susan Suhanovsky at The Torrington Water Company as described above.

About Aquarion Water Company:

Aquarion Water Company is the public water supply company for more than 700,000 people in 68 cities and towns in Connecticut, Massachusetts and New Hampshire. It is the largest investor-owned water utility in New England and among the seven largest in the U.S. Based in Bridgeport, CT, Aquarion has been in the public water supply business since 1857. Across its operations, Aquarion strives to act as a responsible steward of the environment and to assist the communities it serves in promoting sustainable practices. Aquarion Water Company is a wholly-owned subsidiary of Eversource.

For more information on Aquarion Water Company, please visit www.aquarionwater.com or www.facebook.com/aquarionwater.

MUNICIPALITIES SUPPLIED					
1. Show below the names of the municipalities in which the respondent supplies water and the number of customers in each.					
Line No.	Name (a)	Estimated Population Supplied*** (b)	Number of customers served by meter* (c)	Number of customers not served by meter** (d)	Total customers supplied (e)
1	Torrington	29,000	9,789	-	9,789
2	New Hartford	18	7	-	7
3	Litchfield	171	57	-	57
4	Harwinton	402	134	-	134
5	Burlington	414	138	-	138
6					
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53					
54					
55	Total	30,005	10,125	-	10,125

THE TORRINGTON WATER COMPANY

Balance Sheets

	December 31,		
	2021	2020	2019
ASSETS			
Utility plant, at cost	\$74,999,793	\$71,847,851	\$69,057,611
Less: accumulated depreciation	<u>26,458,744</u>	<u>25,210,076</u>	<u>24,139,469</u>
Net utility plant	<u>48,541,049</u>	<u>46,637,775</u>	<u>44,918,142</u>
Nonutility property, net of accumulated depreciation	<u>202,624</u>	<u>372,935</u>	<u>372,935</u>
Current Assets			
Cash and cash equivalents	1,577,648	2,781,302	1,064,441
Accounts receivable	554,416	757,705	518,129
Accrued unbilled revenues	876,500	858,000	821,000
Regulatory asset-water revenue adjustment, current portion	627,149	631,461	707,560
Materials and supplies inventory	196,635	369,507	300,436
Prepaid expenses	<u>168,630</u>	<u>183,413</u>	<u>132,139</u>
Total Current Assets	<u>4,000,978</u>	<u>5,581,388</u>	<u>3,543,705</u>
Other Assets			
Other assets	1,924,448	1,976,334	2,306,894
Preliminary survey and investigation charges	154,216	154,216	230,862
Regulatory asset-income taxes recoverable	7,375,800	6,855,660	6,476,000
Regulatory asset-water revenue adjustment, net of current portion	146,373	142,065	154,160
Regulatory asset-unfunded postretirement benefits	<u>3,371,985</u>	<u>3,205,165</u>	<u>3,038,255</u>
Total Other Assets	<u>12,972,822</u>	<u>12,333,440</u>	<u>12,206,171</u>
Total Assets	<u>\$65,717,473</u>	<u>\$64,925,538</u>	<u>\$61,040,953</u>

See notes to financial statements

THE TORRINGTON WATER COMPANY

Balance Sheets (continued)

	December 31,		
	2021	2020	2019
STOCKHOLDERS' EQUITY AND LIABILITIES			
Stockholders' Equity			
Common stock, no par; 1,000,000 shares authorized; 864,000 issued and outstanding	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000
Retained earnings	<u>21,930,762</u>	<u>21,326,808</u>	<u>20,524,284</u>
Total Stockholders' Equity	<u>23,730,762</u>	<u>23,126,808</u>	<u>22,324,284</u>
Long-term debt, net	<u>12,305,080</u>	<u>12,656,619</u>	<u>10,515,289</u>
Current Liabilities			
Current portion of long-term debt	360,000	360,000	360,000
Accounts payable	191,921	586,707	329,619
Accrued taxes	501,964	695,550	611,538
Accrued interest	173,400	179,520	185,640
Other current liabilities	<u>113,561</u>	<u>131,691</u>	<u>133,408</u>
Total Current Liabilities	<u>1,340,846</u>	<u>1,953,468</u>	<u>1,620,205</u>
Other Liabilities			
Deferred income taxes	9,589,665	8,889,230	8,416,575
Regulatory liability-excess deferred income taxes	1,139,918	1,200,609	1,261,300
Unfunded postretirement benefits	3,371,985	3,205,165	3,038,255
Customer advances for construction	506,436	544,075	515,481
Contributions in aid of construction	11,078,991	10,772,973	10,850,172
Amortized contributions in aid of construction	<u>2,653,790</u>	<u>2,576,591</u>	<u>2,499,392</u>
Total Other Liabilities	<u>28,340,785</u>	<u>27,188,643</u>	<u>26,581,175</u>
Total Stockholders' Equity and Liabilities	<u>\$65,717,473</u>	<u>\$64,925,538</u>	<u>\$61,040,953</u>

See notes to financial statements

THE TORRINGTON WATER COMPANY

Statements of Income and Retained Earnings

	Year Ended December 31,		
	2021	2020	2019
OPERATING REVENUES			
Contracts with customers	\$ 6,934,525	\$ 6,956,272	\$ 6,268,405
Alternative revenue programs	900,619	762,420	1,211,817
Total Operating Revenues	<u>7,835,144</u>	<u>7,718,692</u>	<u>7,480,222</u>
OPERATING EXPENSES			
Operation expenses	2,485,521	2,570,359	2,381,493
Maintenance expenses	703,589	698,831	647,629
Depreciation expense	1,217,968	1,170,187	1,146,922
Taxes other than income taxes	1,382,016	1,333,810	1,319,487
Income taxes	133,200	135,900	74,200
Total Operating Expenses	<u>5,922,294</u>	<u>5,909,087</u>	<u>5,569,731</u>
Utility Operating Income	<u>1,912,850</u>	<u>1,809,605</u>	<u>1,910,491</u>
Other Income and Deductions			
Merchandising and jobbing, net	123,068	123,170	116,208
Interest income	2,411	2,212	4,025
Miscellaneous non-operating income	247,496	192,286	160,412
Gain on forgiveness of Paycheck Protection Program loan	-	276,057	-
Allowance for funds used during construction	42,306	26,707	10,905
Total Other Income and Deductions	415,281	620,432	291,550
Taxes applicable to other income	33,604	28,604	21,055
Net Other Income and Deductions	<u>381,677</u>	<u>591,828</u>	<u>270,495</u>
Income Before Interest Expense	<u>2,294,527</u>	<u>2,401,433</u>	<u>2,180,986</u>
Interest Expense			
Interest on long-term debt	489,624	466,235	446,760
Amortization of deferred financing costs	8,461	7,998	7,350
Other interest	168	1,476	1,538
Total Interest Expense	<u>498,253</u>	<u>475,709</u>	<u>455,648</u>
Net Income	1,796,274	1,925,724	1,725,338
RETAINED EARNINGS			
Dividends declared	(1,192,320)	(1,123,200)	(1,080,000)
Retained earnings, beginning	21,326,808	20,524,284	19,878,946
Retained earnings, ending	<u>\$21,930,762</u>	<u>\$21,326,808</u>	<u>\$20,524,284</u>
PER SHARE AMOUNTS			
Net income, basic	\$ 2.08	\$ 2.23	\$ 2.00
Dividends declared	\$ 1.38	\$ 1.30	\$ 1.25
Book value	\$ 27.47	\$ 26.77	\$ 25.84

See notes to financial statements

INDUSTRY TIMELINESS: 64 (of 88)

water utilities.

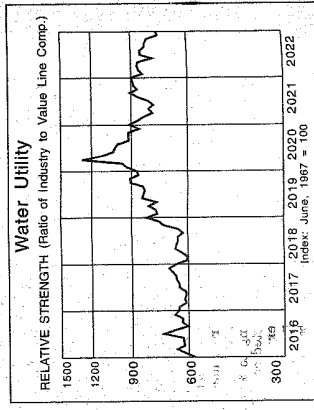
Scarcity Of Stocks

The total market capitalization of the Water Utility Industry is about \$51 billion, or slightly below that of Dominion Energy, the nation's fourth largest electric utility. Moreover, American Water Works accounts for over 54% of the total. Thus, in the group there are only two large cap stocks. (The other Essential Utilities.) That leaves 4 companies that have market caps ranging from \$2.5 billion to \$3.4 billion. The demand to own shares by the large institutional investors clearly outstrips the supply. This is one of the prime reasons for these stocks trading at such seemingly inflated P/E ratios. Of the six water stocks covered by Value Line, the P/E's range from a low of 24.8, to a high of 38.8, with the average being 32.4. Essential Utilities is the only equity with a P/E below 30, mostly because of its gas utility operations.

Conclusion

Should investors want to become involved in this sector, they must be willing to pay a huge premium. While this sector has several positive attributes, it also has a severe limitation. For one, the returns on equity are determined by an outside entity. Thus, there is a ceiling to each company's profit potential. Furthermore, positive relations with regulators over the past decade or so, but that was during a time of very low inflation. Passing along the rate hike needed to finance the replacement of old pipes will likely remain above the level of inflation, which is currently over 6%. Staff regulatory commissions are under political pressure to keep ratepayers' bills low. So, even though a utility may have spent funds prudently, that does not necessarily mean that regulators will allow a fair return to be made on the investment. In the electric utility sector, this has happened frequently, mainly due to a backlash from the public. Regulators are appointed by politicians. Elected officials do not gain popular support. (I.e. voters) by raising utility bills. In our opinion, Wall Street has not taken this into account, as it certainly is not reflected in the price of the stocks. As always, we urge investors to read each individual report before investing.

James A. Flood



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The Water Utility Industry consists of six investor-owned companies that provide water services to residential, commercial, and industrial customers. The group is extremely small because most of the water utilities in the United States are run by states and local municipalities. The fundamentals in this industry do not change quickly. Change comes incrementally here, which can be both good and bad. Almost every water utility in the country is playing catch up. For years, the nation's pipelines and wastewater facilities had been falling into disrepair. Over the past decade or so, the industry has been investing heavily to replace these older assets.

All utilities are overseen by some state authority that decides on what rates water users will ultimately pay. Fortunately, the relations between the industry and regulators has been very constructive in the recent past. These relationships may be tested in the coming years because of inflation. Earnings in the Water Industry are well defined. The demand for water is mostly inelastic, except for when rates are raised meaningfully during a drought or water emergency to dampen demand. Almost all of these stocks score well for Price Stability, Price Growth Persistence, and Earnings Predictability.

In the past three months, the equities in this group have outperformed the market averages.

Fundamentals

Members of this group are all in the midst of large ongoing construction programs that ought to take decades to complete. For years, insufficient capital was allocated to upgrading and modernizing the country's water infrastructure. Indeed, the average age of many pipelines is now between 60 and 75 years. As a result, in an era in which water has become scarcer, a large volume of it was leaking and being wasted due to a shoddy transmission system. Both the utilities and regulatory bodies are to blame for the predicament because neither party wanted to receive backlash from raising customer bills to make the required improvements. In any case, the industry has taken steps to correct this situation. Instead of one massive spending program, the outlays will be made gradually.

Mediocre Finances

To fund the building projects, most utilities have to depend in part, on external financing. Over the past 15 years, we have been in a low interest rate environment and debt was the preferred source of financing. With interest rates for long-maturity corporate bonds spiking higher, there is a chance that this could change. Many water utilities have been reluctant to issue equity in the past. Since the industry's stocks are now trading with historically high P/E ratios (more below), we think now would be a good time to sell shares. For example, eleven years ago, American Water Works had 175.66 million shares outstanding. When 2022 ended, we estimated the figure rose to just 182 million, a meager annual growth rate of 0.3%. (The company hasn't had any kind of stock repurchase program.) Over that same time, American Water's long-term debt-to-total capital ratio has increased. While this is not a weak balance sheet, it can't be classified as strong either. This also applies to most

AMER. STATES WATER NYSE:AWR

Table with columns: TIMELINESS, SAFETY, TECHNICAL, BETA, 18-Month Target Price Range, Low-High, 2025-27 PROJECTIONS, Institutional Decisions, CAPITAL STRUCTURE, CURRENT POSITION, ANNUAL RATES, EARNINGS PER SHARE, and various financial metrics like Cash Assets, Receivables, Payables, etc.

AMERICAN STATES WATER'S BOTTOM LINE BYST FOR EARNINGS GROWTH. ASUS IS AN UNREGULATED BUSINESS SEGMENT THAT PROVIDES WATER SERVICES TO UNITED STATES MILITARY INSTALLATIONS. THE ARMY IS IN THE PROCESS OF PRIVATIZING ITS WATER AND WASTE SYSTEMS TO OUTSIDE ENTITIES. REQUESTS FOR PROPOSALS FOR 50-YEAR CONTRACTS ARE BEING MADE FOR BIDDERS. ASUS HAS BEEN UNATTRACTIVE. AND, OVER THE PULL TO 2025, DESPITE GOOD DIVIDEND GROWTH PROSPECTS, AWR'S TOTAL RETURN POTENTIAL IS WELL BELOW THE VALUE LINE MEDIAN. IN FACT, THE EQUITY IS TRADING NEAR THE TOP OF OUR TARGET RANGE.

water & wastewater services to U.S. military bases through its ASUS subsidiary, Solid Coastal City Wtr. of AZ (P/E). Employees of our Regulated Utility, Golden State Water Co., (P/E 25.5), are off & on (P/E 43.5). (4222 W. 10th St., Los Angeles, CA 90044). Orange Counties. The company also provides electricity to 24,658 customers in Big Bear Lake and San Bernardino County, provides water & wastewater services to U.S. military bases through its ASUS subsidiary, Solid Coastal City Wtr. of AZ (P/E). Employees of our Regulated Utility, Golden State Water Co., (P/E 25.5), are off & on (P/E 43.5). (4222 W. 10th St., Los Angeles, CA 90044). Orange Counties. The company also provides electricity to 24,658 customers in Big Bear Lake and San Bernardino County, provides

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Artesian Res Corp NASDAQ:ARTNA

Last Price **\$60.77** Day Change **-\$0.53 (-0.86%)** Trailing P/E **1.36** Relative P/E Last FY **1.82%** Dividend Yield **--** 3 to 5-Year Target Price Range **--** Performance **--** Safety **--** Financial Strength **--**
 As of 9:32 AM Jan 27, 2023. Delayed at least 15 minutes.

Industry Rank: Water Utility -

Securities Banner:
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CHARTING

1d 5d 3m 1y 5y Show data

QUOTES

Last Price **\$61.30** Day's Change **\$0.00 0.00%** Volume **50**
 Bid (size) **\$58.74 (1)** Ask (size) **\$63.72 (1)** Above 10-day avg.
 As of 3:59 PM Jan 26, 2023. Delayed at least 15 minutes.

Previous close **61.30**
 Open **--**
 Trailing P/E **--**
 Market cap **527.79M**
 Shares outstanding **8.61M**
 Beta **0.7**
 Next earnings date **5/8/2020**
 52 Week Low & High **\$44.08 6/14/2022 1/25/2023 \$63.00**
\$61.30

Hist. Prices

INDUSTRY AN

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Filing	Filing Date	Category
SC 13G/A	Jan 24, 2023	Insider Activity
5	Jan 17, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity
5	Jan 10, 2023	Insider Activity

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Amgen Inc	AMGN	1
Apple Inc	AAPL	1
Boeing Co	BA	3
Caterpillar Inc	CAT	2
Chevron Corporation	CVX	3
Cisco Systems Inc	CSCO	1
Coca Cola Company	KO	1
Dow Inc.	DOW	3

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INSIDER TRANSACTIONS

Options Buys & Sells

All insiders

Date	Insider	Trans.
Dec 14	Taylor Dian C	Sell
Dec 14	Taylor Dian C	Sell
Dec 13	Taylor Dian C	Sell
Dec 13	Taylor Dian C	Sell
Dec 12	Taylor Dian C	Sell
Dec 12	Taylor Dian C	Sell
Dec 9	Taylor Dian C	Sell

INSTITUTIONAL OWNERSHIP

Number of Transactions Show top holders

Buyers Sellers Closing price
 Percent Shares Held by Institutions

FINANCIAL STATEMENTS

Income Statement & Balance Sheet	2021	2 Year Trend
Gross Profit	49	
Total Operating Expenses	69	
Operating Income	22	
Net Income	17	
Total Liabilities	447	
Shareholders' Equity	178	
Total Liab. & Stockholders' Eq.	625	
Cash Flow		
Closing Cash	0	
Net CapEx	--	
Free Cash Flow	-10	

York Water Co. (The) NASDAQ:YORW

Last Price **\$45.60** Day Change **\$0.05 (0.11%)** Trailing P/E **3.00** Relative P/E Last FY **1.78%** Dividend Yield **--** 3 to 5-Year Target Price Range **--** Performance **--** Safety **--** Financial Strength **--**
As of 9:30 AM Jan 27, 2023. Delayed at least 15 minutes.

Industry Rank: Water Utility -

Securities Banner:
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CHARTING

1d 5d 3m 1y 5y Show data

QUOTES

Last Price **\$45.55** Day's Change **\$0.00 0.00%** Volume **28,746**
Bid (size) **\$45.60 (5)** Ask (size) **\$46.90 (3)** Below 10-day avg.
As of 4:00 PM Jan 26, 2023. Delayed at least 15 minutes.

Previous close 45.55
Open --
Trailing P/E --
Market cap 650.27M
Shares outstanding 14.28M
Beta 0.8
Next earnings date 3/14/2012
52 Week Low & High
\$36.85 10/13/2022 **\$47.95** 3/7/2022
\$45.55

Hist. Prices

INDUSTRY AN

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Filing	Filing Date	Category
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4	Jan 20, 2023	Insider Activity
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4	Jan 19, 2023	Insider Activity
4	Jan 19, 2023	Insider Activity
4	Jan 19, 2023	Insider Activity
4	Jan 19, 2023	Insider Activity
4	Jan 19, 2023	Insider Activity
4	Jan 19, 2023	Insider Activity
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Amgen Inc	AMGN	1
Apple Inc	AAPL	1
Boeing Co	BA	3
Caterpillar Inc	CAT	2
Chevron Corporation	CVX	3
Cisco Systems Inc	CSCO	1
Coca Cola Company	KO	1
Dow Inc.	DOW	3

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INSIDER TRANSACTIONS

Options Buys & Sells

All insiders

Date	Insider	Trans.
Dec 20	Rasmussen Stev...	Buy
Dec 9	Hand Joseph Th...	Buy
Nov 21	Rasmussen Stev...	Buy
Nov 14	Bracey Vernon L	Sell
Oct 20	Rasmussen Stev...	Buy
Oct 17	Hand Joseph Th...	Buy
Oct 17	Wheeler Mark A	Buy

INSTITUTIONAL OWNERSHIP

Number of Transactions Show top holders

Buyers Sellers Closing price

Percent Shares Held by Institutions

FINANCIAL STATEMENTS

Income Statement & Balance Sheet	2021	2 Year Trend
Gross Profit	43	
Total Operating Expenses	32	
Operating Income	23	
Net Income	17	
Total Liabilities	306	
Shareholders' Equity	153	
Total Liab. & Stockholders' Eq.	459	
Cash Flow		
Closing Cash	0	
Net CapEx	--	
Free Cash Flow	11	

Company Name	AMERICA N STATES WATER COMPANY	ARTESIAN WATER WORKS COMPANY, INC.	RESOURC ES CORPORATION	CALIFORN IA WATER SERVICE GROUP	ESSENTIAL UTILITIES, INC.	MIDDLESEX WATER COMPANY	SJW GROUP	THE YORK WATER COMPANY
2016 Sales-Net[y16]	436.087	3302	79.089	609.37	819.875	132.906	339.706	47.584
2017 Sales-Net[y17]	440.603	3357	82.235	676.113	809.525	130.775	389.225	48.589
2018 Sales-Net[y18]	436.816	3440	80.411	698.196	838.091	138.077	397.699	48.437
2019 Sales-Net[y19]	473.869	3610	83.595	714.557	889.692	134.598	420.482	51.578
2020 Sales-Net[y20]	488.243	3777	88.141	794.307	1462.698	141.592	564.526	53.852
2021 Sales-Net[y21]	498.853	3930	90.859	790.909	1878.144	143.141	573.686	55.119
2016 Cash & Short Term Investment[y16]	0.436	75	0.226	25.492	3.763	3.879	6.349	4.209
2017 Cash & Short Term Investment[y17]	0.214	55	0.952	94.776	4.204	4.937	7.799	0.002
2018 Cash & Short Term Investment[y18]	7.141	130	0.293	47.176	3.627	3.705	420.722	0.002
2019 Cash & Short Term Investment[y19]	1.334	60	0.596	42.653	1868.922	2.23	12.944	0.002
2020 Cash & Short Term Investment[y20]	36.737	547	0.028	44.555	4.827	4.491	5.269	0.002
2021 Cash & Short Term Investment[y21]	4.963	116	0.092	78.38	10.567	3.533	10.908	0.001
2016 Current Assets-Total[y16]	166.875	784	14.635	142.069	128.65	26.716	99.611	12.62
2017 Current Assets-Total[y17]	155.463	720	18.985	227.873	131.246	29.247	66.858	8.611
2018 Current Assets-Total[y18]	131.468	781	16.118	188.702	147.172	30.815	502.722	9.011
2019 Current Assets-Total[y19]	122.456	1285	14.207	184.712	2015.127	29.133	122.046	9.384
2020 Current Assets-Total[y20]	157.115	1906	17.619	266.016	380.22	34.123	127.331	16.29
2021 Current Assets-Total[y21]	138.052	1554	19.16	300.458	437.795	34.355	134.085	11.262
2016 Debt in Current Liabilities[y16]	90.33	1423	8.478	123.308	169.822	18.159	14.325	0.044
2017 Debt in Current Liabilities[y17]	59.324	1230	11.258	291.02	139.048	34.865	25	1.044
2018 Debt in Current Liabilities[y18]	40.32	1049	17.784	170.011	228.723	55.843	100	1.03
2019 Debt in Current Liabilities[y19]	7.193	814	9.24	198.42	142.941	27.178	139.481	6.5
2020 Debt in Current Liabilities[y20]	2.371	1611	28.695	376.884	214.22	9.255	251.335	0
2021 Debt in Current Liabilities[y21]	33.421	653	28.33	41.994	286.709	20.531	102.102	7.5
2016 Current Liabilities-Total[y16]	177.944	2392	19.328	250.23	301.536	47.056	63.573	8.184
2017 Current Liabilities-Total[y17]	156.662	2325	28.461	490.959	284.488	64.537	85.052	9.145
2018 Current Liabilities-Total[y18]	146.585	2094	37.731	321.166	398.977	94.363	163.985	10.841
2019 Current Liabilities-Total[y19]	115.998	2045	25.599	358.721	323.461	64.981	234.567	15.156
2020 Current Liabilities-Total[y20]	118.572	2881	43.724	588.706	603.873	56.848	350.795	11.993
2021 Current Liabilities-Total[y21]	155.574	2141	47.702	256.576	675.063	56.619	203.271	20.086
2016 noncash wkcap	78.825	-260	3.559	-10.345	-6.827	-6.06	44.014	0.271
2017 noncash wkcap	57.911	-430	0.83	-66.842	-18.398	-5.362	-0.993	0.508
2018 noncash wkcap	18.062	-394	-4.122	-9.629	-26.709	-81.032	171.159	10.039
2019 noncash wkcap	12.317	-6	-2.748	-18.242	-34.315	-10.9	14.016	0.726
2020 noncash wkcap	4.177	89	2.562	9.639	-14.26	-17.961	22.602	4.295
2021 noncash wkcap	10.936	-50	-0.304	7.496	38.874	-5.266	22.008	-1.325
2017 Change Non cashWrk Cap	-20.914	-170	-2.729	-56.497	-11.571	0.698	-45.007	0.237
2018 Change Non cashWrk Cap	-39.849	36	-4.952	57.213	-8.311	-75.67	172.152	9.531
2019 Change Non cashWrk Cap	-5.745	388	1.374	-8.613	-7.606	70.132	-157.143	-9.313
2020 Change Non cashWrk Cap	-8.14	95	5.31	27.881	20.055	-7.061	8.586	3.569
2021 Change Non cashWrk Cap	6.759	-139	-2.866	-2.143	53.134	12.695	-0.594	-5.62
2017	-4.75%	-5.06%	-3.32%	-8.36%	-1.43%	0.53%	-11.56%	0.49%
2018 WK cap/sale	-9.12%	1.05%	-6.16%	8.19%	-0.99%	-54.80%	43.29%	19.68%
2019 WK cap/sale	-1.21%	10.75%	1.64%	-1.21%	-0.85%	52.10%	-37.37%	-18.06%
2020 WK cap/sale	-1.67%	2.52%	6.02%	3.51%	1.37%	-4.99%	1.52%	6.63%
2021 WK cap/sale	1.35%	-3.54%	-3.15%	-0.27%	2.83%	8.87%	-0.10%	-10.20%
Average	-3.08%	1.14%	-0.99%	0.37%	0.18%	0.34%	-0.85%	-0.29%
							Median	-0.05%

The following sources of information were reviewed but are not included in the workpapers as they are included separately in the PA PUC section 1329 filing related to this FMV and are considered included by this reference:

“Engineering Assessment Study of: Brentwood Borough’s Sanitary Sewer System” and related files prepared by The Gateway Engineers, Inc.;

Wastewater System’s 537 Plan;

Wastewater System’s Chapter 94 Reports;

Wastewater System’s Sewage Service and Treatment Agreements;

Wastewater System’s Source Reduction Plan;

Wastewater System’s Operation and Maintenance Plan annual reports (2018 – 2021)

Asset Purchase Agreement;