Application of Pennsylvania-American Water Company for Acquisition of the Wastewater Assets of East Coventry Township
66 Pa. C.S. §1329

Application Filing Checklist – Water/Wastewater

Docket No. A-2025-3053487

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, ASA, P.E., CDP, Principal and Director for Weinert Appraisal and Depreciation Services LLC (also known as WADS Consultants) on behalf of PAWC and Harold Walker III, Manager, Financial Studies Gannett Fleming Valuation and Rate Consultants, LLC at **Appendix A-5.1** and at **Appendix A-5.2**, respectively.

Application of Pennsylvania-American Water Company for Acquisition of the Wastewater Assets of East Coventry Township ("East Coventry")
66 Pa. C.S. §1329
Application Filing Checklist – Water/Wastewater

Docket No. A-2025-3053487

APPENDIX A-5.1

FAIR MARKET VAULATION OF EAST COVENTRY WASTEWATER SYSTEM

BY WADS CONSULTING

Pennsylvania American Water Company

Fair Market Value Appraisal
Report
of
East Coventry Township
Sanitary Sewer Collection, Conveyance and Purchased Treatment
&
Work Papers
As of February 24, 2024

WADS Consultants

Depreciation and Valuation Group

8555 West Forest Home Avenue, Suite 201

Greenfield, WI 53228

Office: 414-529-5755 / Cell: 414-698-8371

e-mail: weinertj@auswest.net

Jerome C. Weinert
Principal and Owner

WADS Consultants
Weinert Appraisal and Depreciation Services LLC
8555 West Forest Home Avenue
Suite 201
Greenfield, WI 53228
Telephone 414-529-5755
Cell 414-698-8371
E-Mail weinertj@auswest.net

October 15, 2024

Mr. Scott D. Fogelsanger
Director, Valuation Strategies
American Water Company
852 Wesley Drive
Mechanicsburg, PA 17055

RE: UVE Market Value Appraisal of East Coventry Township's Wastewater Collection, Conveyance, and Purchased Treatment Capacity

Enclosed is Weinert Appraisal and Depreciation Services, LLC's (WADS Consultants) fair market value appraisal report for East Coventry Township's wastewater collection, conveyance, and purchased treatment capacity (System) as of February 24, 2024, prepared for Pennsylvania American Water Company (PAWC). The report was prepared based on the 2024 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (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 East Coventry Township's wastewater system's property, plant, and equipment operating as a Pennsylvania rate regulated wastewater utility is $13,405,035 determined based on the cost, income, and market approaches to value, as detailed in the following table:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value Appraisal

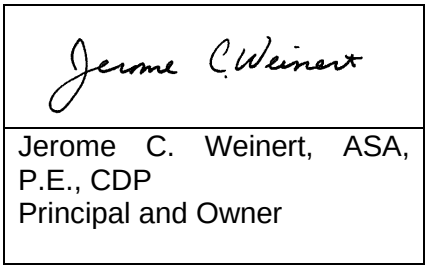
Appraisal Approach	Investor-owned Utility			Weight	Wtd Valuation Indications
Cost Approach		**Cost Approach**			
Depreciated Original Cost ($OCLD)		**Replacement Cost**			
Tangible Assets		**Tangible Assets**			
Original Cost ($OC)	9,445,761	**Replacement Cost New (COR)**	21,037,513		
Depreciated Original Cost ($OCLD)	6,999,001	**Depreciated Replacement Cost New (CORLD)**	15,313,526		
Intangible Assets		**Intangible Assets**			
Original Cost ($OC)	2,353,000	**Replacement Cost New (COR)**	7,063,706		
Depreciated Original Cost ($OCLD)	1,400,670	**Depreciated Replacement Cost New (CORLD)**	4,204,796		
Total Assets		**Total Assets**			
Original Cost ($OC)	11,798,761	**Replacement Cost New (COR)**	28,101,219		
Depreciated Original Cost ($OCLD)	8,399,671	**Depreciated Replacement Cost New (CORLD)**	19,518,322		
Economic Obsolescence (EO)		**Economic Obsolescence (EO)**			
Purchase Price (Asset Purchase Agreement)	11,975,448	Purchase Price (Asset Purchase Agreement)	11,975,448		
Preliminary OCLD Total Assets	8,399,671	Preliminary Replacement Cost	19,518,322		
Economic Obsolescence (EO $s)	-	Economic Obsolescence (EO $s)	7,542,874		
EO % of Preliminaary RCNLD	0.0000%	EO % of Preliminaary RCNLD	38.6451%		
Fair Market Value (FMV) Tangible Assets (OCLD)		**Fair Market Value (FMV) Tangible Assets**			
FMV Tangible Assets	6,999,001	FMV Tangible Assets	9,395,599		
FMV Intangible Assets	1,400,670	FMV Intangible Assets	2,579,848		
FMV Total Assets	8,399,671	FMV Total Assets	11,975,447		
Cost Approach Conclusion			**11,975,447**	**33.33%**	**3,991,816**
Income Approach					
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	15,077,667				
Income Approach Conclusion	**15,077,667**			**33.33%**	**5,025,889**
Market Approach					
Market Comparables to:					
OCLD	15,096,169				
CORLD	10,222,441				
Customers	9,019,202				
Cash Flows					
EBITDA Periods 1-5	13,873,550				
EBITDA Periods 1-13	13,379,739				
Value Line	14,592,917				
Mean	12,697,336				
Median	13,626,645				
Conclusion	13,161,990				
Market Approach Conclusion	**13,161,990**			**33.33%**	**4,387,330**
Appraisal Conclusion	**$ 13,405,035**			**100.00%**	**13,405,035**
Conclusion (cost approach)	**$ 11,975,447**				

As the purpose of this appraisal was to fulfill the requirements of Act 12 in the establishment of value for rate making of the East Coventry Township's wastewater collection, conveyance, and purchased treatment capacity system's property, plant and equipment the appraisal's conclusion of $13,405,035 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,
WADS Consultants
October 15, 2024

By:



Jerome C. Weinert, ASA, P.E., CDP
Principal and Owner

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
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East Coventry Township's (Pennsylvania) Wastewater Collection, Conveyance System and Purchased Treatment Capacity

Fair Market Value Appraisal Report
As of February 24, 2024
for
Pennsylvania American Water Company

WADS Consultants
Weinert Appraisal and Depreciation Services, LLC
8555 West Forest Home Avenue Suite 201
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WADS CONSULTANTS

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PAWC – WADS CONSULTANTS UVE CONTRACT

October 15, 2024

Pennsylvania American Water Company
Mechanicsburg, Pennsylvania

WADS Consultants
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RE: UVE Market Value Appraisal of East Coventry Township's Wastewater Collection, Conveyance System, and Purchased Treatment Capacity

Enclosed is Weinert Appraisal and Depreciation Services, LLC's (WADS Consultants) fair market value appraisal report of the East Coventry Township's (Pennsylvania) wastewater collection, conveyance system, and purchased treatment capacity (System) as of February 24, 2024, prepared for our client Pennsylvania American Water Company (PAWC). The report was prepared based on the 2024 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) Statues 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 East Coventry Township's (Pennsylvania) wastewater collection, conveyance and purchased treatment capacity the system's property, plant, and equipment operating as Pennsylvania rate regulated wastewater utility is $13,405,035 determined based on the cost, income, and market approaches to value, as detailed in the following table:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
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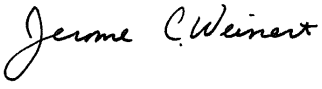
Appraisal Conclusion	**$ 13,405,035**			**100.00%**	**13,405,035**
Conclusion (cost approach)	**$ 11,975,447**				

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 East Coventry Township's wastewater collection and treatment, conveyance system's property, plant and equipment this appraisal's conclusion of $13,405,035 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,
WADS Consultants
October 15, 2024

By:



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APPRAISAL CERTIFICATION
for the Fair Market Appraisal of
East Coventry Township, Pennsylvania's
Wastewater Collection, Conveyance System and Purchased Treatment Capacity
As of February 24, 2024
Prepared for
Pennsylvania American Water Company

WADS 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, WADS 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 WADS 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 WADS 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 2024 Edition.

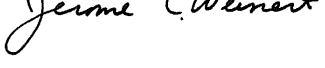
- The signers of this report have not made personal inspections of the property that is the subject of this report.

- No individuals provided significant professional assistance to the persons signing this report. However, Scott Fogelsanger of American Water Company provided assistance in obtaining information and data from the East Coventry Township, Pennsylvania and the Engineer's Assessment report prepared by Carroll Engineering Corporation which was the inventory starting point of the Cost Approach.

WADS CONSULTANTS

WADS Consultants
October 15, 2024

By:



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NARRATIVE REPORT

WADS CONSULTANTS

EXECUTIVE SUMMARY

The purpose of this value appraisal is the determination of the fair market value of the property plant and equipment of the East Coventry Township's wastewater collection and conveyance system (System) and purchased treatment capacity for our client Pennsylvania American Water Company (PAWC). The report was prepared based on the 2024 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues 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 Executive Summary 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.

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]."[1]
>
> 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"[2]
>
> 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."[3] In the trended original cost method, East Coventry Township'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. WADS Consultants utilized the Engineer's Assessment performed by Carroll Engineering Corporation's (Engineer's Assessment tab) as the starting point of the Cost Approach. Utilizing the Engineer's Assessment WADS Consultants developed the System's original cost less depreciation (OCLD) and replacement cost new less depreciation (CORLD) in property, plant and equipment on February 24, 2024 (Cost Approach tab).

[1] The Appraisal of Real Estate, 14th Edition. pages 569-570
[2] Ibid, page 570
[3] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Third Edition. Page 50

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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
353.10	Treatment Contract	HW	W-1	17.00	HWW-117	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
355.30	Generating Equipment - Pumping	USBLS	PPI	4.00	USBLS4	1.00
360.10	Collection Sewers - Force - Mains	HW	W-1	34.00	HWW-134	1.00
361.10	Collection Sewers - Gravity - Mains	HW	W-1	34.00	HWW-134	1.00
361.20	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.30	Flow Measuring Devices - Pumping	HW	W-1	40.00	HWW-140	1.00
371.40	Pumping Equipment - Treatment	HW	W-1	9.00	HWW-19	1.00
380.40	Treatment and Disposal Equipment Chemical Feed Systems	HW	W-1	17.00	HWW-117	1.00
389.30	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00

Using the trended original cost method, the System's investment in plant, property and equipment of $11,798,761 was determined to have a reproduction cost new of $28,101,219 as summarized in the following table:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	WAD Input NARUC Code	Carroll Engineering Corporation April 2024 Asset Description	Eng Assmnt Original Cost	WAD Input Cost Index Table	Translator	RCN	WAD Input COR / RCN Factor	Col (14) * (15) COR
353.00	353.00	Land & Land Rights	12	USBLS3	1,153.75	13,845	1.00	13,845
353.00	353.00	Treatment Contract	2,353,000	HWW-117	3.00	7,063,706	1.00	7,063,706
353.00	353.00	Stuctures & Improvements - Pumping	795,310	HWW-18	2.19	1,742,711	1.00	1,742,711
353.00	353.00	Generating Equipment - Pumping	145,578	USBLS4	1.83	266,445	1.00	266,445
353.00	353.00	Collection Sewers - Force - Mains	609,828	HWW-134	2.66	1,623,322	1.00	1,623,322
353.00	353.00	Collection Sewers - Gravity - Mains	5,029,881	HWW-134	2.19	11,000,436	1.00	11,000,436
353.00	353.00	Collection Sewers - Gravity - Manholes	764,192	HWW-145	1.72	1,311,617	1.00	1,311,617
353.00	353.00	Service Laterals	863,916	HWW-139	1.65	1,422,371	1.00	1,422,371
353.00	353.00	Flow Measuring Devices - Pumping	37,733	HWW-140	4.47	168,661	1.00	168,661
353.00	353.00	Pumping Equipment	315,824	HWW-19	3.31	1,046,749	1.00	1,046,749
353.00	353.00	Treatment and Disposal Equipment Chemical Feed Systems	207,929	HWW-117	2.77	576,522	1.00	576,522
353.00	353.00	Other Plant & Misc Equip	675,559	HWW-117	2.76	1,864,834	1.00	1,864,834
		Total East Coventry Township Wastewater Utility	11,798,761			28,101,219		28,101,219
Grand Total	Grand Total	Grand Total	11,798,761		2.38	28,101,219	1.00	28,101,219
		Difference	-			-		-

Replacement Cost New Less Depreciation - The replacement cost described above reflects the cost of new property; however, East Coventry Township's wastewater collection and treatment 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."[4]
>
> 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 or less costly replacement property that new technology has developed."[5]

[4] The Dictionary of Real Estate Appraisal, 4th Edition
[5] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.

Economic, or external, obsolescence is defined as "a loss in value caused by factors outside a property"[6] and is most often indicated by insufficient earning.

Based on our experience in regard to water and wastewater depreciation studies and our analysis of East Coventry Township's wastewater collection and treatment system operating performance; we found that the East Coventry Township'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, WADS 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. WADS Consultants has reviewed the PAWC studies which are summarized in the following table:

[6] The Appraisal of Real Estate, 13th Edition, page 442.

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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

(1)	(2)	(4) (4a)	(4) (4b)	(5)	(6) (6a)	(6) (6b)	(7)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	RCNLD Economic Obsolescence	Tax Depreciation		OCLD Economic Obsolescence
			years	% of CORLD	Table	Life	% of CORLD
353.00	Land & Land Rights	ZNonDep	0.00	38.65%	Non-Depr	0.00	1.00%
353.10	Treatment Contract	R2.0	45.00	38.65%	MACRS	25.00	1.00%
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	38.65%	MACRS	25.00	1.00%
355.30	Generating Equipment - Pumping	R3.0	35.00	38.65%	MACRS	25.00	1.00%
360.10	Collection Sewers - Force - Mains	R3.0	75.00	38.65%	MACRS	25.00	1.00%
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	38.65%	MACRS	25.00	1.00%
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	38.65%	MACRS	25.00	1.00%
363.00	Service Laterals	R3.0	50.00	38.65%	MACRS	25.00	1.00%
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	38.65%	MACRS	25.00	1.00%
371.40	Pumping Equipment - Treatment	R3.0	35.00	38.65%	MACRS	25.00	1.00%
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	38.65%	MACRS	25.00	1.00%
389.30	Other Plant & Misc Equip	R3.0	45.00	38.65%	MACRS	25.00	1.00%

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 $28,101,219 the resultant COR less normal depreciation (CORLD) was found to be $19,518,322 detailed as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at February 24, 2024 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	Carroll Engineering Corporation April 2024		Col (16)	WAD Input	WAD Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.00	Land & Land Rights	13.00	13,845	ZNonDep	-	-	13.00	-	13,845
353.10	Treatment Contract	19.50	7,063,706	R2.0	45.00	28.68	48.18	45.00	4,204,796
354.30	Stuctures & Improvements - Pumping	18.69	1,742,711	R4.0	45.00	26.74	45.44	45.00	1,025,824
355.30	Generating Equipment - Pumping	18.18	266,445	R3.0	35.00	18.27	36.45	35.00	133,612
360.10	Collection Sewers - Force - Mains	19.07	1,623,322	R3.0	75.00	56.61	75.69	75.00	1,214,310
361.10	Collection Sewers - Gravity - Mains	16.34	11,000,436	R2.5	80.00	65.13	81.47	80.00	8,795,972
361.20	Collection Sewers - Gravity - Manholes	15.86	1,311,617	S2.0	75.00	59.13	74.99	75.00	1,034,355
363.00	Service Laterals	14.15	1,422,371	R3.0	50.00	36.46	50.62	50.00	1,025,125
364.30	Flow Measuring Devices - Pumping	18.70	168,661	S2.0	30.00	13.43	32.13	30.00	70,617
371.30	Pumping Equipment	18.35	1,046,749	R3.0	35.00	18.12	36.47	35.00	520,401
380.40	Treatment and Disposal Equipment Chemical Feed Systems	18.43	576,522	R2.0	45.00	29.53	47.96	45.00	355,096
389.30	Other Plant & Misc Equip	18.37	1,864,834	R3.0	45.00	27.88	46.25	45.00	1,124,369
	Total East Coventry Township Wastewater Utility		28,101,219						19,518,322
Grand Total	Grand Total	17.59	28,101,219		61.51	45.62	63.21	0.69	19,518,322
			-						-

The preliminary cost approach to value of East Coventry Township's wastewater system property was found to be $19,518,322.

Original Cost less Depreciation

With the Pennsylvania PUC's Forth Implementation Order the importance of the original cost less depreciation (OCLD) requires that the Utility Valuation Experts' (UVE) appraisal address the OCLD. The Engineers Assessment provided the original cost by account and installation year for the development of the OCLD and the previously discussed depreciation lives were used to quantify the depreciation. The following table presents the development of the preliminary OCLD of $8,399,671 as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total East Coventry Township Wastewater Utility	11,798,761							3,399,090	8,399,671
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

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 East Coventry Township'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 East Coventry Township's wastewater system's operations were evaluated based on an analysis of historical operating performances over the period 2016 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 East Coventry Township's historical operations over time to operations of the wastewater operation similar to a public investor-owned water/wastewater utility. 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. 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 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	**100.0%**						**7.70%**
Growth (g)							**3.03%**
Rate without Growth: [(1+r)/(1+g)]-1							**4.53%**

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

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	1,076,411	375,036	525,137	701,375	176,238	50,915	728,086	6,458	(84,084)	0.964	(81,057)	(81,057)
2	1.5	1,210,962	400,603	556,480	810,359	253,879	73,346	775,338	7,266	(45,591)	0.895	(40,804)	(121,861)
3	2.5	1,665,073	429,545	591,927	1,235,528	643,601	185,936	825,858	24,522	199,212	0.831	165,545	43,684
4	3.5	1,873,207	462,182	631,920	1,411,025	779,105	225,083	879,995	11,239	294,708	0.771	227,220	270,904
5	4.5	2,107,358	498,869	676,943	1,608,489	931,546	269,124	938,016	12,644	388,705	0.716	278,313	549,217
6	5.5	2,465,609	504,400	727,521	1,961,209	1,233,688	356,412	1,000,200	19,346	585,251	0.665	389,192	938,409
7	6.5	2,514,921	511,041	676,123	2,003,880	1,327,757	383,589	680,387	2,663	937,241	0.617	578,278	1,516,687
8	7.5	2,565,219	518,729	710,619	2,046,490	1,335,871	385,933	709,066	2,716	948,775	0.573	543,648	2,060,335
9	8.5	2,770,437	527,413	747,829	2,243,024	1,495,195	431,962	739,079	11,081	1,060,902	0.532	564,400	2,624,735
10	9.5	2,825,846	537,045	787,935	2,288,801	1,500,866	433,600	770,490	2,993	1,081,718	0.494	534,369	3,159,104
11	10.5	2,882,363	547,584	831,130	2,334,779	1,503,649	434,404	803,365	3,052	1,093,958	0.459	502,127	3,661,231
12	11.5	3,112,952	558,997	877,623	2,553,955	1,676,332	484,292	837,774	12,452	1,219,437	0.426	519,480	4,180,711
13	12.5	3,175,211	571,254	927,630	2,603,957	1,676,327	484,291	873,790	3,361	1,242,515	0.396	492,036	4,672,747
14	13.5	3,238,715	584,330	981,384	2,654,385	1,673,001	483,330	911,487	3,429	1,256,139	0.367	461,003	5,133,750
15	14.5	3,497,812	598,205	1,039,131	2,899,607	1,860,476	537,492	950,947	13,991	1,397,177	0.341	476,437	5,610,187
16	15.5	3,567,768	615,391	599,320	2,952,377	2,353,057	679,798	276,319	3,778	1,992,482	0.317	631,617	6,241,804
17	16.5	3,639,123	633,094	608,643	3,006,029	2,397,386	692,605	278,393	3,853	2,031,178	0.294	597,166	6,838,970
18	17.5	3,930,253	651,327	618,116	3,278,926	2,660,810	768,708	280,481	15,722	2,214,015	0.273	604,426	7,443,396
19	18.5	4,008,858	670,108	627,740	3,338,750	2,711,010	783,211	282,585	4,244	2,268,710	0.254	576,252	8,019,648
20 and beyond	19.5	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	3.052	7,058,019	15,077,667
								13,826,360					

Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.235				Net Plant		18,166,302			
PW to Perpetuity = 1/Capitalization Rate				12.987				ADIT		(1,948,763)			
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * PW $Factor_{(19.5)}$				3.052				Rate Base		16,217,539	0.235	3,811,122	11,830,770
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		37,068,612	0.235	8,711,124	16,730,772
								PP	11,975,448				
								OCLD	8,399,671				
								PP/OCLD	1.426				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										26,432,342.47	0.235	6,211,600	14,231,248
								Average					14,467,614

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 $15,077,667. 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

systems and market value to book value ratios based on investor-owned water utilities' financial performance as reported in Value Line Investment Survey (January 5, 2024).

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 East Coventry Township'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:

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidder:	Montgomery	Wastewater Collection	50,250,000
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder:	Dauphin	Water Treatment and Distribution	22,500,000
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidder:	Montgomery	Wastewater Collection	21,000,000
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000
	End of Section 1329 Data								
					Count 19			Wastewater Collection and Treatment	15
								Wastewater Collection	7
								Water Treatment and Distribution	3
								Water Distribution	1
								All section 1329 Mean	26
								Standard Deviation	
								Median	
				Notes:					
				1				Final Purchase Price reflects the agreed upon purchase price achie	

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), depreciated replacement cost (CORLD), Customers, and Earnings before Interest,

(income) Taxes, Depreciation and Amortization (EBITDA) (periods 1-5 and 1-13) (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 5, 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.

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 following tables summarizes both the comparable sales and financial market ratio analysis and the Market Approach conclusion of this appraisal.

The following table presents the market derived ratios of purchase price to depreciated original cost and purchase price to replacement cost less depreciation:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Data

Market Sales Analysis - PP/OCLD	Simple		**Market Sales Analysis - PP/CORLD**	Simple	
All Section 1329 Acquistions			All Section 1329 Acquistions		
Mean	1.9442		Mean	0.8168	
Standard Deviation	0.9153		Standard Deviation	0.2242	
Median	1.5139		Median	0.881	
Water Treatment & Distribution			Water Treatment & Distribution		
Mean	1.4354		Mean	0.853616667	
Water Distribution			Water Distribution		
Mean	0.00		Mean	0.7686	
Wastewater Collection & Treatment			Wastewater Collection & Treatment		
Mean	1.7972		Mean	0.8536	
Wastewater Collection			Wastewater Collection		
Mean	1.8733		Mean	0.8077	
Wastewater Treatment Only			Wastewater Treatment Only		
Mean	-0.07607		Mean	0.0459	
WADS Conclusion	1.7972	WADS Input Cost Approach - OCLD	WADS Conclusion	0.8536	WADS Input Cost Approach - CORLD
East ConventryTownship OCLD	8,399,671		East ConventryTownship CORLD	11,975,447	
Market Value Indication	**15,096,169**		**Market Value Indication**	**10,222,441**	

The following table presents the market derived ratios to customers and value line ratio to OCLD:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Customer

	Simple	
All Section 1329 Acquistions		
Mean	8,557	
Standard Deviation	3,997	
Median	8,315	
Water Treatment and Distribution		
Mean	6,157	
Water Distribution		
Mean	3,992	
Wastewater Collection & Treatment		
Mean	10,410	
Wastewater Collection		
Mean	6,268	
Watewater Treatment Only		
Mean	4,142	

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.09	
Use (equity and debt)	2.09	WADS Input

Conclusion

East ConventryTownship Customers	866	WADS Input	East ConventryTownship OCLD	6,999,001	Cost Approach - OCLD
Wastewater Collection & Treatment	10,410	WADS Input			
Collection and Treatement Customers Market Value Indication	**9,015,060**		**Market Value Indication**	**14,592,917**	
Treatement Only Market Value Indication					
Treatment Only PP/customer	4,142	WADS Input			
Treatment Only Customers	-	WADS Input			
Market Value Indication Treatment Only	-				
Total Market Value Indication	**9,019,202**				

The following table present the market derived ratios of purchase price to the projected earnings before interest, income taxes, depreciation and amortization (EBITDA) for forecast periods 1-5 years and 1- 13 years:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)	Simple	
All Section 1329 Acquistions		
Mean	16.95	
Standard Deviation	5.91	
Median	16.94	
Conclusion	16.95	WADS Input
Water Treatment and Distribution		
Mean	14.94	
Water Distribution		
Mean	20.24	
Wastewater Collection & Treatment		
Mean	16.69	
Wastewater Collection		
Mean	17.88	
Watewater Treatment Only		
Mean	(1.19)	
Conclusion		
		Income
East Coventry Cash Flows	831,408	Approach
Wastewater Collection & Treatment	16.69	
Market Value Indication	**13,873,550**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)	Simple	
All Section 1329 Acquistions		
Mean	12.04	
Standard Deviation	3.59	
Median	11.98	
Conclusion	12.04	WADS Input
Water Treatment and Distribution		
Mean	10.50	
Water Distribution		
Mean	13.59	
Wastewater Collection & Treatment		
Mean	11.93	
Wastewater Collection		
Mean	12.70	
Watewater Treatment Only		
Mean	(0.77)	
Conclusion		
		Income
East Coventry Cash Flows	1,121,619	Approach
Wastewater Collection & Treatment	11.93	
Market Value Indication	**13,379,739**	

The following table summarizes each of the market derived ratio analyses and the conclusion of the market approach:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Summary of Market Analyses

Indicators	
OCLD	15,096,169
CORLD	10,222,441
Customers	9,019,202
Cash Flows	
EBITDA Periods 1-5	13,873,550
EBITDA Periods 1-13	13,379,739
Value Line	14,592,917
Mean	12,697,336
Median	13,626,645
Conclusion	**13,161,990**

The market approach conclusion of this appraisal was determined to be $13,161,990.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of $19,518,322 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."[7]

The above-described income approach value conclusion of $15,077,667 and the market approach conclusion of $13,161,990 for the East Coventry Township's future wastewater system compared to the preliminary cost approach conclusion of $19,518,322 indicates 38.6451% external obsolescence exists in the cost approach conclusion of $19,518,322 detailed as follows:

East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
RCNLD Tangible Assets		
Original Cost (OC)	(9)	9,445,761
Replacement Cost New (RCN)	(16)	21,037,513
Replacement Cost New less Depreciation (RCNLD)	(31)	15,313,526
Intangible Assets - Treatment Contract		
Original Cost (OC)	(9)	2,353,000
Replacement Cost New (RCN)	(16)	7,063,706
Replacement Cost New less Depreciation (RCNLD)	(31)	4,204,796
Preliminary Replacement Cost less Depreciation (RCNLD) Tangible and Intangible Assets		**19,518,322**
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary Replacement Cost		**19,518,322**
Economic Obsolescence (EO $s)		7,542,874
EO % of Preliminaary RCNLD	(40)	38.6451%
Fair Market Value (FMV) Tangible Assets		
FMV Tangible Assets		9,395,599
FMV Intangible Assets		2,579,848
FMV Total Assets	(41)	11,975,447

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

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)	WAD Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.00	Land & Land Rights	13,845	38.68%	8,490
353.10	Treatment Contract	4,204,796	38.65%	2,579,848
354.30	Stuctures & Improvements - Pumping	1,025,824	38.65%	629,394
355.30	Generating Equipment - Pumping	133,612	38.65%	81,977
360.10	Collection Sewers - Force - Mains	1,214,310	38.65%	745,039
361.10	Collection Sewers - Gravity - Mains	8,795,972	38.65%	5,396,758
361.20	Collection Sewers - Gravity - Manholes	1,034,355	38.65%	634,628
363.00	Service Laterals	1,025,125	38.65%	628,964
364.30	Flow Measuring Devices - Pumping	70,617	38.65%	43,326
371.30	Pumping Equipment	520,401	38.65%	319,291
380.40	Treatment and Disposal Equipment Chemical Feed Systems	355,096	38.64%	217,870
389.30	Other Plant & Misc Equip	1,124,369	38.65%	689,856
	Total East Coventry Township Wastewater Utility	19,518,322		11,975,441
Grand Total	Grand Total	19,518,322	38.65%	11,975,441
		-		-

Development of the Final Original Cost less Depreciation

The above-described income approach value conclusion of $15,077,667 and the market conclusion of $13,161,990 for the East Coventry Township's future wastewater system compared to the preliminary original cost approach conclusion of $8,399,671 indicates no external obsolescence exists in the cost approach conclusion of $8,399,671 detailed as follows:

East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Depreciated Original Cost (OCLD)		
OCLD Tangible Assets		
Original Cost (OC) Tangible Assets	(46)	9,445,761
Original Cost less Depreciation (OCLD)	(57)	6,999,001
Intangible Assets - Treatment Contract		
Original Cost (OC) Intangible Assets	(46)	2,353,000
Original Cost less Depreciation (OCLD)	(57)	1,400,670
Preliminary OCLD Total assets		
Original Cost (OC) Total Assets		11,798,761
Original Cost less Depreciation (OCLD) Total Assets		8,399,671
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary OCLD Total Assets		8,399,671
Economic Obsolescence (EO $s)		-
EO % of Preliminaary RCNLD		0.00%
Depreciated Original Cost (OCLD)	(57)	
OCLD Tangible Assets		6,999,001
OCLD Intangible Assets		1,400,670
OCLD Total Assets		8,399,671

The following table presents the final original cost less depreciation:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total East Coventry Township Wastewater Utility	11,798,761							3,399,090	8,399,671
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

Value Conclusion

The Fair Market Value of East Coventry's wastewater collection system's property, plant and equipment and its operation was determined to be $13,405,035 as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility			Weight	Wtd Valuation Indications
Cost Approach		**Cost Approach**			
Depreciated Original Cost ($OCLD)		**Replacement Cost**			
Tangible Assets		**Tangible Assets**			
Original Cost ($OC)	9,445,761	**Replacement Cost New (COR)**	21,037,513		
Depreciated Original Cost ($OCLD)	6,999,001	**Depreciated Replacement Cost New (CORLD)**	15,313,526		
Intangible Assets		**Intangible Assets**			
Original Cost ($OC)	2,353,000	**Replacement Cost New (COR)**	7,063,706		
Depreciated Original Cost ($OCLD)	1,400,670	**Depreciated Replacement Cost New (CORLD)**	4,204,796		
Total Assets		**Total Assets**			
Original Cost ($OC)	11,798,761	**Replacement Cost New (COR)**	28,101,219		
Depreciated Original Cost ($OCLD)	8,399,671	**Depreciated Replacement Cost New (CORLD)**	19,518,322		
Economic Obsolescence (EO)		**Economic Obsolescence (EO)**			
Purchase Price (Asset Purchase Agreement)	11,975,448	Purchase Price (Asset Purchase Agreement)	11,975,448		
Preliminary OCLD Total Assets	8,399,671	Preliminary Replacement Cost	19,518,322		
Economic Obsolescence (EO $s)	-	Economic Obsolescence (EO $s)	7,542,874		
EO % of Preliminaary RCNLD	0.0000%	EO % of Preliminaary RCNLD	38.6451%		
Fair Market Value (FMV) Tangible Assets (OCLD)		**Fair Market Value (FMV) Tangible Assets**			
FMV Tangible Assets	6,999,001	FMV Tangible Assets	9,395,599		
FMV Intangible Assets	1,400,670	FMV Intangible Assets	2,579,848		
FMV Total Assets	8,399,671	FMV Total Assets	11,975,447		
Cost Approach Conclusion			**11,975,447**	**33.33%**	**3,991,816**
Income Approach					
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	15,077,667				
Income Approach Conclusion	**15,077,667**			**33.33%**	**5,025,889**
Market Approach					
Market Comparables to:					
OCLD	15,096,169				
CORLD	10,222,441				
Customers	9,019,202				
Cash Flows					
EBITDA Periods 1-5	13,873,550				
EBITDA Periods 1-13	13,379,739				
Value Line	14,592,917				
Mean	12,697,336				
Median	13,626,645				
Conclusion	13,161,990				
Market Approach Conclusion	**13,161,990**			**33.33%**	**4,387,330**
Appraisal Conclusion	**$ 13,405,035**			**100.00%**	**13,405,035**
Conclusion (cost approach)	**$ 11,975,447**				

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 East Coventry Township's property, plant and equipment this appraisal's conclusion of $13,405,035 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 East Coventry Township'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 2024 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (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) East Coventry Township (Pennsylvania) wastewater collection and treatment operational financial statements cover the period 2016 through 2022 and budgets for 2022 and 2023.

- The Carroll Engineering, Corporation's Engineer's Assessment and inventory of the East Coventry Township's wastewater system's property dated February 2024.

- 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 January 1, 2024, 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 EAST COVENTRY TOWNSHIP'S WASTEWATER COLLECTION AND TREATMENT 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 Statues (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.

East Coventry Township's Wastewater Collection and Treatment System Facilities, its Property and Operations[8]

System Description

1. INTRODUCTION

Carroll Engineering Corporation (CEC) was contracted by Pennsylvania American Water Company (PAWC) and East Coventry Township (ECT) to prepare an Engineer's Assessment (EA) of all wastewater infrastructure for the purchase of ECT's collection and conveyance systems by PAWC.

The assessment covers facilities and real estate to be purchased by PAWC in the sale of ECT's sanitary sewer system. Assets include the original project costs for the construction of each asset, where available. Since most of the system was constructed around the same time, when the original project costs were not available, CEC estimated the costs based on an average of the prices for the remainder of the system.

ECT's sanitary sewer collection and conveyance system consists of 60,222 feet of 8 to 15-inch diameter gravity sewer, 2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains, five (5) pump stations, and 15,816 feet of 4 to 8-inch diameter force main. Table 1 contains a summary of the original project costs of the entire ECT system and the associated easements by National Association of Regulatory Utility Commissioners (NARUC) account number.

Table 1: Summary of ECT Sewer Infrastructure: Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
Various	Conveyance System	$ 2,787,760.50
361/363	Collection System	$ 6,657,988.97
353	Land & Land Rights	$ 2,353,012.00
Total		$ 11,798,761.47

2. SOURCE DOCUMENTS

CEC used the following documents/sources to complete this study:

- ECT Geographic Information System (GIS)

[8] Extracted from Engineer's Assessment page 1 through 4

- Developer's Agreements
- Construction contract payment applications
- Property records obtained from the Chester County Recorder of Deeds
- Chester County GIS (ChescoViews)

3. METHODOLOGY

The assessment was prepared following a review of documentation provided by ECT. CEC was given access to all ECT files and documents.

CEC visited the pump stations to prepare inventories for each station. GIS information, developer's agreements, and construction contract payment applications were relied upon to develop the quantities and project costs for the collection and conveyance system. The construction of the system started in the mid-2000s. There have not been any major upgrades to any facilities since the original system construction. The system is in good condition.

4. COLLECTION AND CONVEYANCE SYSTEMS

The wastewater system serves the northern portion of the Township, extending from Pigeon Creek and Bickel Run to the border with North Coventry Township.

The majority of the sewer system was constructed under two phases in the mid-2000s. The remainder of the system was built as part of development projects and dedicated to the Township. These phases and the various development projects are shown on the map included in Appendix A.

Flows from the Township are conveyed to North Coventry Township via a single connection from ECT's Pump Station No. 1. Flows are ultimately treated at the North Coventry Municipal Authority Wastewater Treatment Plant.

A detailed inventory of the collection and conveyance systems and original project costs is included in Appendix B.

Conveyance System

The conveyance system consists of five pump stations and 15,816 feet of 4 to 8-inch diameter force mains. Pump Station No. 1 was constructed as part of the Phase 1 sewer system. Phase 2 included Pump Station No. 5. Pump Stations No. 2, 3, and 4 were constructed as part of the Wood Crest, Coventry Glen, and Creek View developments, respectively. CEC visited all five pump stations and prepared detailed inventories of the equipment at each station. These inventories are included in Appendix C.

The pump stations are all in good condition. Appendix B includes a list of pump station assets and original project costs. The original cost information available for each pump station came from Developer's Agreements, and construction contract payment applications. The Agreements and payment applications only included a lump sum for each pump station. In order to separate the costs into the required accounts, we estimated the cost to replace the stations today based on information from sales reps, RS Means, and costs from similar projects, then indexed the costs back to the installation year pricing. For Pump Stations 1 through 4, the estimated costs were higher than the original total costs for the stations and were proportioned down to equal the known total costs. For Pump Station 5, the estimated costs were less than the original total cost and were proportioned up to equal it. These are summarized in Table 2 by NARUC account number.

Table 2: Summary of Conveyance System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
354.3	Structures & Improvements	$ 795,310.00
355.3	Power Generation Equipment	$ 145,578.00
360.1	Collection Sewers - Force	$ 609,828.00
364.3	Flow Measuring Device	$ 37,733.00
371.3	Pumping Equipment	$ 315,824.00
380.4	Chemical Feed System	$ 207,929.00
389.3	Other Plant & Misc. Equipment	$ 675,558.50
Total		$ 2,787,760.50

The pump station and force main locations are shown on the overall system map included in Appendix A.

Collection System

ECT's collection system consists of 60,222 feet of 8 to 12-inch diameter PVC and DIP gravity sewer mains and 2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains. At less than twenty years old, the system is relatively new. It is constructed with modern materials (PVC and DIP) and is in generally excellent condition.

The collection system and original project costs are inventoried in Appendix B. The system has been broken into sewer mains, manholes, and service connections. The inventory and original project costs are summarized in Table 3 by NARUC account number.

Table 3: Summary of Collection System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
361.1	Sewer Mains	$ 5,029,881.07
361.2	Manholes	$ 764,192.40
363	Service Connections	$ 863,915.50
Total		$ 6,657,988.97

5. PROPERTY INVENTORY

CEC and ECT staff assembled a list of property and right-of-way (easement) assets related to the sanitary sewer system. ECT purchased the land Pump Station No. 1 is located on in 1997. All other easements were dedicated to the Township, with the sewers as part of the various developments. Wastewater treatment capacity was granted by an agreement between ECT, North Coventry Township Municipal Authority, and North Coventry Township. The full list is included in Appendix B. Table 4 contains a summary of the property assets related to the sewer system by NARUC account number.

Table 4: Summary of Collection System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
353	Land & Land Rights	$ 2,353,012.00
Total		$ 2,353,012.00

APPRAISAL PROCEDURES AND RESULTS

The purpose of this appraisal of the East Coventry Township's wastewater collection and treatment system is the determination of the fair market value of the wastewater's property plant and equipment as of February 24, 2024. The report was prepared based on the 2024 Uniform Standards of Professional Practices (USPAP) and is intended to meet the criteria established with Title 66 (Public Utilities) of the Pennsylvania Consolidated Statues (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:

> *"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) East Coventry Township's wastewater system's operational financial statements cover the period 2016 through 2022 and budgetary 2023.

- The Carroll Engineering, Corporation's Engineer's Assessment and inventory of the East Coventry Township's wastewater system's property date February 2024.

- 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 January 1, 2024, 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.

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]."[9]
>
> 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."[10]
>
> 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

[9] The Appraisal of Real Estate, 13th Edition. Page 385
[10] ibid

time."[11] 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. WADS Consultants utilized the Engineer's Assessment performed by Carroll Engineering Corporation's (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 WADS Consultants developed the plant's depreciated original cost (OCLD) and depreciated replacement cost (RCNLD) on February 24, 2024 (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 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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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

(1)	(2)	(3)				
		(3a)	(3b)	(3c)	(3d)	(3e)
Account Number	Description	Costing Parameters				Reproduction to Replacement Cost Factor
		Index Series	Table	Line Reference	Lookup	AUS Input
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
353.10	Treatment Contract	HW	W-1	17.00	HWW-117	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
355.30	Generating Equipment - Pumping	USBLS	PPI	4.00	USBLS4	1.00
360.10	Collection Sewers - Force - Mains	HW	W-1	34.00	HWW-134	1.00
361.10	Collection Sewers - Gravity - Mains	HW	W-1	34.00	HWW-134	1.00
361.20	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.30	Flow Measuring Devices - Pumping	HW	W-1	40.00	HWW-140	1.00
371.40	Pumping Equipment - Treatment	HW	W-1	9.00	HWW-19	1.00
380.40	Treatment and Disposal Equipment Chemical Feed Systems	HW	W-1	17.00	HWW-117	1.00
389.30	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00

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

The following table presents the development of the cost approach for the Gravity Collection Mains (Accounts 361.10) portion of the East Coventry Township's wastewater service area this example will be used to describe the entire cost approach process:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

(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 (COR)	Replacement Cost New (COR)
								OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	AUS Input	Carroll Engineering Corporation April 2024	Eng Assmnt	AUS Input	Eng Assmnt	Eng Assmnt	AUS Input	Eng Assmnt	AUS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	AUS Input	Col (14) * (15)
NARUC Code	NARUC Code	Asset Description	Service Date	Year Installed	Units	Quantity	COR Cost	Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
		Collection System - Mains													
361.10	361.10	Phase 1 Gravity Sewer	2004	2004	8 - 12	7,322	Not Used	778,865.00	HWW-134	432.3	1195	2.764	2,152,783	1.000	2,152,783
361.10	361.10	Orchard Ridge Gravity Sewer	2004	2004	8	3,611	Not Used	133,917.10	HWW-134	432.3	1195	2.764	370,147	1.000	370,147
361.10	361.10	Heather Glen Gravity Sewer	2004	2004	8	2,750	Not Used	66,600.00	HWW-134	432.3	1195	2.764	184,082	1.000	184,082
361.10	361.10	Creek View Gravity Sewer	2004	2004	8	7,695	Not Used	172,450.00	HWW-134	432.3	1195	2.764	476,652	1.000	476,652
361.10	361.10	Wood Crest Gravity Sewer	2004	2004	8	2,093	Not Used	46,046.00	HWW-134	432.3	1195	2.764	127,271	1.000	127,271
361.10	361.10	Coventry Greene Gravity Sewer	2004	2004	8	1,994	Not Used	103,688.00	HWW-134	432.3	1195	2.764	286,594	1.000	286,594
361.10	361.10	Phase 2 Gravity Sewer	2008	2008	8 - 10	20,906	Not Used	2,974,197.97	HWW-134	587.5	1195	2.034	6,049,519	1.000	6,049,519
361.10	361.10	Phase 2 Pressure Sewer	2008	2008	1.5 - 3	2,465	Not Used	75,467.00	HWW-134	587.5	1195	2.034	153,500	1.000	153,500
361.10	361.10	Coventry Glen Gravity Sewer	2011	2011	8	9,455	Not Used	491,660.00	HWW-134	647.5	1195	1.846	907,604	1.000	907,604
361.10	361.10	Elementary School Gravity Sewer	2016	2016	8	2,588	Not Used	106,670.00	HWW-134	755.3	1195	1.582	168,752	1.000	168,752
361.10	361.10	Whispering Woods Gravity Sewer	2017	2017	8	1,808	Not Used	80,320.00	HWW-134	777	1195	1.538	123,532	1.000	123,532
		Subtotal Collection System - Mains				**62,687**		**5,029,881.07**				**2.187**	**11,000,436**	**1.000**	**11,000,436**

Using the trended original cost method, East Coventry Township's investment in this example of $5,029,881.07 was determined to have a replacement cost new of $11,000,436.

When the trended cost method is applied to each of East Coventry Township's investment in plant, property and equipment of $11,798,761 was determined to have a replacement cost new of $28,101,219 detailed as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	WAD Input NARUC Code	Carroll Engineering Corporation April 2024 Asset Description	Eng Assmnt Original Cost	WAD Input Cost Index Table	Translator	RCN	WAD Input COR / RCN Factor	Col (14) * (15) COR
353.00	353.00	Land & Land Rights	12	USBLS3	1,153.75	13,845	1.00	13,845
353.00	353.00	Treatment Contract	2,353,000	HWW-117	3.00	7,063,706	1.00	7,063,706
353.00	353.00	Stuctures & Improvements - Pumping	795,310	HWW-18	2.19	1,742,711	1.00	1,742,711
353.00	353.00	Generating Equipment - Pumping	145,578	USBLS4	1.83	266,445	1.00	266,445
353.00	353.00	Collection Sewers - Force - Mains	609,828	HWW-134	2.66	1,623,322	1.00	1,623,322
353.00	353.00	Collection Sewers - Gravity - Mains	5,029,881	HWW-134	2.19	11,000,436	1.00	11,000,436
353.00	353.00	Collection Sewers - Gravity - Manholes	764,192	HWW-145	1.72	1,311,617	1.00	1,311,617
353.00	353.00	Service Laterals	863,916	HWW-139	1.65	1,422,371	1.00	1,422,371
353.00	353.00	Flow Measuring Devices - Pumping	37,733	HWW-140	4.47	168,661	1.00	168,661
353.00	353.00	Pumping Equipment	315,824	HWW-19	3.31	1,046,749	1.00	1,046,749
353.00	353.00	Treatment and Disposal Equipment Chemical Feed Systems	207,929	HWW-117	2.77	576,522	1.00	576,522
353.00	353.00	Other Plant & Misc Equip	675,559	HWW-117	2.76	1,864,834	1.00	1,864,834
		Total East Coventry Township Wastewater Utility	11,798,761			28,101,219		28,101,219
Grand Total	Grand Total	Grand Total	11,798,761		2.38	28,101,219	1.00	28,101,219
		Difference	-			-		-

Replacement Cost New less Depreciation - The replacement cost described above reflects the cost of new property; however, the East Coventry Township'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."[12]
>
> 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 or less costly replacement property that new technology has developed."[13]

[12] The Dictionary of Real Estate Appraisal, 4th Edition
[13] Valuing Machinery and Equipment: The Fundamentals of Appraising Machinery and Technical Assets, Second Edition. Page 67.

Economic, or external, obsolescence is defined as "A loss in value caused by factors outside a property"[14] 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, WADS 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. WADS Consultants has reviewed the PAWC studies which are summarized in the following table:

[14] The Appraisal of Real Estate, 13th Edition, page 442.

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	SO	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	52.5	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

WADS 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 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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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)		(7)
		(4a)	(4b)		(6a)	(6b)	
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	RCNLD Economic Obsolescence	Tax Depreciation		OCLD Economic Obsolescence
			years	% of CORLD	Table	Life	% of CORLD
353.00	Land & Land Rights	ZNonDep	0.00	38.65%	Non-Depr	0.00	1.00%
353.10	Treatment Contract	R2.0	45.00	38.65%	MACRS	25.00	1.00%
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	38.65%	MACRS	25.00	1.00%
355.30	Generating Equipment - Pumping	R3.0	35.00	38.65%	MACRS	25.00	1.00%
360.10	Collection Sewers - Force - Mains	R3.0	75.00	38.65%	MACRS	25.00	1.00%
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	38.65%	MACRS	25.00	1.00%
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	38.65%	MACRS	25.00	1.00%
363.00	Service Laterals	R3.0	50.00	38.65%	MACRS	25.00	1.00%
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	38.65%	MACRS	25.00	1.00%
371.40	Pumping Equipment - Treatment	R3.0	35.00	38.65%	MACRS	25.00	1.00%
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	38.65%	MACRS	25.00	1.00%
389.30	Other Plant & Misc Equip	R3.0	45.00	38.65%	MACRS	25.00	1.00%

As the above table demonstrates, the depreciation lives selected for the WADS 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:

$$\text{Depreciation (\%)} = \frac{\text{Age (years) x100\%}}{\text{Service Life (years)}}$$

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

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 Gravity Collection Mains portion of the East Coventry Township's wastewater service area of $11,000,436, the replacement cost new less depreciation was determined to be $8,795,972 detailed as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
Account	Description	Placement Year	Age at February 24, 2024 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup	Calculation	Calculation	Calculation	Calculation
AUS Input	Eng Assmnt	Eng Assmnt	2024-[(20)+0.5]	Col (16)	AUS Input	AUS Input	Col (21) / (24)	Col (23) & (25)	Lookup Iowa Curves Life Tables @ col (26)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Year1	Age	RCN	Iowa	NLife	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD
	Collection System - Mains												
361.1	Phase 1 Gravity Sewer	2004	19.50	2,152,783	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	1,639,840
361.1	Orchard Ridge Gravity Sewer	2004	19.50	370,147	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	281,952
361.1	Heather Glen Gravity Sewer	2004	19.50	184,082	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	140,221
361.1	Creek View Gravity Sewer	2004	19.50	476,652	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	363,080
361.1	Wood Crest Gravity Sewer	2004	19.50	127,271	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	96,946
361.1	Coventry Greene Gravity Sewer	2004	19.50	286,594	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	218,307
361.1	Phase 2 Gravity Sewer	2008	15.50	6,049,519	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	4,897,867
361.1	Phase 2 Pressure Sewer	2008	15.50	153,500	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	124,278
361.1	Coventry Glen Gravity Sewer	2011	12.50	907,604	R2.5	80.0	16	R2.5016	0.85124	68.10	80.60	84.491315%	766,847
361.1	Elementary School Gravity Sewer	2016	7.50	168,752	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	153,078
361.1	Whispering Woods Gravity Sewer	2017	6.50	123,532	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	113,556
	Subtotal Collection System - Mains		**16.34**	**11,000,436**		**80.0**				**81.47**	**81.47**	**79.960214%**	**8,795,972**

When the above depreciation lives are used to quantify the property's depreciation is applied to each of the East Coventry Township's investment in plant, property and equipment the replacement cost new (RCN) of $28,101,231 the resultant RCN less depreciation (RCNLD) was found to be $19,518,322 detailed as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at February 24, 2024 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	Carroll Engineering Corporation April 2024		Col (16)	WAD Input	WAD Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.00	Land & Land Rights	13.00	13,845	ZNonDep	-	-	13.00	-	13,845
353.10	Treatment Contract	19.50	7,063,706	R2.0	45.00	28.68	48.18	45.00	4,204,796
354.30	Stuctures & Improvements - Pumping	18.69	1,742,711	R4.0	45.00	26.74	45.44	45.00	1,025,824
355.30	Generating Equipment - Pumping	18.18	266,445	R3.0	35.00	18.27	36.45	35.00	133,612
360.10	Collection Sewers - Force - Mains	19.07	1,623,322	R3.0	75.00	56.61	75.69	75.00	1,214,310
361.10	Collection Sewers - Gravity - Mains	16.34	11,000,436	R2.5	80.00	65.13	81.47	80.00	8,795,972
361.20	Collection Sewers - Gravity - Manholes	15.86	1,311,617	S2.0	75.00	59.13	74.99	75.00	1,034,355
363.00	Service Laterals	14.15	1,422,371	R3.0	50.00	36.46	50.62	50.00	1,025,125
364.30	Flow Measuring Devices - Pumping	18.70	168,661	S2.0	30.00	13.43	32.13	30.00	70,617
371.30	Pumping Equipment	18.35	1,046,749	R3.0	35.00	18.12	36.47	35.00	520,401
380.40	Treatment and Disposal Equipment Chemical Feed Systems	18.43	576,522	R2.0	45.00	29.53	47.96	45.00	355,096
389.30	Other Plant & Misc Equip	18.37	1,864,834	R3.0	45.00	27.88	46.25	45.00	1,124,369
	Total East Coventry Township Wastewater Utility		28,101,219						19,518,322
Grand Total	Grand Total	17.59	28,101,219 -		61.51	45.62	63.21	0.69	19,518,322 -

The preliminary cost approach to value of the East Coventry Township's wastewater utility property was found to be $19,518,322.

Original Cost less Depreciation

With the Pennsylvania PUC's Forth Implementation Order the importance of the original cost less depreciation (OCLD) requires that the Utility Valuation Experts' (UVE) appraisal address the OCLD. The Engineers Assessment provided the original cost by account and installation year for the development of the OCLD and the previously discussed depreciation lives were used to quantify the depreciation. The following table details the development of the gravity mains account as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)
Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	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	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	AUS Input	AUS Input	2024-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Descrip	Year	Original Cost	Iowa	Life	age	AgeP	IowaLookup	IowaCondition	Rem Life	Total Lif	Theo%	Theo Reserve	Net Book
Collection System - Mains													
Phase 1 Gravity Sewer	2004	778,865	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	185,580	593,285
Orchard Ridge Gravity Sewer	2004	133,917	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	31,908	102,009
Heather Glen Gravity Sewer	2004	66,600	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	15,869	50,731
Creek View Gravity Sewer	2004	172,450	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	41,090	131,360
Wood Crest Gravity Sewer	2004	46,046	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	10,971	35,075
Coventry Greene Gravity Sewer	2004	103,688	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	24,706	78,982
Phase 2 Gravity Sewer	2008	2,974,198	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	566,198	2,408,000
Phase 2 Pressure Sewer	2008	75,467	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	14,367	61,100
Coventry Glen Gravity Sewer	2011	491,660	R2.5	80	12.50	16	R2.5016	0.85124	68.1	80.6	0.15509	76,252	415,408
Elementary School Gravity Sewer	2016	106,670	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09288	9,908	96,762
Whispering Woods Gravity Sewer	2017	80,320	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	6,487	73,833
Subtotal Collection System - Mains		**5,029,881**		**80**	**15.93**				**65.49**	**81.42**	**0.19550**	**983,335**	**4,046,547**

The following table presents the development of the preliminary OCLD of $8,399,671 as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total East Coventry Township Wastewater Utility	11,798,761							3,399,090	8,399,671
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

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 East Coventry Township'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 East Coventry Township's wastewater utility's operations were evaluated based on an analysis of historical operating performances over the period 2016 through 2022 and budgetary 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 East Coventry Township'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 FMV of $13,324,514. 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:

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	**100.0%**						**6.84%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.84%**

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 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	**100.0%**						**7.70%**
Growth (g)							**3.03%**
Rate without Growth: [(1+r)/(1+g)]-1							**4.53%**

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 5, 2024, 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:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	1,076,411	375,036	525,137	701,375	176,238	50,915	728,086	6,458	(84,084)	0.964	(81,057)	(81,057)
2	1.5	1,210,962	400,603	556,480	810,359	253,879	73,346	775,338	7,266	(45,591)	0.895	(40,804)	(121,861)
3	2.5	1,665,073	429,545	591,927	1,235,528	643,601	185,936	825,858	24,522	199,212	0.831	165,545	43,684
4	3.5	1,873,207	462,182	631,920	1,411,025	779,105	225,083	879,995	11,239	294,708	0.771	227,220	270,904
5	4.5	2,107,358	498,869	676,943	1,608,489	931,546	269,124	938,016	12,644	388,705	0.716	278,313	549,217
6	5.5	2,465,609	504,400	727,521	1,961,209	1,233,688	356,412	1,000,200	19,346	585,251	0.665	389,192	938,409
7	6.5	2,514,921	511,041	676,123	2,003,880	1,327,757	383,589	680,387	2,663	937,241	0.617	578,278	1,516,687
8	7.5	2,565,219	518,729	710,619	2,046,490	1,335,871	385,933	709,066	2,716	948,775	0.573	543,648	2,060,335
9	8.5	2,770,437	527,413	747,829	2,243,024	1,495,195	431,962	739,079	11,081	1,060,902	0.532	564,400	2,624,735
10	9.5	2,825,846	537,045	787,935	2,288,801	1,500,866	433,600	770,490	2,993	1,081,718	0.494	534,369	3,159,104
11	10.5	2,882,363	547,584	831,130	2,334,779	1,503,649	434,404	803,365	3,052	1,093,958	0.459	502,127	3,661,231
12	11.5	3,112,952	558,997	877,623	2,553,955	1,676,332	484,292	837,774	12,452	1,219,437	0.426	519,480	4,180,711
13	12.5	3,175,211	571,254	927,630	2,603,957	1,676,327	484,291	873,790	3,361	1,242,515	0.396	492,036	4,672,747
14	13.5	3,238,715	584,330	981,384	2,654,385	1,673,001	483,330	911,487	3,429	1,256,139	0.367	461,003	5,133,750
15	14.5	3,497,812	598,205	1,039,131	2,899,607	1,860,476	537,492	950,947	13,991	1,397,177	0.341	476,437	5,610,187
16	15.5	3,567,768	615,391	599,320	2,952,377	2,353,057	679,798	276,319	3,778	1,992,482	0.317	631,617	6,241,804
17	16.5	3,639,123	633,094	608,643	3,006,029	2,397,386	692,605	278,393	3,853	2,031,178	0.294	597,166	6,838,970
18	17.5	3,930,253	651,327	618,116	3,278,926	2,660,810	768,708	280,481	15,722	2,214,015	0.273	604,426	7,443,396
19	18.5	4,008,858	670,108	627,740	3,338,750	2,711,010	783,211	282,585	4,244	2,268,710	0.254	576,252	8,019,648
20 and beyond	19.5	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	3.052	7,058,019	15,077,667
								13,826,360					
Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.235				Net Plant		18,166,302			
PW to Perpetuity = 1/Capitalization Rate				12.987				ADIT		(1,948,763)			
$PW_{(20and\ Beyond)}$ = PW to Perpetuity * PW $Factor_{(19.5)}$				3.052				Rate Base		16,217,539	0.235	3,811,122	11,830,770
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		37,068,612	0.235	8,711,124	16,730,772
								PP	11,975,448				
								OCLD	8,399,671				
								PP/OCLD	1.426				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										26,432,342.47	0.235	6,211,600	14,231,248
								Average					14,467,614

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 $15,077,667. 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

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:

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidder:	Montgomery	Wastewater Collection	50,250,000
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder:	Dauphin	Water Treatment and Distribution	22,500,000
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidder:	Montgomery	Wastewater Collection	21,000,000
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000
	End of Section 1329 Data								
					Count 19			Wastewater Collection and Treatment	15
								Wastewater Collection	7
								Water Treatment and Distribution	3
								Water Distribution	1
								All section 1329 Mean	26
								Standard Deviation	
								Median	
				Notes:					
				1				Final Purchase Price reflects the agreed upon purchase price achie	

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), depreciated replacement cost (RCNLD), Customers, and EBITDA (Market tab).

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

The following table presents the market derived ratios of purchase price to depreciated original cost and purchase price to replacement cost less depreciation:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Data

Market Sales Analysis - PP/OCLD	Simple	
All Section 1329 Acquistions		
Mean	1.9442	
Standard Deviation	0.9153	
Median	1.5139	
Water Treatment & Distribution		
Mean	1.4354	
Water Distribution		
Mean	0.00	
Wastewater Collection & Treatment		
Mean	1.7972	
Wastewater Collection		
Mean	1.8733	
Wastewater Treatment Only		
Mean	-0.07607	
WADS Conclusion	1.7972	WADS Input Cost Approach - OCLD
East ConventryTownship OCLD	8,399,671	
Market Value Indication	**15,096,169**	

Market Sales Analysis - PP/CORLD	Simple	
All Section 1329 Acquistions		
Mean	0.8168	
Standard Deviation	0.2242	
Median	0.881	
Water Treatment & Distribution		
Mean	0.853616667	
Water Distribution		
Mean	0.7686	
Wastewater Collection & Treatment		
Mean	0.8536	
Wastewater Collection		
Mean	0.8077	
Wastewater Treatment Only		
Mean	0.0459	
WADS Conclusion	0.8536	WADS Input Cost Approach - CORLD
East ConventryTownship CORLD	11,975,447	
Market Value Indication	**10,222,441**	

The following table presents the derivation of the market ratios of purchase price to OCLD and CORLD for the following grouping of market transactions:

All Section 1329 Acquisitions
Water Treatment and Distribution
Water Distribution
Wastewater Collection and Treatment
Wastewater Collection
Wastewater Treatment Only (derived)

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Engineers Assessment	Original Cost	OCLD Depreciation	Original Cost less Depreciation (OCLD)	Purchase Price to OCLD	COR Translator	Cost New	Replacement Cost less Depreciation (CORLD)	Cost New less Depreciation (RCNLD)	Purchase Price to RCNLD
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	KLH Engineers, Inc.	108,231,570	74.0%	80,085,602	1.9854	2.986	323,139,630	48.4%	156,524,909	1.0158
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	AUS Consultants	27,146,852	68.4%	18,567,728	1.5888	2.219	60,232,051	50.8%	30,615,410	0.9636
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	PennoniAssociates, Inc.	63,480,402	72.7%	46,153,867	1.3948	1.966	124,772,705	58.6%	73,068,377	0.8810
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	AUS Consultants	8,294,930	64.9%	5,383,591	0.9287	1.817	15,073,739	61.3%	9,236,581	0.5413
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	Larson Design Group	5,294,272	66.2%	3,507,138	1.3500	2.777	14,699,682	60.5%	8,899,336	0.5320
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	Larson Design Group	4,931,649	65.6%	3,234,859	1.4731	2.859	14,097,938	56.7%	7,991,234	0.5963
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	50,250,000	Boucher & James, Inc.	19,818,218	79.6%	15,784,463	3.1835	7.342	145,511,461	34.3%	49,940,486	1.0062
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidd	Dauphin	Water Treatment and Distribution	22,500,000	Herbert, Rowland & Grubic, Inc (HRG)	19,739,906	73.1%	14,433,435	1.5069	2.626	51,836,769	46.1%	23,921,473	0.9092
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	Herbert, Rowland & Grubic, Inc (HRG)	7,480,601	81.9%	6,128,876	1.40	1.424	10,652,193	80.0%	8,517,587	1.0097
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	Gannett Fleming	68,404,345	58.6%	40,057,634	2.3341	3.065	209,693,218	47.5%	99,589,819	0.9389
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	21,000,000	Carroll Engineering corporation	16,246,828	51.7%	8,407,007	2.4979	4.356	70,770,233	38.8%	27,461,356	0.7647
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	Gannett Fleming	21,023,527	57.4%	12,070,455	1.4548	2.642	55,539,558	52.2%	29,015,055	0.6052
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	PennoniAssociates, Inc.	7,666,492	67.5%	5,173,559	2.5128	5.325	40,821,536	32.8%	13,376,109	0.9719
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	PennoniAssociates, Inc.	6,843,616	78.5%	5,370,438	1.3639	2.239	15,320,978	76.1%	11,664,026	0.6280
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	PennoniAssociates, Inc.	13,389,110	68.8%	9,214,738	1.5139	2.370	31,729,237	60.7%	19,252,333	0.7246
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	PennoniAssociates, Inc.	263,682,616	72.7%	191,774,486	1.4418	3.005	792,388,731	50.4%	399,664,111	0.6918
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	LTL Consultnats & AUS Consultants	15,295,347	77.0%	11,769,925	1.1682	1.686	25,786,184	71.6%	18,460,028	0.7449
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	Ebert Engineering, Inc.	32,003,924	64.5%	20,644,920	2.5672	3.030	96,986,192	53.0%	51,414,555	1.0308
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	PennoniAssociates, Inc.	43,447,309	76.9%	33,403,972	1.6444	1.979	85,964,664	67.6%	58,078,339	0.9458
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	PennoniAssociates, Inc.	19,641,520	68.9%	13,524,101	1.2940	2.540	49,898,907	60.3%	30,113,231	0.5811
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	Buchart Horn	155,875,776	62.3%	97,106,105	2.4200	3.042	474,152,569	46.1%	218,366,227	1.0762
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	Gannett Fleming	12,898,487	60.9%	7,850,687	5.2543	6.380	82,286,857	40.1%	32,994,154	1.2502
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000		19,380,636	55.6%	10,784,743	1.1127	6.972	135,118,824	33.9%	45,836,624	0.2618
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	Gateway Engineers	9,942,191	73.0%	7,260,988	2.6443	5.849	58,151,497	41.8%	24,334,695	0.7890
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authorit	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	Herbert, Rowland & Grubic, Inc (HRG)	144,573,880	62.4%	90,190,859	2.5668	3.637	525,870,564	45.8%	240,895,239	0.9610
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000										
	End of Section 1329 Data																		
					Count 19			Wastewater Collection and Treatment	15					1.7972					0.8536
								Wastewater Collection	7					1.8733					0.8077
								Water Treatment and Distribution	3					1.4354					0.7686
								Water Distribution	1										
								All section 1329											
								Mean	26					1.9442					0.8168
								Standard Deviation						0.9153					0.2242
								Median						1.5139					0.8810
				Notes:												EBITDA P1			
				1				Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquisition application								EBITDA P1-5			

The following table presents the market derived ratios to customers and value line ratio to OCLD:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Customer

	Simple	
All Section 1329 Acquistions		
Mean	8,557	
Standard Deviation	3,997	
Median	8,315	
Water Treatment and Distribution		
Mean	6,157	
Water Distribution		
Mean	3,992	
Wastewater Collection & Treatment		
Mean	10,410	
Wastewater Collection		
Mean	6,268	
Watewater Treatment Only		
Mean	4,142	

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.09	
Use (equity and debt)	2.09	WADS Input

Conclusion

East ConventryTownship Customers	866	WADS Input	East ConventryTownship OCLD	6,999,001	Cost Approach - OCLD
Wastewater Collection & Treatment	10,410	WADS Input			
Collection and Treatement Customers Market Value Indication	**9,015,060**		**Market Value Indication**	**14,592,917**	
Treatement Only Market Value Indication					
Treatment Only PP/customer	4,142	WADS Input			
Treatment Only Customers	-	WADS Input			
Market Value Indication Treatment Only	-				
Total Market Value Indication	**9,019,202**				

The following table presents the derivation of the market ratios of purchase price per customer for the following grouping of market transactions:

All Section 1329 Acquisitions
Water Treatment and Distribution
Water Distribution
Wastewater Collection and Treatment
Wastewater Collection
Wastewater Treatment Only (derived)

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Number of Total Customers	Relationship to the passage of Section 1329	Average Purchase Price per Customer	AUS Market Value per Customer
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	21,953	Post	7,242.75	7,243
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	2,106	Post	14,007.60	14,008
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	5,434	Post	11,846.41	11,846
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	1,248	Post	4,006.41	4,006
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	1,186	Post	3,992.24	3,992
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	1,451	Post	3,284.08	3,284
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	50,250,000	10,500	Post	4,785.71	4,786
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidd	Dauphin	Water Treatment and Distribution	22,500,000	2,325	Post	9,354.84	9,355
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	998	Post	8,617.23	8,617
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	9,000	Post	10,388.89	10,389
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	21,000,000	4,950	Post	4,242.42	4,242
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	2,006	Post	8,753.74	8,754
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	1,596	Post	8,145.36	8,145
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	1,459	Post	5,020.56	5,021
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	1,644	Post	8,485.40	8,485
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	16,473	Pending	16,785.04	16,785
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	1,428	Post	9,628.85	9,629
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	11,151	Post	4,752.94	4,753
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	3,918	Post	14,019.91	14,020
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	2,294	Post	7,628.60	7,629
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	15,851	Post	14,825.56	14,826
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	3,958	Pending	10,421.93	10,422
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	2,930	Post	4,095.56	4,096
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	3,976	Pending	4,828.97	4,829
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authorit	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	15,000	Post	15,433.33	15,433
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000	2,281	Post	7,891.28	7,891
	End of Section 1329 Data												
					Count 19			Wastewater Collection and Treatment	15			10,410	10,410
								Wastewater Collection	7			6,268	6,267
								Water Treatment and Distribution	3			6,157	6,157
								Water Distribution	1			3,992	3,992
								All section 1329					
								Mean	26			8,557	8,557
								Standard Deviation				3,997	3,997
								Median				8,315	8,315
				Notes:									
				1			Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquistion application						

The following table present the market ratios derived from the Value Line Investment Survey information published on its January 5, 2024, issue:

Pennsylvania American Water Company									
East Coventry Township									
Sanitary Sewer System									
Investor-Owned Utility									
February 24, 2024									
Comparable Sales Approach									
Financial Basis[1]									
	Industry Averages	American & Aqua Averages	American States Water	American Water	Essential Utilities	California Water	Middlesex Water	SJW Corp	
Price per Share			93.72	153.02	47.57	61.78	86.05	81.02	
Book value per share			19.8	42.8	20.8	23.45	22.55	36.55	
Market to Book Equity Ratio			4.73	3.58	2.29	2.63	3.82	2.22	
Minimum	2.22	2.29							
Mean	3.21	2.935		3.58	2.29				
Standard Deviation	0.91	0.645							
Weighted Market to Debt Ratio	3.18		19,375.29	141,991.01	43,542.01	11,878.99	6,977.75	8,689.35	232,454.40
Median	3.105	2.935							
Maximum	4.73	3.58							
Debt (Total) $s millions			685.7	11,839.0	6,536.8	1,129.7	308.8	1,458.0	
Outstanding Shares (millions)			36.39	181.83	262.29	54.82	17.64	30.32	
Debt per share			18.84	65.11	24.92	20.61	17.51	48.1	
Equity (Total) $s millions			3,410.55	27,823.29	12,477.18	3,387.03	1,517.84	2,456.12	
Total Capital (Debt + Equity)			4,096.25	39,662.29	19,013.98	4,516.73	1,826.64	3,914.12	73,030.01
			0.06	0.54	0.26	0.06	0.03	0.05	1.00
Market Value per Share (Equity+Debt)			112.56	218.13	72.49	82.39	103.56	129.12	
Book Value per Share (Equity+Debt)			38.64	107.91	45.72	44.06	40.06	84.65	
Market to Book (Total Capital) Ratio			2.91	2.02	1.59	1.87	2.59	1.53	
Minimum	1.53	1.59							
Mean	2.09	1.805		2.02	1.59				
Standard Deviation	0.51	0.215							
Weighted Market to Book (Debt&Equity) Ratio	1.94		11,920.10	80,117.83	30,232.22	8,446.28	4,730.99	5,988.61	141,436.03
Variance to Wtd Mean	0.1189		0.97	0.08	(0.35)	(0.07)	0.65	(0.41)	
Median	1.945	1.805							
Maximum	2.91	2.02							
1. Value Line Investment Survey January 10, 2020									
2. Value Line dropped Connecticut Water in its January 10, 2020 publication									

The following table present the market derived ratios of purchase price to the projected earnings before interest income taxes depreciation and amortization (EBITDA) for forecast periods 1-5 years and 1- 3 years:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-5)	Simple	
All Section 1329 Acquistions		
Mean	16.95	
Standard Deviation	5.91	
Median	16.94	
Conclusion	16.95	WADS Input
Water Treatment and Distribution		
Mean	14.94	
Water Distribution		
Mean	20.24	
Wastewater Collection & Treatment		
Mean	16.69	
Wastewater Collection		
Mean	17.88	
Watewater Treatment Only		
Mean	(1.19)	
Conclusion		
		Income
East Coventry Cash Flows	831,408	Approach
Wastewater Collection & Treatment	16.69	
Market Value Indication	**13,873,550**	

Market Sales Analysis - PP/Cash Flows (EBITDA Period 1-13)	Simple	
All Section 1329 Acquistions		
Mean	12.04	
Standard Deviation	3.59	
Median	11.98	
Conclusion	12.04	WADS Input
Water Treatment and Distribution		
Mean	10.50	
Water Distribution		
Mean	13.59	
Wastewater Collection & Treatment		
Mean	11.93	
Wastewater Collection		
Mean	12.70	
Watewater Treatment Only		
Mean	(0.77)	
Conclusion		
		Income
East Coventry Cash Flows	1,121,619	Approach
Wastewater Collection & Treatment	11.93	
	13,379,739	

The following table presents the derivation of the market ratios of purchase price per projected earnings before interest income taxes depreciation and amortization (EBITDA) for forecast periods 1-5 years and 1- 3 years:

All Section 1329 Acquisitions
Water Treatment and Distribution
Water Distribution
Wastewater Collection and Treatment
Wastewater Collection
Wastewater Treatment Only (derived)

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Period 1	Purchase Price to EBITDA Period 1	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-5	Purchase Price to EBITDA Average Periods 1-5	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-13	Purchase Price to EBITDA Average Periods 1-13
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	5,247,843.00	29.7265	7,409,096.00	21.0552	11,958,224.00	13.0454
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	1,409,768.00	20.9254	1,717,347.00	17.1777	2,625,115.00	11.2376
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	2,154,798.00	34.8525	3,542,124.20	21.2020	5,212,045.23	14.4089
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	100,053.00	49.9735	283,367.00	17.6450	632,892.00	7.9002
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	58,541.50	80.8794	233,922.00	20.2409	348,408.96	13.5898
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	58,541.50	81.3987	233,922.00	20.3709	348,408.96	13.6770
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	50,250,000	5,270,576.00	9.5341	4,754,020.00	10.5700	4,326,210.00	11.6152
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidd	Dauphin	Water Treatment and Distribution	22,500,000	1,568,999.00	14.3404	2,278,514.00	9.8749	3,893,757.00	5.7785
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	580,238.00	15.9417	714,645.00	12.9435	895,128.00	10.3337
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	7,121,227.00	13.4808	7,279,978.00	13.1869	8,011,315.00	11.9831
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidd	Montgomery	Wastewater Collection	21,000,000	925,477.00	22.6910	1,265,269.00	16.5973	2,011,465.00	10.4402
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	680,463.00	25.8060	1,039,593.00	16.8912	1,446,948.00	12.1359
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	404,071.00	32.1726	600,765.00	21.6391	1,209,765.00	10.7459
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	217,969.00	33.6057	398,458.00	18.3834	817,993.00	8.9548
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	193,013.00	72.2749	392,972.00	35.4987	844,046.00	16.5275
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	25,621,637.00	10.7917	25,883,282.00	10.6826	28,960,161.85	9.5476
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	768,794.00	17.8852	845,182.00	16.2687	932,042.00	14.7526
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	2,472,701.00	21.4341	2,839,988.00	18.6621	3,432,340.00	15.4414
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	14,465,272.00	3.7974	15,872,367.00	3.4607	18,521,227.00	2.9658
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	723,189.00	24.1984	892,978.00	19.5973	1,168,600.00	14.9752
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	12,149,592.00	19.3422	13,874,600.00	16.9374	18,001,021.00	13.0548
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	706,202.00	58.4110	1,848,649.20	22.3136	2,092,981.46	19.7087
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	502,680.00	23.8720	724,217.00	16.5696	715,085.06	16.7812
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	1,303,713.00	14.7272	1,488,494.60	12.8989	1,661,649.46	11.5548
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authorit	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	13,603,503.00	17.0177	17,584,863.20	13.1647	23,491,122.15	9.8548
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000						
	End of Section 1329 Data														
					Count 19			Wastewater Collection and Treatment	15				16.6868		11.9289
								Wastewater Collection	7				17.8783		12.7001
								Water Treatment and Distribution	3				14.9426		10.5048
								Water Distribution	1				20.2409		13.5898
								All section 1329							
								Mean	26				16.9533		12.0404
								Standard Deviation					5.9108		3.5888
								Median					16.9374		11.9831
				Notes:											
				1			Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquistion application								

The following table summarizes each of the market derived ratio analyses and the conclusion of the market approach:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Summary of Market Analyses

Indicators	
OCLD	15,096,169
CORLD	10,222,441
Customers	9,019,202
Cash Flows	
EBITDA Periods 1-5	13,873,550
EBITDA Periods 1-13	13,379,739
Value Line	14,592,917
Mean	12,697,336
Median	13,626,645
Conclusion	**13,161,990**

The market approach conclusion of this appraisal was determined to be $13,161,990.

Cost Approach Revisited – Before concluding this appraisal's fair market value, the preliminary cost approach conclusion of $19,518,322 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."[15]

The above-described income approach value conclusion of $15,077,667 and the approach conclusion of $13,161,990 for the East Coventry Township's future wastewater system compared to the preliminary cost approach conclusion of $19,518,322 indicates 38.6451% external obsolescence exists in the cost approach conclusion of $19,518,322 detailed as follows:

East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
RCNLD Tangible Assets		
Original Cost (OC)	(9)	9,445,761
Replacement Cost New (RCN)	(16)	21,037,513
Replacement Cost New less Depreciation (RCNLD)	(31)	15,313,526
Intangible Assets - Treatment Contract		
Original Cost (OC)	(9)	2,353,000
Replacement Cost New (RCN)	(16)	7,063,706
Replacement Cost New less Depreciation (RCNLD)	(31)	4,204,796
Preliminary Replacement Cost less Depreciation (RCNLD) Tangible and Intangible Assets		**19,518,322**
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary Replacement Cost		**19,518,322**
Economic Obsolescence (EO $s)		7,542,874
EO % of Preliminaary RCNLD	(40)	38.6451%
Fair Market Value (FMV) Tangible Assets		
FMV Tangible Assets		9,395,599
FMV Intangible Assets		2,579,848
FMV Total Assets	(41)	11,975,447

The following table present the application of the above described 38.6451% economic obsolescence to the gravity collection mains example:

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

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

(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
	Collection System - Mains				
361.1	Phase 1 Gravity Sewer	2004	1,639,840	38.65%	1,006,122
361.1	Orchard Ridge Gravity Sewer	2004	281,952	38.65%	172,991
361.1	Heather Glen Gravity Sewer	2004	140,221	38.65%	86,032
361.1	Creek View Gravity Sewer	2004	363,080	38.65%	222,768
361.1	Wood Crest Gravity Sewer	2004	96,946	38.65%	59,481
361.1	Coventry Greene Gravity Sewer	2004	218,307	38.65%	133,942
361.1	Phase 2 Gravity Sewer	2008	4,897,867	38.65%	3,005,081
361.1	Phase 2 Pressure Sewer	2008	124,278	38.65%	76,251
361.1	Coventry Glen Gravity Sewer	2011	766,847	38.65%	470,498
361.1	Elementary School Gravity Sewer	2016	153,078	38.65%	93,921
361.1	Whispering Woods Gravity Sewer	2017	113,556	38.65%	69,672
	Subtotal Collection System - Mains		**8,795,972**	**-38.65%**	**5,396,760**

Therefore, the final cost approach conclusion of 11,975,447 can be considered the final cost approach conclusion as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)	WAD Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Prelim CORLD	EO%	FMV
353.00	Land & Land Rights	13,845	38.68%	8,490
353.10	Treatment Contract	4,204,796	38.65%	2,579,848
354.30	Stuctures & Improvements - Pumping	1,025,824	38.65%	629,394
355.30	Generating Equipment - Pumping	133,612	38.65%	81,977
360.10	Collection Sewers - Force - Mains	1,214,310	38.65%	745,039
361.10	Collection Sewers - Gravity - Mains	8,795,972	38.65%	5,396,758
361.20	Collection Sewers - Gravity - Manholes	1,034,355	38.65%	634,628
363.00	Service Laterals	1,025,125	38.65%	628,964
364.30	Flow Measuring Devices - Pumping	70,617	38.65%	43,326
371.30	Pumping Equipment	520,401	38.65%	319,291
380.40	Treatment and Disposal Equipment Chemical Feed Systems	355,096	38.64%	217,870
389.30	Other Plant & Misc Equip	1,124,369	38.65%	689,856
	Total East Coventry Township Wastewater Utility	19,518,322		11,975,441
Grand Total	Grand Total	19,518,322	38.65%	11,975,441
		-		-

Development of the Final Original Cost less Depreciation

The above-described income approach value conclusion of $15,077,667 and the approach conclusion of $13,161,990 for the East Coventry Township's future wastewater system compared to the preliminary original cost approach conclusion of $8,399,671 indicates no external obsolescence exists in the cost approach conclusion of $8,399,671 detailed as follows:

East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Depreciated Original Cost (OCLD)		
OCLD Tangible Assets		
Original Cost (OC) Tangible Assets	(46)	9,445,761
Original Cost less Depreciation (OCLD)	(57)	6,999,001
Intangible Assets - Treatment Contract		
Original Cost (OC) Intangible Assets	(46)	2,353,000
Original Cost less Depreciation (OCLD)	(57)	1,400,670
Preliminary OCLD Total assets		
Original Cost (OC) Total Assets		11,798,761
Original Cost less Depreciation (OCLD) Total Assets		8,399,671
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary OCLD Total Assets		8,399,671
Economic Obsolescence (EO $s)		-
EO % of Preliminaary RCNLD		0.00%
Depreciated Original Cost (OCLD)	(57)	
OCLD Tangible Assets		6,999,001
OCLD Intangible Assets		1,400,670
OCLD Total Assets		8,399,671

The following table presents the final original cost less depreciation:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total East Coventry Township Wastewater Utility	11,798,761							3,399,090	8,399,671
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

Value Conclusion

The Fair Market Value of the East Coventry Township's, Pennsylvania's wastewater property, plant and equipment and its operation were determined to be $13,405,035 as follows:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility			Weight	Wtd Valuation Indications
Cost Approach		**Cost Approach**			
Depreciated Original Cost ($OCLD)		**Replacement Cost**			
Tangible Assets		**Tangible Assets**			
Original Cost ($OC)	9,445,761	**Replacement Cost New (COR)**	21,037,513		
Depreciated Original Cost ($OCLD)	6,999,001	**Depreciated Replacement Cost New (CORLD)**	15,313,526		
Intangible Assets		**Intangible Assets**			
Original Cost ($OC)	2,353,000	**Replacement Cost New (COR)**	7,063,706		
Depreciated Original Cost ($OCLD)	1,400,670	**Depreciated Replacement Cost New (CORLD)**	4,204,796		
Total Assets		**Total Assets**			
Original Cost ($OC)	11,798,761	**Replacement Cost New (COR)**	28,101,219		
Depreciated Original Cost ($OCLD)	8,399,671	**Depreciated Replacement Cost New (CORLD)**	19,518,322		
Economic Obsolescence (EO)		**Economic Obsolescence (EO)**			
Purchase Price (Asset Purchase Agreement)	11,975,448	Purchase Price (Asset Purchase Agreement)	11,975,448		
Preliminary OCLD Total Assets	8,399,671	Preliminary Replacement Cost	19,518,322		
Economic Obsolescence (EO $s)	-	Economic Obsolescence (EO $s)	7,542,874		
EO % of Preliminaary RCNLD	0.0000%	EO % of Preliminaary RCNLD	38.6451%		
Fair Market Value (FMV) Tangible Assets (OCLD)		**Fair Market Value (FMV) Tangible Assets**			
FMV Tangible Assets	6,999,001	FMV Tangible Assets	9,395,599		
FMV Intangible Assets	1,400,670	FMV Intangible Assets	2,579,848		
FMV Total Assets	8,399,671	FMV Total Assets	11,975,447		
Cost Approach Conclusion			**11,975,447**	**33.33%**	**3,991,816**
Income Approach					
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	15,077,667				
Income Approach Conclusion	**15,077,667**			**33.33%**	**5,025,889**
Market Approach					
Market Comparables to:					
OCLD	15,096,169				
CORLD	10,222,441				
Customers	9,019,202				
Cash Flows					
EBITDA Periods 1-5	13,873,550				
EBITDA Periods 1-13	13,379,739				
Value Line	14,592,917				
Mean	12,697,336				
Median	13,626,645				
Conclusion	13,161,990				
Market Approach Conclusion	**13,161,990**			**33.33%**	**4,387,330**
Appraisal Conclusion	**$** **13,405,035**			**100.00%**	**13,405,035**
Conclusion (cost approach)	**$** **11,975,447**				

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 East Coventry Township's wastewater collection and treatment system's property, plant and equipment this appraisal's conclusion of $13,405,035 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) 2024

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 East Coventry Township's Wastewater Collection, Conveyance and Purchased Treatment Capacity (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 city 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 October 15, 2024, and the appraisal report date is February 24, 2024.

- 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) 2024

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 Carroll Engineering, Corporation's "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 (2019-2023 and budgetary 2024) 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.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024

Fulfillment of Requirements for a Personal Property Appraisal and Report

- 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 – 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.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024

Fulfillment of Requirements for a Personal Property Appraisal and Report

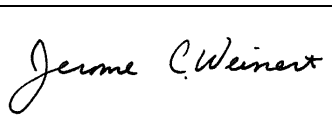
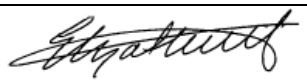
WADS Consultants certify that, to the best of its knowledge and belief:

- 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.
- WADS Consultants has not performed an appraisal of the East Coventry wastewater collection system previously in the last three year.
- WADS 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 2024-2025.
- 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 include: Scott Fogelsanger of American Water Company provided information obtained from the East Coventry Township and the Engineer's Assessment report prepared by Carroll Engineering Corporation which was the inventory starting point of the Cost Approach.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024

Fulfillment of Requirements for a Personal Property Appraisal and Report

WADS Consultants,
By:

	
Jerome C. Weinert, ASA, 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

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Valuation Summary

WADS Consultants
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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value Appraisal

Appraisal Approach	Investor-owned Utility			Weight	Wtd Valuation Indications
Cost Approach		**Cost Approach**			
Depreciated Original Cost ($OCLD)		**Replacement Cost**			
Tangible Assets		**Tangible Assets**			
Original Cost ($OC)	9,445,761	**Replacement Cost New (COR)**	21,037,513		
Depreciated Original Cost ($OCLD)	6,999,001	**Depreciated Replacement Cost New (CORLD)**	15,313,526		
Intangible Assets		**Intangible Assets**			
Original Cost ($OC)	2,353,000	**Replacement Cost New (COR)**	7,063,706		
Depreciated Original Cost ($OCLD)	1,400,670	**Depreciated Replacement Cost New (CORLD)**	4,204,796		
Total Assets		**Total Assets**			
Original Cost ($OC)	11,798,761	**Replacement Cost New (COR)**	28,101,219		
Depreciated Original Cost ($OCLD)	8,399,671	**Depreciated Replacement Cost New (CORLD)**	19,518,322		
Economic Obsolescence (EO)		**Economic Obsolescence (EO)**			
Purchase Price (Asset Purchase Agreement)	11,975,448	Purchase Price (Asset Purchase Agreement)	11,975,448		
Preliminary OCLD Total Assets	8,399,671	Preliminary Replacement Cost	19,518,322		
Economic Obsolescence (EO $s)	-	Economic Obsolescence (EO $s)	7,542,874		
EO % of Preliminaary RCNLD	0.0000%	EO % of Preliminaary RCNLD	38.6451%		
Fair Market Value (FMV) Tangible Assets (OCLD)		**Fair Market Value (FMV) Tangible Assets**			
FMV Tangible Assets	6,999,001	FMV Tangible Assets	9,395,599		
FMV Intangible Assets	1,400,670	FMV Intangible Assets	2,579,848		
FMV Total Assets	8,399,671	FMV Total Assets	11,975,447		
Cost Approach Conclusion			**11,975,447**	33.33%	**3,991,816**
Income Approach					
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	15,077,667				
Income Approach Conclusion	**15,077,667**			33.33%	**5,025,889**
Market Approach					
Market Comparables to:					
OCLD	15,096,169				
CORLD	10,222,441				
Customers	9,019,202				
Cash Flows					
EBITDA Periods 1-5	13,873,550				
EBITDA Periods 1-13	13,379,739				
Value Line	14,592,917				
Mean	12,697,336				
Median	13,626,645				
Conclusion	13,161,990				
Market Approach Conclusion	**13,161,990**			33.33%	**4,387,330**
Appraisal Conclusion	**$ 13,405,035**			**100.00%**	**13,405,035**
Conclusion (cost approach)	$ 11,975,447				
Composite Depreciation	1.58%				

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach

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East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
RCNLD Tangible Assets		
Original Cost (OC)	(9)	9,445,761
Replacement Cost New (RCN)	(16)	21,037,513
Replacement Cost New less Depreciation (RCNLD)	(31)	15,313,526
Intangible Assets - Treatment Contract		
Original Cost (OC)	(9)	2,353,000
Replacement Cost New (RCN)	(16)	7,063,706
Replacement Cost New less Depreciation (RCNLD)	(31)	4,204,796
Preliminary Replacement Cost less Depreciation (RCNLD) Tangible and Intangible Assets		19,518,322
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		11,975,448
Preliminary Replacement Cost		19,518,322
Economic Obsolescence (EO $s)		7,542,874
EO % of Preliminaary RCNLD	(40)	38.6451%
Fair Market Value (FMV) Tangible Assets		
FMV Tangible Assets		9,395,599
FMV Intangible Assets		2,579,848
FMV Total Assets	(41)	11,975,447
Depreciated Original Cost (OCLD)		
OCLD Tangible Assets		
Original Cost (OC) Tangible Assets	(46)	9,445,761
Original Cost less Depreciation (OCLD)	(57)	6,999,001
Intangible Assets - Treatment Contract		
Original Cost (OC) Intangible Assets	(46)	2,353,000
Original Cost less Depreciation (OCLD)	(57)	1,400,670
Preliminary OCLD Total assets		
Original Cost (OC) Total Assets		11,798,761
Original Cost less Depreciation (OCLD) Total Assets		8,399,671
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		11,975,448
Preliminary OCLD Total Assets		8,399,671
Economic Obsolescence (EO $s)		-
EO % of Preliminaary RCNLD		0.00%
Depreciated Original Cost (OCLD)	(57)	
OCLD Tangible Assets		6,999,001
OCLD Intangible Assets		1,400,670
OCLD Total Assets		8,399,671

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach
Replacement Cost New

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	WAD Input NARUC Code	Carroll Engineering Corporation April 2024 Asset Description	Eng Assmnt Original Cost	WAD Input Cost Index Table	Translator	RCN	WAD Input COR / RCN Factor	Col (14) * (15) COR
353.00	353.00	Land & Land Rights	12	USBLS3	1,153.75	13,845	1.00	13,845
353.00	353.00	Treatment Contract	2,353,000	HWW-117	3.00	7,063,706	1.00	7,063,706
353.00	353.00	Stuctures & Improvements - Pumping	795,310	HWW-18	2.19	1,742,711	1.00	1,742,711
353.00	353.00	Generating Equipment - Pumping	145,578	USBLS4	1.83	266,445	1.00	266,445
353.00	353.00	Collection Sewers - Force - Mains	609,828	HWW-134	2.66	1,623,322	1.00	1,623,322
353.00	353.00	Collection Sewers - Gravity - Mains	5,029,881	HWW-134	2.19	11,000,436	1.00	11,000,436
353.00	353.00	Collection Sewers - Gravity - Manholes	764,192	HWW-145	1.72	1,311,617	1.00	1,311,617
353.00	353.00	Service Laterals	863,916	HWW-139	1.65	1,422,371	1.00	1,422,371
353.00	353.00	Flow Measuring Devices - Pumping	37,733	HWW-140	4.47	168,661	1.00	168,661
353.00	353.00	Pumping Equipment	315,824	HWW-19	3.31	1,046,749	1.00	1,046,749
353.00	353.00	Treatment and Disposal Equipment Chemical Feed Systems	207,929	HWW-117	2.77	576,522	1.00	576,522
353.00	353.00	Other Plant & Misc Equip	675,559	HWW-117	2.76	1,864,834	1.00	1,864,834
		Total Borough of Brentwood Wastewater Utility	**11,798,761**			**28,101,219**		**28,101,219**
Grand Total	Grand Total	Grand Total	11,798,761		2.38	28,101,219	1.00	28,101,219
		Difference	-			-		-

Cost Approach for Report

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Depreciation & Obsolescence

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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)		(7)
		(4a)	(4b)		(6a)	(6b)	
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	RCNLD Economic Obsolescence	Tax Depreciation		OCLD Economic Obsolescence
			years	% of CORLD	Table	Life	% of CORLD
353.00	Land & Land Rights	ZNonDep	0.00	64.14%	Non-Depr	0.00	1.00%
353.10	Treatment Contract	R2.0	45.00	64.14%	MACRS	25.00	1.00%
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	64.14%	MACRS	25.00	1.00%
355.30	Generating Equipment - Pumping	R3.0	35.00	64.14%	MACRS	25.00	1.00%
360.10	Collection Sewers - Force - Mains	R3.0	75.00	64.14%	MACRS	25.00	1.00%
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	64.14%	MACRS	25.00	1.00%
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	64.14%	MACRS	25.00	1.00%
363.00	Service Laterals	R3.0	50.00	64.14%	MACRS	25.00	1.00%
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	64.14%	MACRS	25.00	1.00%
371.40	Pumping Equipment - Treatment	R3.0	35.00	64.14%	MACRS	25.00	1.00%
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	64.14%	MACRS	25.00	1.00%
389.30	Other Plant & Misc Equip	R3.0	45.00	64.14%	MACRS	25.00	1.00%

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach
Replacement Cost New less Depreciation

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at February 24, 2024 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	Carroll Engineering Corporation April 2024		Col (16)	WAD Input	WAD Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.00	Land & Land Rights	13.00	13,845	ZNonDep	-	-	13.00	-	13,845
353.10	Treatment Contract	19.50	7,063,706	R2.0	45.00	28.68	48.18	45.00	4,204,796
354.30	Stuctures & Improvements - Pumping	18.69	1,742,711	R4.0	45.00	26.74	45.44	45.00	1,025,824
355.30	Generating Equipment - Pumping	18.18	266,445	R3.0	35.00	18.27	36.45	35.00	133,612
360.10	Collection Sewers - Force - Mains	19.07	1,623,322	R3.0	75.00	56.61	75.69	75.00	1,214,310
361.10	Collection Sewers - Gravity - Mains	16.34	11,000,436	R2.5	80.00	65.13	81.47	80.00	8,795,972
361.20	Collection Sewers - Gravity - Manholes	15.86	1,311,617	S2.0	75.00	59.13	74.99	75.00	1,034,355
363.00	Service Laterals	14.15	1,422,371	R3.0	50.00	36.46	50.62	50.00	1,025,125
364.30	Flow Measuring Devices - Pumping	18.70	168,661	S2.0	30.00	13.43	32.13	30.00	70,617
371.30	Pumping Equipment	18.35	1,046,749	R3.0	35.00	18.12	36.47	35.00	520,401
380.40	Treatment and Disposal Equipment Chemical Feed Systems	18.43	576,522	R2.0	45.00	29.53	47.96	45.00	355,096
389.30	Other Plant & Misc Equip	18.37	1,864,834	R3.0	45.00	27.88	46.25	45.00	1,124,369
	Total Borough of Brentwood Wastewater Utility		28,101,219						19,518,322
Grand Total	Grand Total	17.59	28,101,219 -		61.51	45.62	63.21	0.69	19,518,322 -

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)	WAD Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account		Description	Prelim CORLD	EO%	FMV
353.00	Land & Land Rights		13,845	64.14%	4,965
353.10	Treatment Contract		4,204,796	64.14%	1,507,995
354.30	Stuctures & Improvements - Pumping		1,025,824	64.14%	367,899
355.30	Generating Equipment - Pumping		133,612	64.14%	47,918
360.10	Collection Sewers - Force - Mains		1,214,310	64.14%	435,497
361.10	Collection Sewers - Gravity - Mains		8,795,972	64.14%	3,154,559
361.20	Collection Sewers - Gravity - Manholes		1,034,355	64.14%	370,957
363.00	Service Laterals		1,025,125	64.14%	367,647
364.30	Flow Measuring Devices - Pumping		70,617	64.14%	25,325
371.30	Pumping Equipment		520,401	64.14%	186,636
380.40	Treatment and Disposal Equipment Chemical Feed Systems		355,096	64.14%	127,350
389.30	Other Plant & Misc Equip		1,124,369	64.14%	403,241
	Total Borough of Brentwood Wastewater Utility		19,518,322		6,999,989
Grand Total	Grand Total		19,518,322	64.14%	6,999,989
			-		-

Cost Approach for Report

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Depreciation & Obsolescence

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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
353.00	Land & Land Rights	USBLS	PPI	3.00	USBLS3	1.00
353.10	Treatment Contract	HW	W-1	17.00	HWW-117	1.00
354.30	Stuctures & Improvements - Pumping	HW	W-1	8.00	HWW-18	1.00
355.30	Generating Equipment - Pumping	USBLS	PPI	4.00	USBLS4	1.00
360.10	Collection Sewers - Force - Mains	HW	W-1	34.00	HWW-134	1.00
361.10	Collection Sewers - Gravity - Mains	HW	W-1	34.00	HWW-134	1.00
361.20	Collection Sewers - Gravity - Manholes	HW	W-1	45.00	HWW-145	1.00
363.00	Service Laterals	HW	W-1	39.00	HWW-139	1.00
364.30	Flow Measuring Devices - Pumping	HW	W-1	40.00	HWW-140	1.00
371.40	Pumping Equipment - Treatment	HW	W-1	9.00	HWW-19	1.00
380.40	Treatment and Disposal Equipment Chemical Feed Systems	HW	W-1	17.00	HWW-117	1.00
389.30	Other Plant & Misc Equip	HW	W-1	17.00	HWW-117	1.00

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Original Cost less Depreciation

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total Borough of Brentwood Wastewater Utility	**11,798,761**							**3,399,090**	**8,399,671**
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Income Approach

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J. Weinert's E-Mail:

\\aus-dc1\Shared\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 10-11-2024

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	1,076,411	375,036	525,137	701,375	176,238	50,915	728,086	6,458	(84,084)	0.964	(81,057)	(81,057)
2	1.5	1,210,962	400,603	556,480	810,359	253,879	73,346	775,338	7,266	(45,591)	0.895	(40,804)	(121,861)
3	2.5	1,665,073	429,545	591,927	1,235,528	643,601	185,936	825,858	24,522	199,212	0.831	165,545	43,684
4	3.5	1,873,207	462,182	631,920	1,411,025	779,105	225,083	879,995	11,239	294,708	0.771	227,220	270,904
5	4.5	2,107,358	498,869	676,943	1,608,489	931,546	269,124	938,016	12,644	388,705	0.716	278,313	549,217
6	5.5	2,465,609	504,400	727,521	1,961,209	1,233,688	356,412	1,000,200	19,346	585,251	0.665	389,192	938,409
7	6.5	2,514,921	511,041	676,123	2,003,880	1,327,757	383,589	680,387	2,663	937,241	0.617	578,278	1,516,687
8	7.5	2,565,219	518,729	710,619	2,046,490	1,335,871	385,933	709,066	2,716	948,775	0.573	543,648	2,060,335
9	8.5	2,770,437	527,413	747,829	2,243,024	1,495,195	431,962	739,079	11,081	1,060,902	0.532	564,400	2,624,735
10	9.5	2,825,846	537,045	787,935	2,288,801	1,500,866	433,600	770,490	2,993	1,081,718	0.494	534,369	3,159,104
11	10.5	2,882,363	547,584	831,130	2,334,779	1,503,649	434,404	803,365	3,052	1,093,958	0.459	502,127	3,661,231
12	11.5	3,112,952	558,997	877,623	2,553,955	1,676,332	484,292	837,774	12,452	1,219,437	0.426	519,480	4,180,711
13	12.5	3,175,211	571,254	927,630	2,603,957	1,676,327	484,291	873,790	3,361	1,242,515	0.396	492,036	4,672,747
14	13.5	3,238,715	584,330	981,384	2,654,385	1,673,001	483,330	911,487	3,429	1,256,139	0.367	461,003	5,133,750
15	14.5	3,497,812	598,205	1,039,131	2,899,607	1,860,476	537,492	950,947	13,991	1,397,177	0.341	476,437	5,610,187
16	15.5	3,567,768	615,391	599,320	2,952,377	2,353,057	679,798	276,319	3,778	1,992,482	0.317	631,617	6,241,804
17	16.5	3,639,123	633,094	608,643	3,006,029	2,397,386	692,605	278,393	3,853	2,031,178	0.294	597,166	6,838,970
18	17.5	3,930,253	651,327	618,116	3,278,926	2,660,810	768,708	280,481	15,722	2,214,015	0.273	604,426	7,443,396
19	18.5	4,008,858	670,108	627,740	3,338,750	2,711,010	783,211	282,585	4,244	2,268,710	0.254	576,252	8,019,648
20 and beyond	19.5	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	3.052	7,058,019	15,077,667
								13,826,360					
Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.235									
PW to Perpetuity = 1/Capitalization Rate				12.987									
$PW_{(20ard\ Beyond)}$ = PW to Perpetuity * $PW\ Factor_{(19.5)}$				3.052									
								Net Plant		18,166,302			
								ADIT		(1,948,763)			
								Rate Base		16,217,539	0.235	3,811,122	11,830,770
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		37,068,612	0.235	8,711,124	16,730,772
								PP	11,975,448				
								OCLD	8,399,671				
								PP/OCLD	1.426				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										26,432,342.47	0.235	6,211,600	14,231,248
								Average					14,467,614

Deferred Tax

\\aus-dc1\Shared\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 10-11-2024

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	0.235	543,458	8,563,106
21	20.5	4,416,158	709,375	647,448	3,706,783	3,059,335	883,842	286,840	17,664	2,518,437	0.219	551,538	9,114,644
22	21.5	4,504,481	729,897	657,534	3,774,584	3,117,050	900,516	288,990	4,770	2,580,308	0.203	523,803	9,638,447
23	22.5	4,594,571	751,035	667,781	3,843,536	3,175,755	917,475	291,159	4,865	2,630,037	0.188	494,447	10,132,894
24	23.5	4,962,137	772,807	678,189	4,189,330	3,511,141	1,014,369	293,343	19,848	2,861,770	0.175	500,810	10,633,704
25	24.5	5,061,380	795,232	688,754	4,266,148	3,577,394	1,033,509	295,541	5,359	2,931,739	0.162	474,942	11,108,646
26	25.5	5,162,608	818,329	297,659	4,344,279	4,046,620	1,169,069	297,757	5,467	2,871,986	0.151	433,670	11,542,316
27	26.5	5,575,617	842,119	299,893	4,733,498	4,433,605	1,280,868	299,992	22,303	3,130,335	0.140	438,247	11,980,563
28	27.5	5,687,129	866,624	302,141	4,820,505	4,518,364	1,305,355	302,240	6,021	3,206,889	0.130	416,896	12,397,459
29	28.5	5,800,872	891,863	304,408	4,909,009	4,604,601	1,330,269	304,508	6,142	3,268,090	0.121	395,439	12,792,898
30	29.5	5,916,889	917,860	306,690	4,999,029	4,692,339	1,355,617	306,791	6,265	3,330,356	0.112	373,000	13,165,898
31	30.5	6,035,227	944,636	308,990	5,090,591	4,781,601	1,381,405	309,092	6,391	3,393,703	0.104	352,945	13,518,843
32	31.5	6,155,932	972,216	311,309	5,183,716	4,872,407	1,407,638	311,411	6,517	3,458,150	0.097	335,441	13,854,284
33	32.5	6,279,051	1,000,623	314,610	5,278,428	4,963,818	1,434,047	313,744	6,648	3,523,989	0.090	317,159	14,171,443
34	33.5	6,404,632	1,029,882	317,948	5,374,750	5,056,802	1,460,910	316,100	6,782	3,590,958	0.083	298,050	14,469,493
35	34.5	6,532,725	1,060,019	320,332	5,472,706	5,152,374	1,488,521	318,470	6,917	3,658,798	0.077	281,727	14,751,220
36	35.5	6,663,380	1,091,061	322,734	5,572,319	5,249,585	1,516,605	320,858	7,055	3,727,801	0.072	268,402	15,019,622
37	36.5	6,796,648	1,123,033	325,155	5,673,615	5,348,460	1,545,170	323,264	7,197	3,797,984	0.067	254,465	15,274,087
38	37.5	6,932,581	1,155,964	327,592	5,776,617	5,449,025	1,574,223	325,688	7,341	3,869,365	0.062	239,901	15,513,988
39	38.5	7,071,233	1,189,884	330,051	5,881,349	5,551,298	1,603,770	328,132	7,486	3,941,961	0.058	228,634	15,742,622
40	39.5	7,212,658	1,224,821	332,527	5,987,837	5,655,310	1,633,819	330,594	7,637	4,015,787	0.053	212,837	15,955,459
41	40.5	7,356,911	1,260,806	335,020	6,096,105	5,761,085	1,664,377	333,073	7,790	4,090,865	0.050	204,543	16,160,002
42	41.5	7,504,049	1,297,871	337,534	6,206,178	5,868,644	1,695,451	335,571	7,946	4,167,210	0.046	191,692	16,351,694
43	42.5	7,654,130	1,336,048	352,955	6,318,082	5,965,127	1,723,325	338,085	8,104	4,248,568	0.043	182,688	16,534,382
44	43.5	7,807,213	1,375,371	368,593	6,431,842	6,063,249	1,751,673	340,623	8,267	4,331,279	0.040	173,251	16,707,633
45	44.5	7,963,357	1,415,873	371,358	6,547,484	6,176,126	1,784,283	343,178	8,431	4,411,592	0.037	163,229	16,870,862
46	45.5	8,122,624	1,457,590	374,142	6,665,034	6,290,892	1,817,439	345,751	8,601	4,493,243	0.034	152,770	17,023,632
47	46.5	8,285,076	1,500,559	376,949	6,784,517	6,407,568	1,851,146	348,345	8,772	4,576,254	0.032	146,440	17,170,072
48	47.5	8,450,778	1,544,817	379,776	6,905,961	6,526,185	1,885,415	350,957	8,948	4,660,641	0.029	135,159	17,305,231
49	48.5	8,619,794	1,590,402	382,624	7,029,392	6,646,768	1,920,251	353,589	9,127	4,746,425	0.027	128,153	17,433,384
50	49.5	8,792,190	1,637,354	385,493	7,154,836	6,769,343	1,955,663	356,240	9,309	4,833,624	0.025	120,841	17,554,225
51	50.5	8,968,034	1,685,715	388,386	7,282,319	6,893,933	1,991,657	358,914	9,496	4,922,252	0.024	118,134	17,672,359
52	51.5	9,147,395	1,735,527	391,298	7,411,868	7,020,570	2,028,243	361,605	9,686	5,012,334	0.022	110,271	17,782,630
53	52.5	9,330,343	1,786,834	394,232	7,543,509	7,149,277	2,065,426	364,316	9,878	5,103,889	0.020	102,078	17,884,708
54	53.5	9,516,950	1,839,680	397,190	7,677,270	7,280,080	2,103,215	367,050	10,077	5,196,928	0.019	98,742	17,983,450
55	54.5	9,707,289	1,894,112	400,170	7,813,177	7,413,007	2,141,618	369,804	10,279	5,291,476	0.018	95,247	18,078,697
56	55.5	9,901,435	1,950,176	403,171	7,951,259	7,548,088	2,180,643	372,577	10,484	5,387,555	0.016	86,201	18,164,898
57	56.5	10,099,464	2,007,922	406,193	8,091,542	7,685,349	2,220,297	375,369	10,693	5,485,183	0.015	82,278	18,247,176
58	57.5	10,301,453	2,067,401	409,241	8,234,052	7,824,811	2,260,588	378,186	10,908	5,584,370	0.014	78,181	18,325,357
59	58.5	10,507,482	2,128,664	412,308	8,378,818	7,966,510	2,301,525	381,020	11,125	5,685,148	0.013	73,907	18,399,264
60	59.5	10,717,632	2,191,766	415,402	8,525,866	8,110,464	2,343,113	383,879	11,348	5,787,526	0.156	902,854	19,302,118
								13,607,350					
Age				59.5									
PW(Age) = 1/(1+Discount Rate)^(Age)				0.012									
PW to Perpetuity = 1/Capitalization Rate				12.987									
PW(20 and Beyond) = PW to Perpetuity * PW Factor(19.5)				0.156									
								Net Plant		13,032,331			
								ADIT		(1,165,345)			
								Rate Base		11,866,986	0.012	142,404	18,541,668
								Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 59.5 years		138,812,647	0.012	1,665,752	20,065,016
								PP	11,975,448				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										19,341,544.48	0.012	232,099	18,631,363

Deferred Tax

Water and Wastewater General Information
Appraisal Work Papers

Cost of Capital / Required Return

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Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	100.0%						7.70%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							4.53%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	Not Applicable	Not Applicable	1.74%
Equity	67%	Market	9.65%	Market	Not Applicable	Not Applicable	6.47%
Total Capital r	100.0%						8.21%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							5.03%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	100.0%						6.84%
Growth (g)						Not Applicable	0.00%
Rate without Growth: [(1+r)/(1+g)]-1							6.84%

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Market Approach

WADS Consultants
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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Summary of Market Analyses

Indicators	
OCLD	15,096,169
CORLD	10,222,441
Customers	9,019,202
Cash Flows	
EBITDA Periods 1-5	13,873,550
EBITDA Periods 1-13	13,379,739
Value Line	14,592,917
Mean	12,697,336
Median	13,626,645
Conclusion	**13,161,990**

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Data

Market Sales Analysis - PP/OCLD	Simple		**Market Sales Analysis - PP/CORLD**	Simple	
All Section 1329 Acquistions			All Section 1329 Acquistions		
Mean	1.9442		Mean	0.8168	
Standard Deviation	0.9153		Standard Deviation	0.2242	
Median	1.5139		Median	0.881	
Water Treatment & Distribution			Water Treatment & Distribution		
Mean	1.4354		Mean	0.853616667	
Water Distribution			Water Distribution		
Mean	0.00		Mean	0.7686	
Wastewater Collection & Treatment			Wastewater Collection & Treatment		
Mean	1.7972		Mean	0.8536	
Wastewater Collection			Wastewater Collection		
Mean	1.8733		Mean	0.8077	
Wastewater Treatment Only			Wastewater Treatment Only		
Mean	-0.07607		Mean	0.0459	
WADS Conclusion	1.7972	WADS Input	WADS Conclusion	0.8536	WADS Input
East ConventryTownship OCLD	8,399,671	Cost Approach - OCLD	East ConventryTownship CORLD	11,975,447	Cost Approach - CORLD
Market Value Indication	**15,096,169**		**Market Value Indication**	**10,222,441**	

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Customer

	Simple
All Section 1329 Acquistions	
Mean	8,557
Standard Deviation	3,997
Median	8,315
Water Treatment and Distribution	
Mean	6,157
Water Distribution	
Mean	3,992
Wastewater Collection & Treatment	
Mean	10,410
Wastewater Collection	
Mean	6,268
Watewater Treatment Only	
Mean	4,142

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.09	
Use (equity and debt)	2.09	WADS Input

Conclusion

East ConventryTownship Customers	866	WADS Input	East ConventryTownship OCLD	6,999,001	Cost Approach - OCLD
Wastewater Collection & Treatment	10,410	WADS Input			
Collection and Treatement Customers Market Value Indication	**9,015,060**		**Market Value Indication**	**14,592,917**	
Treatement Only Market Value Indication					
Treatment Only PP/customer	4,142	WADS Input			
Treatment Only Customers	-	WADS Input			
Market Value Indication Treatment Only	-				
Total Market Value Indication	**9,019,202**				

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

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

	Simple	
All Section 1329 Acquistions		
Mean	16.95	
Standard Deviation	5.91	
Median	16.94	
Conclusion	16.95	WADS Input
Water Treatment and Distribution		
Mean	14.94	
Water Distribution		
Mean	20.24	
Wastewater Collection & Treatment		
Mean	16.69	
Wastewater Collection		
Mean	17.88	
Watewater Treatment Only		
Mean	(1.19)	

Conclusion

		Income
East Coventry Cash Flows	831,408	Approach
Wastewater Collection & Treatment	16.69	
Market Value Indication	**13,873,550**	

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

	Simple	
All Section 1329 Acquistions		
Mean	12.04	
Standard Deviation	3.59	
Median	11.98	
Conclusion	12.04	WADS Input
Water Treatment and Distribution		
Mean	10.50	
Water Distribution		
Mean	13.59	
Wastewater Collection & Treatment		
Mean	11.93	
Wastewater Collection		
Mean	12.70	
Watewater Treatment Only		
Mean	(0.77)	

Conclusion

		Income
East Coventry Cash Flows	1,121,619	Approach
Wastewater Collection & Treatment	11.93	
Market Value Indication	**13,379,739**	

Appendix A-5.1

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	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	AUS for PAWC		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	AUS for Seller		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	AUS for Seller		Chester	Wastewater Collection and 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	AUS for Seller	Competitive 3 bidde	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidde	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	AUS for PAWC		Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		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	AUS for Seller	Competitive 3 bidde	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	7,325,000	1,459	Post
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	13,950,000	1,644	Post
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Pending
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	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	AUS for Seller	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	AUS for Seller		Chesler	Wastewater Collection and Treatment	54,930,000	54,930,000	3,918	Post
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chesler	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	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	235,000,000	15,851	Post
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	41,250,000	3,958	Pending
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	12,000,000	2,930	Post
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	19,200,000	3,976	Pending
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	231,500,000	15,000	Post
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000	18,000,000	2,281	Post
	End of Section 1329 Data											
					Count 19			Wastewater Collection and Treatment	15			
								Wastewater Collection	7			
								Water Treatment and Distribution	3			
								Water Distribution	1			
								All section 1329 Mean	26			
								Standard Deviation				
								Median				

Notes:

1 Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquistion application

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Essential Utilities	California Water	Middlesex Water	SJW Corp	
Price per Share			93.72	153.02	47.57	61.78	86.05	81.02	
Book value per share			19.8	42.8	20.8	23.45	22.55	36.55	
Market to Book Equity Ratio			4.73	3.58	2.29	2.63	3.82	2.22	
Minimum	2.22	2.29							
Mean	3.21	2.935		3.58	2.29				
Standard Deviation	0.91	0.645							
Weighted Market to Debt Ratio	3.18		19,375.29	141,991.01	43,542.01	11,878.99	6,977.75	8,689.35	232,454.40
Median	3.105	2.935							
Maximum	4.73	3.58							
Debt (Total) $s millions			685.7	11,839.0	6,536.8	1,129.7	308.8	1,458.0	
Outstanding Shares (millions)			36.39	181.83	262.29	54.82	17.64	30.32	
Debt per share			18.84	65.11	24.92	20.61	17.51	48.1	
Equity (Total) $s millions			3,410.55	27,823.29	12,477.18	3,387.03	1,517.84	2,456.12	
Total Capital (Debt + Equity)			4,096.25	39,662.29	19,013.98	4,516.73	1,826.64	3,914.12	73,030.01
			0.06	0.54	0.26	0.06	0.03	0.05	1.00
Market Value per Share (Equity+Debt)			112.56	218.13	72.49	82.39	103.56	129.12	
Book Value per Share (Equity+Debt)			38.64	107.91	45.72	44.06	40.06	84.65	
Market to Book (Total Capital) Ratio			2.91	2.02	1.59	1.87	2.59	1.53	
Minimum	1.53	1.59							
Mean	2.09	1.805		2.02	1.59				
Standard Deviation	0.51	0.215							
Weighted Market to Book (Debt&Equity) Ratio	1.94		11,920.10	80,117.83	30,232.22	8,446.28	4,730.99	5,988.61	141,436.03
Variance to Wtd Mean	0.1189		0.97	0.08	(0.35)	(0.07)	0.65	(0.41)	
Median	1.945	1.805							
Maximum	2.91	2.02							

1. Value Line Investment Survey January 10, 2020
2. Value Line dropped Connecticut Water in its January 10, 2020 publication

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach

WADS Consultants
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J. Weinert's Cell: 414-698-8371
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East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

	Column Reference in OCLD & RCNLD	Amount in $s
Depreciated Replacement Cost (RCNLD)		
RCNLD Tangible Assets		
Original Cost (OC)	(9)	9,445,761
Replacement Cost New (RCN)	(16)	21,037,513
Replacement Cost New less Depreciation (RCNLD)	(31)	15,313,526
Intangible Assets - Treatment Contract		
Original Cost (OC)	(9)	2,353,000
Replacement Cost New (RCN)	(16)	7,063,706
Replacement Cost New less Depreciation (RCNLD)	(31)	4,204,796
Preliminary Replacement Cost less Depreciation (RCNLD) Tangible and Intangible Assets		**19,518,322**
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary Replacement Cost		**19,518,322**
Economic Obsolescence (EO $s)		7,542,874
EO % of Preliminaary RCNLD	(40)	38.6451%
Fair Market Value (FMV) Tangible Assets		
FMV Tangible Assets		9,395,599
FMV Intangible Assets		2,579,848
FMV Total Assets	(41)	11,975,447
Depreciated Original Cost (OCLD)		
OCLD Tangible Assets		
Original Cost (OC) Tangible Assets	(46)	9,445,761
Original Cost less Depreciation (OCLD)	(57)	6,999,001
Intangible Assets - Treatment Contract		
Original Cost (OC) Intangible Assets	(46)	2,353,000
Original Cost less Depreciation (OCLD)	(57)	1,400,670
Preliminary OCLD Total assets		
Original Cost (OC) Total Assets		11,798,761
Original Cost less Depreciation (OCLD) Total Assets		8,399,671
Economic Obsolescence (EO)		
Purchase Price (Asset Purchase Agreement)		**11,975,448**
Preliminary OCLD Total Assets		8,399,671
Economic Obsolescence (EO $s)		-
EO % of Preliminaary RCNLD		0.00%
Depreciated Original Cost (OCLD)	(57)	
OCLD Tangible Assets		6,999,001
OCLD Intangible Assets		1,400,670
OCLD Total Assets		8,399,671

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach
Replacement Cost New

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)
			OC $s			RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt NARUC Code	WAD Input NARUC Code	Carroll Engineering Corporation April 2024 Asset Description	Eng Assmnt Original Cost	WAD Input Cost Index Table	Translator	RCN	WAD Input COR / RCN Factor	Col (14) * (15) COR
353.00	353.00	Land & Land Rights	12	USBLS3	1,153.75	13,845	1.00	13,845
353.00	353.00	Treatment Contract	2,353,000	HWW-117	3.00	7,063,706	1.00	7,063,706
353.00	353.00	Stuctures & Improvements - Pumping	795,310	HWW-18	2.19	1,742,711	1.00	1,742,711
353.00	353.00	Generating Equipment - Pumping	145,578	USBLS4	1.83	266,445	1.00	266,445
353.00	353.00	Collection Sewers - Force - Mains	609,828	HWW-134	2.66	1,623,322	1.00	1,623,322
353.00	353.00	Collection Sewers - Gravity - Mains	5,029,881	HWW-134	2.19	11,000,436	1.00	11,000,436
353.00	353.00	Collection Sewers - Gravity - Manholes	764,192	HWW-145	1.72	1,311,617	1.00	1,311,617
353.00	353.00	Service Laterals	863,916	HWW-139	1.65	1,422,371	1.00	1,422,371
353.00	353.00	Flow Measuring Devices - Pumping	37,733	HWW-140	4.47	168,661	1.00	168,661
353.00	353.00	Pumping Equipment	315,824	HWW-19	3.31	1,046,749	1.00	1,046,749
353.00	353.00	Treatment and Disposal Equipment Chemical Feed Systems	207,929	HWW-117	2.77	576,522	1.00	576,522
353.00	353.00	Other Plant & Misc Equip	675,559	HWW-117	2.76	1,864,834	1.00	1,864,834
		Total Borough of Brentwood Wastewater Utility	11,798,761			28,101,219		28,101,219
Grand Total	Grand Total	Grand Total	11,798,761		2.38	28,101,219	1.00	28,101,219
		Difference	-			-		-

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New (RCN)

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Industry	Account	Account	Asset Description	Year Installed	Effective Installation Year	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)
									OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	WADS Input	Cornell Engineering Corporation April 2024	Eng Assmnt	WADS Input				Eng Assmnt	WADS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	WADS Input	Col (14) * (15)
Industry	NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
	Pump Stations Grand Total (Various Accounts)															
Wastewater	354.30	354.30	Pump Station No. 1 Structures	2004	2004	0	-		247,284.00	HWW-18	420.8	974	2.315	572,462	1.000	572,462
Wastewater	355.30	355.30	Pump Station No. 1 Generator	2004	2004	0	-		28,326.00	USBLS4	145.8	286.07	1.962	55,576	1.000	55,576
Wastewater	360.10	360.10	Pump Station No. 1 Force Main	2004	2004	0	-		129,390.00	HWW-134	432.3	1195	2.764	357,634	1.000	357,634
Wastewater	364.30	364.30	Pump Station No. 1 Flow Meter	2004	2004	0	-		6,973.00	HWW-140	207	1074	5.188	36,176	1.000	36,176
Wastewater	371.30	371.30	Pump Station No. 1 Pumps	2004	2004	0	-		74,084.00	HWW-19	572.3	1983	3.465	256,701	1.000	256,701
Wastewater	380.40	380.40	Pump Station No. 1 Chemical Feed System	2004	2004	0	-		34,863.00	HWW-117	480	1441	3.002	104,659	1.000	104,659
Wastewater	389.30	389.30	Pump Station No. 1 Plant & Misc. Equipment	2004	2004	0	-		148,470.00	HWW-117	480	1441	3.002	445,707	1.000	445,707
								669,390.00	669,390.00					1,828,915		1,828,915
Wastewater	354.30	354.30	Pump Station No. 2 Structures	2004	2004	0	-		102,466.00	HWW-18	420.8	974	2.315	237,209	1.000	237,209
Wastewater	355.30	355.30	Pump Station No. 2 Generator	2004	2004	0	-		18,488.00	USBLS4	145.8	286.07	1.962	36,273	1.000	36,273
Wastewater	360.10	360.10	Pump Station No. 2 Force Main	2004	2004	0	-		28,800.00	HWW-134	432.3	1195	2.764	79,603	1.000	79,603
Wastewater	364.30	364.30	Pump Station No. 2 Flow Meter	2004	2004	0	-		6,471.00	HWW-140	207	1074	5.188	33,572	1.000	33,572
Wastewater	371.30	371.30	Pump Station No. 2 Pumps	2004	2004	0	-		36,976.00	HWW-19	572.3	1983	3.465	128,122	1.000	128,122
Wastewater	380.40	380.40	Pump Station No. 2 Chemical Feed System	2004	2004	0	-		36,976.00	HWW-117	480	1441	3.002	111,002	1.000	111,002
Wastewater	389.30	389.30	Pump Station No. 2 Plant & Misc. Equipment	2004	2004	0	-		108,623.00	HWW-117	480	1441	3.002	326,086	1.000	326,086
								338,800.00	338,800.00					951,867		951,867
Wastewater	354.30	354.30	Pump Station No. 3 Structures	2004	2004	0	-		127,694.00	HWW-18	420.8	974	2.315	295,612	1.000	295,612
Wastewater	355.30	355.30	Pump Station No. 3 Generator	2004	2004	0	-		18,895.00	USBLS4	145.8	286.07	1.962	37,072	1.000	37,072
Wastewater	360.10	360.10	Pump Station No. 3 Force Main	2004	2004	0	-		97,394.00	HWW-134	432.3	1195	2.764	269,197	1.000	269,197
Wastewater	364.30	364.30	Pump Station No. 3 Flow Meter	2004	2004	0	-		7,086.00	HWW-140	207	1074	5.188	36,762	1.000	36,762
Wastewater	371.30	371.30	Pump Station No. 3 Pumps	2004	2004	0	-		37,790.00	HWW-19	572.3	1983	3.465	130,942	1.000	130,942
Wastewater	380.40	380.40	Pump Station No. 3 Chemical Feed System	2004	2004	0	-		37,790.00	HWW-117	480	1441	3.002	113,446	1.000	113,446
Wastewater	389.30	389.30	Pump Station No. 3 Plant & Misc. Equipment	2004	2004	0	-		95,745.00	HWW-117	480	1441	3.002	287,426	1.000	287,426
								422,394.00	422,394.00					1,170,457		1,170,457
Wastewater	354.30	354.30	Pump Station No. 4 Structures	2004	2004	0	-		123,337.00	HWW-18	420.8	974	2.315	285,525	1.000	285,525
Wastewater	355.30	355.30	Pump Station No. 4 Generator	2004	2004	0	-		25,381.00	USBLS4	145.8	286.07	1.962	49,798	1.000	49,798
Wastewater	360.10	360.10	Pump Station No. 4 Force Main	2004	2004	0	-		268,980.00	HWW-134	432.3	1195	2.764	743,461	1.000	743,461
Wastewater	364.30	364.30	Pump Station No. 4 Flow Meter	2004	2004	0	-		5,467.00	HWW-140	207	1074	5.188	28,363	1.000	28,363
Wastewater	371.30	371.30	Pump Station No. 4 Pumps	2004	2004	0	-		66,381.00	HWW-19	572.3	1983	3.465	230,010	1.000	230,010
Wastewater	380.40	380.40	Pump Station No. 4 Chemical Feed System	2004	2004	0	-		31,238.00	HWW-117	480	1441	3.002	93,776	1.000	93,776
Wastewater	389.30	389.30	Pump Station No. 4 Plant & Misc. Equipment	2004	2004	0	-		93,196.00	HWW-117	480	1441	3.002	279,774	1.000	279,774
								613,980.00	613,980.00					1,710,707		1,710,707
Wastewater	354.30	354.30	Pump Station No. 5 Structures	2008	2008	0	-		194,529.00	HWW-18	538.3	974	1.809	351,903	1.000	351,903
Wastewater	355.30	355.30	Pump Station No. 5 Generator	2008	2008	0	-		54,488.00	USBLS4	177.7	286.07	1.610	87,726	1.000	87,726
Wastewater	360.10	360.10	Pump Station No. 5 Force Main	2008	2008	0	-		85,264.00	HWW-134	587.5	1195	2.034	173,427	1.000	173,427
Wastewater	364.30	364.30	Pump Station No. 5 Flow Meter	2008	2008	0	-		11,736.00	HWW-140	373	1074	2.879	33,788	1.000	33,788
Wastewater	371.30	371.30	Pump Station No. 5 Pumps	2008	2008	0	-		100,593.00	HWW-19	662.8	1983	2.992	300,974	1.000	300,974
Wastewater	380.40	380.40	Pump Station No. 5 Chemical Feed System	2008	2008	0	-		67,062.00	HWW-117	629	1441	2.291	153,639	1.000	153,639
Wastewater	389.30	389.30	Pump Station No. 5 Plant & Misc. Equipment	2008	2008	0	-		229,524.50	HWW-117	629	1441	2.291	525,841	1.000	525,841
								743,197	743,196.50					1,627,298		1,627,298
	Subtotal Pump Stations							2,787,760.50	2,787,760.50					7,289,244		7,289,244
	Collection System - Mains															
Wastewater	361.10	361.10	Phase 1 Gravity Sewer	2004	2004	8 - 12	7,322		778,865.00	HWW-134	432.3	1195	2.764	2,152,783	1.000	2,152,783
Wastewater	361.10	361.10	Orchard Ridge Gravity Sewer	2004	2004	8	3,611		133,917.10	HWW-134	432.3	1195	2.764	370,147	1.000	370,147
Wastewater	361.10	361.10	Heather Glen Gravity Sewer	2004	2004	8	2,750		66,600.00	HWW-134	432.3	1195	2.764	184,082	1.000	184,082
Wastewater	361.10	361.10	Creek View Gravity Sewer	2004	2004	8	7,695		172,450.00	HWW-134	432.3	1195	2.764	476,652	1.000	476,652
Wastewater	361.10	361.10	Wood Crest Gravity Sewer	2004	2004	8	2,093		46,046.00	HWW-134	432.3	1195	2.764	127,271	1.000	127,271
Wastewater	361.10	361.10	Coventry Greene Gravity Sewer	2004	2004	8	1,994		103,688.00	HWW-134	432.3	1195	2.764	286,594	1.000	286,594
Wastewater	361.10	361.10	Phase 2 Gravity Sewer	2008	2008	8 - 10	20,906		2,974,197.97	HWW-134	587.5	1195	2.034	6,049,519	1.000	6,049,519

0	1	2	3	4	5	6	7	8.00	9.00	10	11	12	13	14	15	16

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New (RCN)

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Industry	Account	Account	Asset Description	Year Installed	Effective Installation Year	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)
									OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	WADS Input	Carroll Engineering Corporation Apps 2024	Eng Assmnt	WADS Input				Eng Assmnt	WADS Input	Cost Indices Lookup Cols(10) & (3)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	WADS Input	Col (14) * (15)
Industry	NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
Wastewater	361.10	361.10	Phase 2 Pressure Sewer	2008	2008	1.5 - 3	2,465		75,467.00	HWW-134	587.5	1195	2.034	153,500	1.000	153,500
Wastewater	361.10	361.10	Coventry Glen Gravity Sewer	2011	2011	8	9,455		491,660.00	HWW-134	647.5	1195	1.846	907,604	1.000	907,604
Wastewater	361.10	361.10	Elementary School Gravity Sewer	2016	2016	8	2,588		106,670.00	HWW-134	755.3	1195	1.582	168,752	1.000	168,752
Wastewater	361.10	361.10	Whispering Woods Gravity Sewer	2017	2017	8	1,808		80,320.00	HWW-134	777	1195	1.538	123,532	1.000	123,532
	Subtotal Collection System - Mains						62,687	5,029,881.07	5,029,881.07					11,000,436		11,000,436
	Collection System - Manholes															
Wastewater	361.20	361.20	Phase 1 Manholes	2004	2004	0	28		65,200.00	HWW-145	375.6	750.9	1.999	130,335	1.000	130,335
Wastewater	361.20	361.20	Orchard Ridge Manholes	2004	2004	0	18		34,852.40	HWW-145	375.6	750.9	1.999	69,670	1.000	69,670
Wastewater	361.20	361.20	Heather Glen Manholes	2004	2004	0	15		30,000.00	HWW-145	375.6	750.9	1.999	59,970	1.000	59,970
Wastewater	361.20	361.20	Creek View Manholes	2004	2004	0	41		82,820.00	HWW-145	375.6	750.9	1.999	165,557	1.000	165,557
Wastewater	361.20	361.20	Wood Crest Manholes	2004	2004	0	13		26,260.00	HWW-145	375.6	750.9	1.999	52,494	1.000	52,494
Wastewater	361.20	361.20	Coventry Greene Manholes	2004	2004	0	5		12,395.00	HWW-145	375.6	750.9	1.999	24,778	1.000	24,778
Wastewater	361.20	361.20	Phase 2 Manholes	2008	2008	0	97		313,631.00	HWW-145	459.3	750.9	1.635	512,787	1.000	512,787
Wastewater	361.20	361.20	Coventry Glen Manholes	2011	2011	0	46		114,034.00	HWW-145	483.7	750.9	1.552	176,981	1.000	176,981
Wastewater	361.20	361.20	Elementary School Manholes	2016	2016	0	14		44,000.00	HWW-145	530.8	750.9	1.415	62,260	1.000	62,260
Wastewater	361.20	361.20	Whispering Woods Manholes	2017	2017	0	13		41,000.00	HWW-145	542.1	750.9	1.385	56,785	1.000	56,785
	Subtotal Colletion System - Manholes						290	764,192.40	764,192.40					1,311,617		1,311,617
	Collection System - Connections															
Wastewater	363.00	363.00	Phase 1 Gravity Service Connection	2004	2004	0	26		9,850.00	HWW-139	388.3	875	2.253	22,192	1.000	22,192
Wastewater	363.00	363.00	Orchard Ridge Gravity Service Connection	2004	2004	0	24		20,280.00	HWW-139	388.3	875	2.253	45,691	1.000	45,691
Wastewater	363.00	363.00	Heather Glen Gravity Service Connection	2004	2004	0	30		25,300.00	HWW-139	388.3	875	2.253	57,001	1.000	57,001
Wastewater	363.00	363.00	Creek View Gravity Service Connection	2004	2004	0	62		13,950.00	HWW-139	388.3	875	2.253	31,429	1.000	31,429
Wastewater	363.00	363.00	Wood Crest Gravity Service Connection	2004	2004	0	22		4,950.00	HWW-139	388.3	875	2.253	11,152	1.000	11,152
Wastewater	363.00	363.00	Coventry Greene Gravity Service Connection	2004	2004	0	13		10,985.00	HWW-139	388.3	875	2.253	24,749	1.000	24,749
Wastewater	363.00	363.00	Phase 2 Gravity Service Connection	2008	2008	0	179		327,222.50	HWW-139	514.3	875	1.701	556,605	1.000	556,605
Wastewater	363.00	363.00	Phase 2 Pressure Sewer Service Connection	2008	2008	0	21		28,278.00	HWW-139	514.3	875	1.701	48,101	1.000	48,101
Wastewater	363.00	363.00	Coventry Glen Gravity Service Connection	2011	2011	0	380		321,100.00	HWW-139	576.3	875	1.518	487,430	1.000	487,430
Wastewater	363.00	363.00	Elementary School Gravity Service Connection	2016	2016	0	16		12,800.00	HWW-139	623.5	875	1.403	17,958	1.000	17,958
Wastewater	363.00	363.00	Whispering Woods Gravity Service Connection	2017	2017	0	80		89,200.00	HWW-139	650.3	875	1.346	120,063	1.000	120,063
	Subtotal Collection System - Connections						853	863,915.50	863,915.50					1,422,371		1,422,371
	Land and Land Rights															
Wastewater	353.00	353.00	1 Grantor	2024	2024	Pennsylvania - American Water Company	Easement Agreement	923.00	1.00	USBLS3	218.9	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00	2 Grantee	2019	2019	Mark & Abby Meyers	Easement Agreement	923.00	1.00	USBLS3	182.7	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00	3 Grantee	2019	2019	Coventry Glen Community Association	Easement Agreement	923.00	1.00	USBLS3	182.7	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00	4 Grantee	2007	2007	Heritage - Creekview, LP	Deed of Dedication	923.00	-	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00	5 Grantee	2007	2007	Walter & Jeanette Leuchak	Deed	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00	6 Grantee	2007	2007	Frederick W & Barbara A Martin	Easement Agreement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New (RCN)

(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Industry	Account	Account	Asset Description	Year Installed	Effective Installation Year	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)
									OC $s					RCN $s	COR $s / RCN $s	COR $s
Input	Input	Input	Input	Input	Input				Input	Input	Input	Input	Calculation	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	WADS Input	Carroll Engineering Corporation April 2024	Eng Assmnt	WADS Input				Eng Assmnt	WADS Input	Cost Indices Lookup Cols(10) & (5)	Cost Indices Lookup Cols(10) & Study YR	Col (12) / (11)	Col (5) * (13)	WADS Input	Col (14) * (15)
Industry	NARUC Code	NARUC Code	Asset Description	Service Date					Original Cost	Cost Index Table	YearIndex	APPCostIndex	Translator	RCN	COR / RCN Factor	COR
Wastewater	353.00	353.00 7 Grantee		2007	2007	Douglas & Charlotte McLean	Easement Agreement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 8 Grantee		2007	2007	Gabriel A & Michele Serbin	Easement Agreement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 9 Assignee		2007	2007	Heritage Building Group, Inc. & Orchard Ridge Apartments, LP	Assignment of Easement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 10 Assignee		2007	2007	Heritage Building Group, Inc.	Assignment of Easement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 11 Assignee		2007	2007	Heritage Building Group, Inc.	Assignment of Easement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 12 Grantee		2006	2006	Orchard Ridge Apartments, LP	Deed of Dedication	923.00	1.00	USBLS3	139	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 13 Grantee		2022	2022	Owen J Roberts School District	Easement Agreement	923.00	-	USBLS3	201.2	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 14 Grantee		2005	2005	Heritage-Coventry Greene, LP	Deed of Dedication	923.00	-	USBLS3	135	214.4	923.000	923	1.000	923
Wastewater	353.00	353.00 15 Grantee		2007	2007	Heritage-Creekview, LP	Easement Agreement	923.00	1.00	USBLS3	146	214.4	923.000	923	1.000	923
Wastewater	353.10	353.10 16 Party		2004	2004	North Coventry Municipal Authority, North Coventry Township	Agreement		2,353,000.00	HWW-117	480	1441	3.002	7,063,706	1.000	7,063,706
	Subtotal Land and Land Rights							2,353,000.00	2,353,012.00					7,077,551		7,077,551
	Grand Total								11,798,761.47					28,101,219		28,101,219

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Depreciation & Obsolescence

WADS Consultants
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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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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)		(7)
		(4a)	(4b)		(6a)	(6b)	
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	RCNLD Economic Obsolescence	Tax Depreciation		OCLD Economic Obsolescence
			years	% of CORLD	Table	Life	% of CORLD
353.00	Land & Land Rights	ZNonDep	0.00	64.14%	Non-Depr	0.00	1.00%
353.10	Treatment Contract	R2.0	45.00	64.14%	MACRS	25.00	1.00%
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	64.14%	MACRS	25.00	1.00%
355.30	Generating Equipment - Pumping	R3.0	35.00	64.14%	MACRS	25.00	1.00%
360.10	Collection Sewers - Force - Mains	R3.0	75.00	64.14%	MACRS	25.00	1.00%
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	64.14%	MACRS	25.00	1.00%
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	64.14%	MACRS	25.00	1.00%
363.00	Service Laterals	R3.0	50.00	64.14%	MACRS	25.00	1.00%
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	64.14%	MACRS	25.00	1.00%
371.40	Pumping Equipment - Treatment	R3.0	35.00	64.14%	MACRS	25.00	1.00%
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	64.14%	MACRS	25.00	1.00%
389.30	Other Plant & Misc Equip	R3.0	45.00	64.14%	MACRS	25.00	1.00%

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach
Replacement Cost New less Depreciation

WADS Consultants
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J. Weinert's Cell: 414-698-8371
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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(21)	(22)	(23)	(24)	(28)	(29)	(30)	(31)
Account	Description	Age at February 24, 2024 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	Carroll Engineering Corporation April 2024		Col (16)	WAD Input	WAD Input		Col (21) + (28)	Col (28) / (29)	Col (22) * (30)
Account	Description	Age	RCN	Iowa	NL	Rem Life	Total Life	Condition	CORLD
353.00	Land & Land Rights	13.00	13,845	ZNonDep	-	-	13.00	-	13,845
353.10	Treatment Contract	19.50	7,063,706	R2.0	45.00	28.68	48.18	45.00	4,204,796
354.30	Stuctures & Improvements - Pumping	18.69	1,742,711	R4.0	45.00	26.74	45.44	45.00	1,025,824
355.30	Generating Equipment - Pumping	18.18	266,445	R3.0	35.00	18.27	36.45	35.00	133,612
360.10	Collection Sewers - Force - Mains	19.07	1,623,322	R3.0	75.00	56.61	75.69	75.00	1,214,310
361.10	Collection Sewers - Gravity - Mains	16.34	11,000,436	R2.5	80.00	65.13	81.47	80.00	8,795,972
361.20	Collection Sewers - Gravity - Manholes	15.86	1,311,617	S2.0	75.00	59.13	74.99	75.00	1,034,355
363.00	Service Laterals	14.15	1,422,371	R3.0	50.00	36.46	50.62	50.00	1,025,125
364.30	Flow Measuring Devices - Pumping	18.70	168,661	S2.0	30.00	13.43	32.13	30.00	70,617
371.30	Pumping Equipment	18.35	1,046,749	R3.0	35.00	18.12	36.47	35.00	520,401
380.40	Treatment and Disposal Equipment Chemical Feed Systems	18.43	576,522	R2.0	45.00	29.53	47.96	45.00	355,096
389.30	Other Plant & Misc Equip	18.37	1,864,834	R3.0	45.00	27.88	46.25	45.00	1,124,369
	Total Borough of Brentwood Wastewater Utility		**28,101,219**						**19,518,322**
Grand Total	Grand Total	17.59	28,101,219		61.51	45.62	63.21	0.69	19,518,322
			-						-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at February 24, 2024 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2024-[(20)+0.5]	Col (16)	WADS Input	WADS Input	Col (21) / (24)	Col (23) & (25)	Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)	
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
354.3	Pump Station No. 1 Structures	2004	19.50	572,462	R4.0	45.0	43	R4.0043	0.57696	25.96	45.46	57.105147%	326,905	11,163,009	14,861,114	26,024,123	25,760,790
355.3	Pump Station No. 1 Generator	2004	19.50	55,576	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	25,982	1,083,732	951,461	2,035,193	1,945,160
360.1	Pump Station No. 1 Force Main	2004	19.50	357,634	R3.0	75.0	26	R3.0026	0.74986	56.24	75.74	74.254027%	265,558	6,973,863	20,113,336	27,087,199	26,822,550
364.3	Pump Station No. 1 Flow Meter	2004	19.50	36,176	S2.0	30.0	65	S2.0065	0.42974	12.89	32.39	39.796233%	14,397	705,432	466,309	1,171,741	1,085,280
371.3	Pump Station No. 1 Pumps	2004	19.50	256,701	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	120,009	5,005,670	4,394,721	9,400,391	8,984,535
380.4	Pump Station No. 1 Chemical Feed System	2004	19.50	104,659	R2.0	45.0	43	R2.0043	0.63735	28.68	48.18	59.526775%	62,300	2,040,851	3,001,620	5,042,471	4,709,655
389.3	Pump Station No. 1 Plant & Misc. Equipment	2004	19.50	445,707	R3.0	45.0	43	R3.0043	0.59718	26.87	46.37	57.946948%	258,274	8,691,287	11,976,147	20,667,434	20,056,815
				1,828,915									1,073,425	35,663,844	55,764,706	91,428,552	89,364,785
354.3	Pump Station No. 2 Structures	2004	19.50	237,209	R4.0	45.0	43	R4.0043	0.57696	25.96	45.46	57.105147%	135,459	4,625,576	6,157,946	10,783,521	10,674,405
355.3	Pump Station No. 2 Generator	2004	19.50	36,273	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	16,958	707,324	620,994	1,328,317	1,269,555
360.1	Pump Station No. 2 Force Main	2004	19.50	79,603	R3.0	75.0	26	R3.0026	0.74986	56.24	75.74	74.254027%	59,108	1,552,259	4,476,873	6,029,131	5,970,225
364.3	Pump Station No. 2 Flow Meter	2004	19.50	33,572	S2.0	30.0	65	S2.0065	0.42974	12.89	32.39	39.796233%	13,360	654,654	432,743	1,087,397	1,007,160
371.3	Pump Station No. 2 Pumps	2004	19.50	128,122	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	59,898	2,498,379	2,193,449	4,691,828	4,484,270
380.4	Pump Station No. 2 Chemical Feed System	2004	19.50	111,002	R2.0	45.0	43	R2.0043	0.63735	28.68	48.18	59.526775%	66,076	2,164,539	3,183,537	5,348,076	4,995,090
389.3	Pump Station No. 2 Plant & Misc. Equipment	2004	19.50	326,086	R3.0	45.0	43	R3.0043	0.59718	26.87	46.37	57.946948%	188,957	6,358,677	8,761,931	15,120,608	14,673,870
				951,867									539,816	18,561,408	25,827,473	44,388,878	43,074,575
354.3	Pump Station No. 3 Structures	2004	19.50	295,612	R4.0	45.0	43	R4.0043	0.57696	25.96	45.46	57.105147%	168,810	5,764,434	7,674,088	13,438,522	13,302,540
355.3	Pump Station No. 3 Generator	2004	19.50	37,072	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	17,331	722,904	634,673	1,357,577	1,297,520
360.1	Pump Station No. 3 Force Main	2004	19.50	269,197	R3.0	75.0	26	R3.0026	0.74986	56.24	75.74	74.254027%	199,890	5,249,342	15,139,639	20,388,981	20,189,775
364.3	Pump Station No. 3 Flow Meter	2004	19.50	36,762	S2.0	30.0	65	S2.0065	0.42974	12.89	32.39	39.796233%	14,630	716,859	473,862	1,190,721	1,102,860
371.3	Pump Station No. 3 Pumps	2004	19.50	130,942	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	61,216	2,553,369	2,241,727	4,795,096	4,582,970
380.4	Pump Station No. 3 Chemical Feed System	2004	19.50	113,446	R2.0	45.0	43	R2.0043	0.63735	28.68	48.18	59.526775%	67,531	2,212,197	3,253,631	5,465,828	5,105,070
389.3	Pump Station No. 3 Plant & Misc. Equipment	2004	19.50	287,426	R3.0	45.0	43	R3.0043	0.59718	26.87	46.37	57.946948%	166,555	5,604,807	7,723,137	13,327,944	12,934,170
				1,170,457									695,963	22,823,912	37,140,757	59,964,669	58,514,905
354.3	Pump Station No. 4 Structures	2004	19.50	285,525	R4.0	45.0	43	R4.0043	0.57696	25.96	45.46	57.105147%	163,049	5,567,738	7,412,229	12,979,967	12,848,625
355.3	Pump Station No. 4 Generator	2004	19.50	49,798	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	23,281	971,061	852,542	1,823,603	1,742,930
360.1	Pump Station No. 4 Force Main	2004	19.50	743,461	R3.0	75.0	26	R3.0026	0.74986	56.24	75.74	74.254027%	552,050	14,497,490	41,812,247	56,309,736	55,759,575
364.3	Pump Station No. 4 Flow Meter	2004	19.50	28,363	S2.0	30.0	65	S2.0065	0.42974	12.89	32.39	39.796233%	11,287	553,079	365,599	918,678	850,890
371.3	Pump Station No. 4 Pumps	2004	19.50	230,010	R3.0	35.0	56	R3.0056	0.48904	17.12	36.62	46.750410%	107,531	4,485,195	3,937,771	8,422,966	8,050,350
380.4	Pump Station No. 4 Chemical Feed System	2004	19.50	93,776	R2.0	45.0	43	R2.0043	0.63735	28.68	48.18	59.526775%	55,822	1,828,632	2,689,496	4,518,128	4,219,920
389.3	Pump Station No. 4 Plant & Misc. Equipment	2004	19.50	279,774	R3.0	45.0	43	R3.0043	0.59718	26.87	46.37	57.946948%	162,120	5,455,593	7,517,527	12,973,120	12,589,830
				1,710,707									1,075,140	33,358,788	64,587,411	97,946,196	96,062,120
354.3	Pump Station No. 5 Structures	2008	15.50	351,903	R4.0	45.0	34	R4.0034	0.66313	29.84	45.34	65.813851%	231,601	5,454,497	10,500,786	15,955,282	15,835,635
355.3	Pump Station No. 5 Generator	2008	15.50	87,726	R3.0	35.0	44	R3.0044	0.58858	20.60	36.10	57.063712%	50,060	1,359,753	1,807,156	3,166,909	3,070,410
360.1	Pump Station No. 5 Force Main	2008	15.50	173,427	R3.0	75.0	21	R3.0021	0.79673	59.75	75.25	79.401993%	137,704	2,688,119	10,362,263	13,050,382	13,007,025
364.3	Pump Station No. 5 Flow Meter	2008	15.50	33,788	S2.0	30.0	52	S2.0052	0.51950	15.59	31.09	50.144741%	16,943	523,714	526,755	1,050,469	1,013,640
371.3	Pump Station No. 5 Pumps	2008	15.50	300,974	R3.0	35.0	44	R3.0044	0.58858	20.60	36.10	57.063712%	171,747	4,665,097	6,200,064	10,865,161	10,534,090
380.4	Pump Station No. 5 Chemical Feed System	2008	15.50	153,639	R2.0	45.0	34	R2.0034	0.70812	31.87	47.37	67.278868%	103,367	2,381,405	4,896,475	7,277,879	6,913,755
389.3	Pump Station No. 5 Plant & Misc. Equipment	2008	15.50	525,841	R3.0	45.0	34	R3.0034	0.67660	30.45	45.95	66.267682%	348,463	8,150,536	16,011,858	24,162,394	23,662,845
				1,627,298									1,059,885	25,223,121	50,305,357	75,528,476	74,037,400
				7,289,244									4,444,229	135,631,073	233,625,706	369,256,773	361,053,785
361.1	Phase 1 Gravity Sewer	2004	19.50	2,152,783	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	1,639,840	41,979,269	134,204,492	176,183,761	172,222,640
361.1	Orchard Ridge Gravity Sewer	2004	19.50	370,147	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	281,952	7,217,867	23,074,964	30,292,830	29,611,760
361.1	Heather Glen Gravity Sewer	2004	19.50	184,082	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	140,221	3,589,599	11,475,672	15,065,271	14,726,560
361.1	Creek View Gravity Sewer	2004	19.50	476,652	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	363,080	9,294,714	29,714,486	39,009,200	38,132,160
361.1	Wood Crest Gravity Sewer	2004	19.50	127,271	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	96,946	2,481,785	7,934,074	10,415,859	10,181,680
361.1	Coventry Greene Gravity Sewer	2004	19.50	286,594	R2.5	80.0	24	R2.5024	0.77923	62.34	81.84	76.173021%	218,307	5,588,583	17,866,270	23,454,853	22,927,520
361.1	Phase 2 Gravity Sewer	2008	15.50	6,049,519	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	4,897,867	93,767,545	398,784,292	492,551,837	483,961,520

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Replacement Cost New less Depreciation (RCNLD)

(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at February 24, 2024 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2024-[(26)+0.5]	Col (16)	WADS Input	WADS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
361.1	Phase 2 Pressure Sewer	2008	15.50	153,500	R2.5	80.0	19	R2.5019	0.82402	65.92	81.42	80.962908%	124,278	2,379,250	10,118,720	12,497,970	12,280,000
361.1	Coventry Glen Gravity Sewer	2011	12.50	907,604	R2.5	80.0	16	R2.5016	0.85124	68.10	80.60	84.491315%	766,847	11,345,050	61,807,832	73,152,882	72,608,320
361.1	Elementary School Gravity Sewer	2016	7.50	168,752	R2.5	80.0	9	R2.5009	0.91563	73.25	80.75	90.712074%	153,078	1,265,640	12,361,084	13,626,724	13,500,160
361.1	Whispering Woods Gravity Sewer	2017	6.50	123,532	R2.5	80.0	8	R2.5008	0.92492	73.99	80.49	91.924463%	113,556	802,958	9,140,133	9,943,091	9,882,560
				11,000,436									8,795,972	179,712,260	716,482,019	896,194,278	880,034,880
361.2	Phase 1 Manholes	2004	19.50	130,335	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	96,552	2,541,533	7,263,570	9,805,102	9,775,125
361.2	Orchard Ridge Manholes	2004	19.50	69,670	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	51,611	1,358,565	3,882,709	5,241,274	5,225,250
361.2	Heather Glen Manholes	2004	19.50	59,970	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	44,425	1,169,415	3,342,128	4,511,543	4,497,750
361.2	Creek View Manholes	2004	19.50	165,557	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	122,644	3,228,362	9,226,492	12,454,853	12,416,775
361.2	Wood Crest Manholes	2004	19.50	52,494	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	38,887	1,023,633	2,925,491	3,949,124	3,937,050
361.2	Coventry Greene Manholes	2004	19.50	24,778	S2.0	75.0	26	S2.0026	0.74306	55.73	75.23	74.079490%	18,355	483,171	1,380,878	1,864,049	1,858,350
361.2	Phase 2 Manholes	2008	15.50	512,787	S2.0	75.0	21	S2.0021	0.79128	59.35	74.85	79.291917%	406,599	7,948,199	30,433,908	38,382,107	38,459,025
361.2	Coventry Glen Manholes	2011	12.50	176,981	S2.0	75.0	17	S2.0017	0.83052	62.29	74.79	83.286536%	147,401	2,212,263	11,024,146	13,236,409	13,273,575
361.2	Elementary School Manholes	2016	7.50	62,260	S2.0	75.0	10	S2.0010	0.90005	67.50	75.00	90.000000%	56,034	466,950	4,202,550	4,669,500	4,669,500
361.2	Whispering Woods Manholes	2017	6.50	56,785	S2.0	75.0	9	S2.0009	0.91003	68.25	74.75	91.304348%	51,847	369,103	3,875,576	4,244,679	4,258,875
				1,311,617									1,034,355	20,801,194	77,557,448	98,358,640	98,371,275
363	Phase 1 Gravity Service Connection	2004	19.50	22,192	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	13,723	432,744	701,267	1,134,011	1,109,600
363	Orchard Ridge Gravity Service Connection	2004	19.50	45,691	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	28,255	890,975	1,443,836	2,334,810	2,284,550
363	Heather Glen Gravity Service Connection	2004	19.50	57,001	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	35,249	1,111,520	1,801,232	2,912,751	2,850,050
363	Creek View Gravity Service Connection	2004	19.50	31,429	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	19,436	612,866	993,156	1,606,022	1,571,450
363	Wood Crest Gravity Service Connection	2004	19.50	11,152	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	6,896	217,464	352,403	569,867	557,600
363	Coventry Greene Gravity Service Connection	2004	19.50	24,749	R3.0	50.0	39	R3.0039	0.63205	31.60	51.10	61.839530%	15,305	482,606	782,068	1,264,674	1,237,450
363	Phase 2 Gravity Service Connection	2008	15.50	556,605	R3.0	50.0	31	R3.0031	0.70380	35.19	50.69	69.421977%	386,406	8,627,378	19,586,930	28,214,307	27,830,250
363	Phase 2 Pressure Sewer Service Connection	2008	15.50	48,101	R3.0	50.0	31	R3.0031	0.70380	35.19	50.69	69.421977%	33,393	745,566	1,692,674	2,438,240	2,405,050
363	Coventry Glen Gravity Service Connection	2011	12.50	487,430	R3.0	50.0	25	R3.0025	0.75917	37.96	50.46	75.227903%	366,683	6,092,875	18,502,843	24,595,718	24,371,500
363	Elementary School Gravity Service Connection	2016	7.50	17,958	R3.0	50.0	15	R3.0015	0.85389	42.69	50.19	85.056784%	15,274	134,685	766,627	901,312	897,900
363	Whispering Woods Gravity Service Connection	2017	6.50	120,063	R3.0	50.0	13	R3.0013	0.87314	43.66	50.16	87.041467%	104,505	780,410	5,241,951	6,022,360	6,003,150
				1,422,371									1,025,125	20,129,089	51,864,987	71,994,072	71,118,550
353	1 Grantor	2024	0.00	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	0.00	100.000000%	923	-	-	-	-
353	2 Grantee	2019	4.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	4.50	100.000000%	923	4,154	-	4,154	-
353	3 Grantee	2019	4.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	4.50	100.000000%	923	4,154	-	4,154	-
353	4 Grantee	2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353	5 Grantee	2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353	6 Grantee	2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Pennsylvania American Water Company **East Coventry Township** **Sanitary Sewer System** **Investor-Owned Utility** **As of February 24, 2024**																	
Replacement Cost New less Depreciation (RCNLD)																	
(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)
Account	Description	Placement Year	Age at February 24, 2024 Appraisal Date	Replacement Cost New (COR)	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Condition	Preliminary Cost Approach (COR less Normal Depreciation)	COR Weighted Age	COR Weighted Normal Remaining Life	COR Weighted Total Life Expectancy	COR Weighted Normal Service Life (NSL)
			years	COR $s		years	% of NSL	Lookup	%	years	years	% of COR	CORLD $s	COR $s * Years	COR $s * Years	COR $s * Years	COR $s * Years
Input	Input	Input	Calculation	Calculation	Input	Input	Calculation	Calculation	Lookup Lookup Iowa Curves Life Tables @ col (26)	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	2024-((20)+0.5)	Col (16)	WADS Input	WADS Input	Col (21) / (24)	Col (23) & (25)		Col (24) * (27)	Col (21) + (28)	Col (28) / (29)	Col (22) * (30)	Col (22) * (21)	Col (22) * (28)	Col (22) * (29)	Col (22) * (24)
Account	Description	Year1	Age	RCN	Iowa	NL	AgeP	IowaLookup	IowaCondition	Rem Life	Total Life	Condition	CORLD	COR * Age	COR * RL	COR * TL	COR * NL
353 7 Grantee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353 8 Grantee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353 9 Assignee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353 10 Assignee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353 11 Assignee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353 12 Grantee		2006	17.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	17.50	100.000000%	923	16,153	-	16,153	-
353 13 Grantee		2022	1.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	1.50	100.000000%	923	1,385	-	1,385	-
353 14 Grantee		2005	18.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	18.50	100.000000%	923	17,076	-	17,076	-
353 15 Grantee		2007	16.50	923	ZNonDep	0.0	0	ZNonDep000	0.00000	0.00	16.50	100.000000%	923	15,230	-	15,230	-
353.1 16 Party		2004	19.50	7,063,706 7,077,551	R2.0	45.0	43	R2.0043	0.63735	28.68	48.18	59.526775%	4,204,796 4,218,641	137,742,267 137,922,259	202,587,088 202,587,088	340,329,355 340,509,347	317,866,770 317,866,770
				28,101,219									19,518,322	494,195,875	1,282,117,248	1,776,313,110	1,728,445,260

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Cost Approach

Replacement Cost New less Depreciation to Fair Market Value

WADS Consultants
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8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

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)	WAD Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account		Description	Prelim CORLD	EO%	FMV
353.00		Land & Land Rights	13,845	64.14%	4,965
353.10		Treatment Contract	4,204,796	64.14%	1,507,995
354.30		Stuctures & Improvements - Pumping	1,025,824	64.14%	367,899
355.30		Generating Equipment - Pumping	133,612	64.14%	47,918
360.10		Collection Sewers - Force - Mains	1,214,310	64.14%	435,497
361.10		Collection Sewers - Gravity - Mains	8,795,972	64.14%	3,154,559
361.20		Collection Sewers - Gravity - Manholes	1,034,355	64.14%	370,957
363.00		Service Laterals	1,025,125	64.14%	367,647
364.30		Flow Measuring Devices - Pumping	70,617	64.14%	25,325
371.30		Pumping Equipment	520,401	64.14%	186,636
380.40		Treatment and Disposal Equipment Chemical Feed Systems	355,096	64.14%	127,350
389.30		Other Plant & Misc Equip	1,124,369	64.14%	403,241
		Total Borough of Brentwood Wastewater Utility	**19,518,322**		**6,999,989**
Grand Total		Grand Total	19,518,322	64.14%	6,999,989
			-		-

Cost Approach for Report

36	37	38	39	40	41

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value

(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	WADS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
354.3	Pump Station No. 1 Structures	2004	326,905	64.14%	117,240
355.3	Pump Station No. 1 Generator	2004	25,982	64.14%	9,318
360.1	Pump Station No. 1 Force Main	2004	265,558	64.14%	95,239
364.3	Pump Station No. 1 Flow Meter	2004	14,397	64.14%	5,163
371.3	Pump Station No. 1 Pumps	2004	120,009	64.14%	43,040
380.4	Pump Station No. 1 Chemical Feed	2004	62,300	64.14%	22,343
389.3	Pump Station No. 1 Plant & Misc. E	2004	258,274	64.14%	92,627
			1,073,425		384,970
354.3	Pump Station No. 2 Structures	2004	135,459	64.14%	48,581
355.3	Pump Station No. 2 Generator	2004	16,958	64.14%	6,082
360.1	Pump Station No. 2 Force Main	2004	59,108	64.14%	21,198
364.3	Pump Station No. 2 Flow Meter	2004	13,360	64.14%	4,791
371.3	Pump Station No. 2 Pumps	2004	59,898	64.14%	21,482
380.4	Pump Station No. 2 Chemical Feed	2004	66,076	64.14%	23,697
389.3	Pump Station No. 2 Plant & Misc. E	2004	188,957	64.14%	67,767
			539,816		193,598
354.3	Pump Station No. 3 Structures	2004	168,810	64.14%	60,542
355.3	Pump Station No. 3 Generator	2004	17,331	64.14%	6,216
360.1	Pump Station No. 3 Force Main	2004	199,890	64.14%	71,688
364.3	Pump Station No. 3 Flow Meter	2004	14,630	64.14%	5,247
371.3	Pump Station No. 3 Pumps	2004	61,216	64.14%	21,954
380.4	Pump Station No. 3 Chemical Feed	2004	67,531	64.14%	24,219
389.3	Pump Station No. 3 Plant & Misc. E	2004	166,555	64.14%	59,733
			695,963		249,599
354.3	Pump Station No. 4 Structures	2004	163,049	64.14%	58,475
355.3	Pump Station No. 4 Generator	2004	23,281	64.14%	8,349
360.1	Pump Station No. 4 Force Main	2004	552,050	64.14%	197,986
364.3	Pump Station No. 4 Flow Meter	2004	11,287	64.14%	4,048
371.3	Pump Station No. 4 Pumps	2004	107,531	64.14%	38,565
380.4	Pump Station No. 4 Chemical Feed	2004	55,822	64.14%	20,020
389.3	Pump Station No. 4 Plant & Misc. E	2004	162,120	64.14%	58,142
			1,075,140		385,585
354.3	Pump Station No. 5 Structures	2008	231,601	64.14%	83,061
355.3	Pump Station No. 5 Generator	2008	50,060	64.14%	17,953
360.1	Pump Station No. 5 Force Main	2008	137,704	64.14%	49,386
364.3	Pump Station No. 5 Flow Meter	2008	16,943	64.14%	6,076
371.3	Pump Station No. 5 Pumps	2008	171,747	64.14%	61,595
380.4	Pump Station No. 5 Chemical Feed	2008	103,367	64.14%	37,071
389.3	Pump Station No. 5 Plant & Misc. E	2008	348,463	64.14%	124,972
			1,059,885		380,114
			4,444,229		1,593,866

36	37	38	39	40	41

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value

(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	WADS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
361.1	Phase 1 Gravity Sewer	2004	1,639,840	64.14%	588,107
361.1	Orchard Ridge Gravity Sewer	2004	281,952	64.14%	101,118
361.1	Heather Glen Gravity Sewer	2004	140,221	64.14%	50,288
361.1	Creek View Gravity Sewer	2004	363,080	64.14%	130,214
361.1	Wood Crest Gravity Sewer	2004	96,946	64.14%	34,768
361.1	Coventry Greene Gravity Sewer	2004	218,307	64.14%	78,293
361.1	Phase 2 Gravity Sewer	2008	4,897,867	64.14%	1,756,556
361.1	Phase 2 Pressure Sewer	2008	124,278	64.14%	44,571
361.1	Coventry Glen Gravity Sewer	2011	766,847	64.14%	275,020
361.1	Elementary School Gravity Sewer	2016	153,078	64.14%	54,899
361.1	Whispering Woods Gravity Sewer	2017	113,556	64.14%	40,725
			8,795,972		3,154,559
361.2	Phase 1 Manholes	2004	96,552	64.14%	34,627
361.2	Orchard Ridge Manholes	2004	51,611	64.14%	18,510
361.2	Heather Glen Manholes	2004	44,425	64.14%	15,932
361.2	Creek View Manholes	2004	122,644	64.14%	43,985
361.2	Wood Crest Manholes	2004	38,887	64.14%	13,946
361.2	Coventry Greene Manholes	2004	18,355	64.14%	6,583
361.2	Phase 2 Manholes	2008	406,599	64.14%	145,821
361.2	Coventry Glen Manholes	2011	147,401	64.14%	52,863
361.2	Elementary School Manholes	2016	56,034	64.14%	20,096
361.2	Whispering Woods Manholes	2017	51,847	64.14%	18,594
			1,034,355		370,957
363	Phase 1 Gravity Service Connectio	2004	13,723	64.14%	4,922
363	Orchard Ridge Gravity Service Cor	2004	28,255	64.14%	10,133
363	Heather Glen Gravity Service Conr	2004	35,249	64.14%	12,642
363	Creek View Gravity Service Conne	2004	19,436	64.14%	6,970
363	Wood Crest Gravity Service Conne	2004	6,896	64.14%	2,473
363	Coventry Greene Gravity Service C	2004	15,305	64.14%	5,489
363	Phase 2 Gravity Service Connectio	2008	386,406	64.14%	138,579
363	Phase 2 Pressure Sewer Service C	2008	33,393	64.14%	11,976
363	Coventry Glen Gravity Service Con	2011	366,683	64.14%	131,506
363	Elementary School Gravity Service	2016	15,274	64.14%	5,478
363	Whispering Woods Gravity Service	2017	104,505	64.14%	37,479
			1,025,125		367,647

36	37	38	39	40	41

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Fair Market Value

(36)	(37)	(38)	(39)	(40)	(41)
Account	Description	Placement Year	Preliminary Cost Approach	Economic Obsolescence	Fair Market Value
			CORLD $s	% of Preliminary Cost Approach	Appraisal Date Value $s
Input	Input	Input	Calculation	Input	Calculation
Eng Assmnt	Eng Assmnt	Eng Assmnt	Col (31)	WADS Economic Obsolescence Analysis	(39) * [1.00-Col (40)]
Account	Description	Year	Prelim CORLD	EO%	FMV
353 1	Grantor	2024	923	64.14%	331
353 2	Grantee	2019	923	64.14%	331
353 3	Grantee	2019	923	64.14%	331
353 4	Grantee	2007	923	64.14%	331
353 5	Grantee	2007	923	64.14%	331
353 6	Grantee	2007	923	64.14%	331
353 7	Grantee	2007	923	64.14%	331
353 8	Grantee	2007	923	64.14%	331
353 9	Assignee	2007	923	64.14%	331
353 10	Assignee	2007	923	64.14%	331
353 11	Assignee	2007	923	64.14%	331
353 12	Grantee	2006	923	64.14%	331
353 13	Grantee	2022	923	64.14%	331
353 14	Grantee	2005	923	64.14%	331
353 15	Grantee	2007	923	64.14%	331
353.1 16	Party	2004	4,204,796	64.14%	1,507,995
			4,218,641		1,512,960
			19,518,322		6,999,989

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Depreciation & Obsolescence

WADS 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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

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)		(7)
		(4a)	(4b)		(6a)	(6b)	
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	RCNLD Economic Obsolescence	Tax Depreciation		OCLD Economic Obsolescence
			years	% of CORLD	Table	Life	% of CORLD
353.00	Land & Land Rights	ZNonDep	0.00	64.14%	Non-Depr	0.00	1.00%
353.10	Treatment Contract	R2.0	45.00	64.14%	MACRS	25.00	1.00%
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	64.14%	MACRS	25.00	1.00%
355.30	Generating Equipment - Pumping	R3.0	35.00	64.14%	MACRS	25.00	1.00%
360.10	Collection Sewers - Force - Mains	R3.0	75.00	64.14%	MACRS	25.00	1.00%
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	64.14%	MACRS	25.00	1.00%
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	64.14%	MACRS	25.00	1.00%
363.00	Service Laterals	R3.0	50.00	64.14%	MACRS	25.00	1.00%
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	64.14%	MACRS	25.00	1.00%
371.40	Pumping Equipment - Treatment	R3.0	35.00	64.14%	MACRS	25.00	1.00%
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	64.14%	MACRS	25.00	1.00%
389.30	Other Plant & Misc Equip	R3.0	45.00	64.14%	MACRS	25.00	1.00%

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Original Cost less Depreciation

WADS 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
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

(43)	(44)	(46)	(47)	(48)	(49)	(53)	(54)	(55)	(56)	(57)
Account	Description	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 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
WAD Input	Eng Assmnt	Eng Assmnt	WAD Input	WAD Input			Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)
Acct	Descrip	Original Cost	Iowa	Normal Life	age	Rem Life	Total Life	Theo%	Theo Reserve	Net Book
353.00	Land & Land Rights	12	ZNonDep	-	13.67	-	13.67	-	-	12
353.10	Treatment Contract	2,353,000	R2.0	45.00	19.50	28.68	48.18	0.40	952,330	1,400,670
354.30	Stuctures & Improvements - Pumping	795,310	R4.0	45.00	18.52	26.91	45.43	0.41	324,206	471,104
355.30	Generating Equipment - Pumping	145,578	R3.0	35.00	18.00	18.42	36.43	0.49	71,901	73,677
360.10	Collection Sewers - Force - Mains	609,828	R3.0	75.00	18.94	56.73	75.67	0.25	152,618	457,210
361.10	Collection Sewers - Gravity - Mains	5,029,881	R2.5	80.00	15.93	65.49	81.42	0.20	983,336	4,046,545
361.20	Collection Sewers - Gravity - Manholes	764,192	S2.0	75.00	15.43	59.54	74.97	0.21	157,169	607,023
363.00	Service Laterals	863,916	R3.0	50.00	13.73	36.85	50.58	0.27	234,276	629,640
364.30	Flow Measuring Devices - Pumping	37,733	S2.0	30.00	18.26	13.73	31.99	0.57	21,502	16,231
371.30	Pumping Equipment	315,824	R3.0	35.00	18.23	18.23	36.45	0.50	157,802	158,022
380.40	Treatment and Disposal Equipment Chemical Feed Systems	207,929	R2.0	45.00	18.21	29.71	47.92	0.38	78,956	128,973
389.30	Other Plant & Misc Equip	675,559	R3.0	45.00	18.14	28.09	46.23	0.39	264,994	410,565
	Total Borough of Brentwood Wastewater Utility	**11,798,761**							**3,399,090**	**8,399,671**
Grand Total	Grand Total	11,798,761		63.34	17.04	47.83	64.87	0.29	3,399,090	8,399,671
		-							-	-

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Pennsylvania American Water Company																		
East Coventry Township																		
Sanitary Sewer System																		
Investor-Owned Utility																		
As of February 24, 2024																		
Determination of the Depreciated Original Cost																		
(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
WADS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	WADS Input	WADS Input	2024-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
354.3	Pump Station No. 1 Structures	2004	247,284	R4.0	45	19.50	43	R4.0043	0.57696	25.96	45.46	0.42895	106,072	141,212	4,822,038	6,419,493	11,241,531	11,127,780
355.3	Pump Station No. 1 Generator	2004	28,326	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	15,084	13,242	552,357	484,941	1,037,298	991,410
360.1	Pump Station No. 1 Force Main	2004	129,390	R3.0	75	19.50	26	R3.0026	0.74986	56.24	75.74	0.25746	33,313	96,077	2,523,105	7,276,894	9,799,999	9,704,250
364.3	Pump Station No. 1 Flow Meter	2004	6,973	S2.0	30	19.50	65	S2.0065	0.42974	12.89	32.39	0.60204	4,198	2,775	135,974	89,882	225,855	209,190
371.3	Pump Station No. 1 Pumps	2004	74,084	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	39,450	34,634	1,444,838	1,268,318	2,712,956	2,592,940
380.4	Pump Station No. 1 Chemical Feed S	2004	34,863	R2.0	45	19.50	43	R2.0043	0.63735	28.68	48.18	0.40473	14,110	20,753	679,829	999,871	1,679,699	1,568,835
389.3	Pump Station No. 1 Plant & Misc. Eq	2004	148,470	R3.0	45	19.50	43	R3.0043	0.59718	26.87	46.37	0.42053	62,436	86,034	2,895,165	3,989,389	6,884,554	6,681,150
			669,390										274,663	394,727	13,053,106	20,528,788	33,581,892	32,875,555
354.3	Pump Station No. 2 Structures	2004	102,466	R4.0	45	19.50	43	R4.0043	0.57696	25.96	45.46	0.42895	43,953	58,513	1,998,087	2,660,017	4,658,104	4,610,970
355.3	Pump Station No. 2 Generator	2004	18,488	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	9,845	8,643	360,516	316,515	677,031	647,080
360.1	Pump Station No. 2 Force Main	2004	28,800	R3.0	75	19.50	26	R3.0026	0.74986	56.24	75.74	0.25746	7,415	21,385	561,600	1,619,712	2,181,312	2,160,000
364.3	Pump Station No. 2 Flow Meter	2004	6,471	S2.0	30	19.50	65	S2.0065	0.42974	12.89	32.39	0.60204	3,896	2,575	126,185	83,411	209,596	194,130
371.3	Pump Station No. 2 Pumps	2004	36,976	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	19,690	17,286	721,032	633,029	1,354,061	1,294,160
380.4	Pump Station No. 2 Chemical Feed S	2004	36,976	R2.0	45	19.50	43	R2.0043	0.63735	28.68	48.18	0.40473	14,965	22,011	721,032	1,060,472	1,781,504	1,663,920
389.3	Pump Station No. 2 Plant & Misc. Eq	2004	108,623	R3.0	45	19.50	43	R3.0043	0.59718	26.87	46.37	0.42053	45,679	62,944	2,118,149	2,918,700	5,036,849	4,888,035
			338,800										145,443	193,357	6,606,601	9,291,856	15,898,457	15,458,295
354.3	Pump Station No. 3 Structures	2004	127,694	R4.0	45	19.50	43	R4.0043	0.57696	25.96	45.46	0.42895	54,774	72,920	2,490,033	3,314,936	5,804,969	5,746,230
355.3	Pump Station No. 3 Generator	2004	18,895	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	10,062	8,833	368,453	323,482	691,935	661,325
360.1	Pump Station No. 3 Force Main	2004	97,394	R3.0	75	19.50	26	R3.0026	0.74986	56.24	75.74	0.25746	25,075	72,319	1,899,183	5,477,439	7,376,622	7,304,550
364.3	Pump Station No. 3 Flow Meter	2004	7,086	S2.0	30	19.50	65	S2.0065	0.42974	12.89	32.39	0.60204	4,266	2,820	138,177	91,339	229,516	212,580
371.3	Pump Station No. 3 Pumps	2004	37,790	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	20,123	17,667	736,905	646,965	1,383,870	1,322,650
380.4	Pump Station No. 3 Chemical Feed S	2004	37,790	R2.0	45	19.50	43	R2.0043	0.63735	28.68	48.18	0.40473	15,295	22,495	736,905	1,083,817	1,820,722	1,700,550
389.3	Pump Station No. 3 Plant & Misc. Eq	2004	95,745	R3.0	45	19.50	43	R3.0043	0.59718	26.87	46.37	0.42053	40,264	55,481	1,867,028	2,572,668	4,439,696	4,308,525
			422,394										169,859	252,535	8,236,684	13,510,646	21,747,330	21,256,410
354.3	Pump Station No. 4 Structures	2004	123,337	R4.0	45	19.50	43	R4.0043	0.57696	25.96	45.46	0.42895	52,905	70,432	2,405,072	3,201,829	5,606,900	5,550,165
355.3	Pump Station No. 4 Generator	2004	25,381	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	13,515	11,866	494,930	434,523	929,452	888,335
360.1	Pump Station No. 4 Force Main	2004	268,980	R3.0	75	19.50	26	R3.0026	0.74986	56.24	75.74	0.25746	69,252	199,728	5,245,110	15,127,435	20,372,545	20,173,500
364.3	Pump Station No. 4 Flow Meter	2004	5,467	S2.0	30	19.50	65	S2.0065	0.42974	12.89	32.39	0.60204	3,291	2,176	106,607	70,470	177,076	164,010
371.3	Pump Station No. 4 Pumps	2004	66,381	R3.0	35	19.50	56	R3.0056	0.48904	17.12	36.62	0.5325	35,348	31,033	1,294,430	1,136,443	2,430,872	2,323,335
380.4	Pump Station No. 4 Chemical Feed S	2004	31,238	R2.0	45	19.50	43	R2.0043	0.63735	28.68	48.18	0.40473	12,643	18,595	609,141	895,906	1,505,047	1,405,710
389.3	Pump Station No. 4 Plant & Misc. Eq	2004	93,196	R3.0	45	19.50	43	R3.0043	0.59718	26.87	46.37	0.42053	39,192	54,004	1,817,322	2,504,177	4,321,499	4,193,820
			613,980										226,146	387,834	11,972,612	23,370,783	35,343,391	34,698,875
354.3	Pump Station No. 5 Structures	2008	194,529	R4.0	45	15.50	34	R4.0034	0.66313	29.84	45.34	0.34186	66,502	128,027	3,015,200	5,804,745	8,819,945	8,753,805
355.3	Pump Station No. 5 Generator	2008	54,488	R3.0	35	15.50	44	R3.0044	0.58858	20.6	36.1	0.42936	23,395	31,093	844,564	1,122,453	1,967,017	1,907,080
360.1	Pump Station No. 5 Force Main	2008	85,264	R3.0	75	15.50	21	R3.0021	0.79673	59.75	75.25	0.20598	17,563	67,701	1,321,592	5,094,524	6,416,116	6,394,800
364.3	Pump Station No. 5 Flow Meter	2008	11,736	S2.0	30	15.50	52	S2.0052	0.51950	15.59	31.09	0.49855	5,851	5,885	181,908	182,964	364,872	352,080
371.3	Pump Station No. 5 Pumps	2008	100,593	R3.0	35	15.50	44	R3.0044	0.58858	20.6	36.1	0.42936	43,191	57,402	1,559,192	2,072,216	3,631,407	3,520,755
380.4	Pump Station No. 5 Chemical Feed S	2008	67,062	R2.0	45	15.50	34	R2.0034	0.70812	31.87	47.37	0.32721	21,943	45,119	1,039,461	2,137,266	3,176,727	3,017,790
389.3	Pump Station No. 5 Plant & Misc. Eq	2008	229,525	R3.0	45	15.50	34	R3.0034	0.67660	30.45	45.95	0.33732	77,423	152,102	3,557,630	6,989,021	10,546,651	10,328,603
			743,197										255,868	487,329	11,519,547	23,403,189	34,922,735	34,274,913
			2,787,761										1,071,979	1,715,782	51,388,550	90,105,262	141,493,805	138,564,048
361.1	Phase 1 Gravity Sewer	2004	778,865	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	185,580	593,285	15,187,868	48,554,444	63,742,312	62,309,200

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Pennsylvania American Water Company																		
East Coventry Township																		
Sanitary Sewer System																		
Investor-Owned Utility																		
As of February 24, 2024																		
Determination of the Depreciated Original Cost																		
(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
WADS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	WADS Input	WADS Input	2024-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
361.1	Orchard Ridge Gravity Sewer	2004	133,917	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	31,908	102,009	2,611,383	8,348,392	10,959,775	10,713,368
361.1	Heather Glen Gravity Sewer	2004	66,600	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	15,869	50,731	1,298,700	4,151,844	5,450,544	5,328,000
361.1	Creek View Gravity Sewer	2004	172,450	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	41,090	131,360	3,362,775	10,750,533	14,113,308	13,796,000
361.1	Wood Crest Gravity Sewer	2004	46,046	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	10,971	35,075	897,897	2,870,508	3,768,405	3,683,680
361.1	Coventry Greene Gravity Sewer	2004	103,688	R2.5	80	19.50	24	R2.5024	0.77923	62.34	81.84	0.23827	24,706	78,982	2,021,916	6,463,910	8,485,826	8,295,040
361.1	Phase 2 Gravity Sewer	2008	2,974,198	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	566,198	2,408,000	46,100,069	196,059,130	242,159,199	237,935,838
361.1	Phase 2 Pressure Sewer	2008	75,467	R2.5	80	15.50	19	R2.5019	0.82402	65.92	81.42	0.19037	14,367	61,100	1,169,739	4,974,785	6,144,523	6,037,360
361.1	Coventry Glen Gravity Sewer	2011	491,660	R2.5	80	12.50	16	R2.5016	0.85124	68.1	80.6	0.15509	76,252	415,408	6,145,750	33,482,046	39,627,796	39,332,800
361.1	Elementary School Gravity Sewer	2016	106,670	R2.5	80	7.50	9	R2.5009	0.91563	73.25	80.75	0.09286	9,908	96,762	800,025	7,813,578	8,613,603	8,533,600
361.1	Whispering Woods Gravity Sewer	2017	80,320	R2.5	80	6.50	8	R2.5008	0.92492	73.99	80.49	0.08076	6,487	73,833	522,080	5,942,877	6,464,957	6,425,600
			5,029,881										983,336	4,046,545	80,118,202	329,412,047	409,530,248	402,390,486
361.2	Phase 1 Manholes	2004	65,200	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	16,900	48,300	1,271,400	3,633,596	4,904,996	4,890,000
361.2	Orchard Ridge Manholes	2004	34,852	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	9,034	25,818	679,622	1,942,324	2,621,946	2,613,930
361.2	Heather Glen Manholes	2004	30,000	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	7,776	22,224	585,000	1,671,900	2,256,900	2,250,000
361.2	Creek View Manholes	2004	82,820	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	21,468	61,352	1,614,990	4,615,559	6,230,549	6,211,500
361.2	Wood Crest Manholes	2004	26,260	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	6,807	19,453	512,070	1,463,470	1,975,540	1,969,500
361.2	Coventry Greene Manholes	2004	12,395	S2.0	75	19.50	26	S2.0026	0.74306	55.73	75.23	0.25921	3,213	9,182	241,703	690,773	932,476	929,625
361.2	Phase 2 Manholes	2008	313,631	S2.0	75	15.50	21	S2.0021	0.79128	59.35	74.85	0.20708	64,947	248,684	4,861,281	18,614,000	23,475,280	23,522,325
361.2	Coventry Glen Manholes	2011	114,034	S2.0	75	12.50	17	S2.0017	0.83052	62.29	74.79	0.16713	19,059	94,975	1,425,425	7,103,178	8,528,603	8,552,550
361.2	Elementary School Manholes	2016	44,000	S2.0	75	7.50	10	S2.0010	0.90005	67.5	75	0.1	4,400	39,600	330,000	2,970,000	3,300,000	3,300,000
361.2	Whispering Woods Manholes	2017	41,000	S2.0	75	6.50	9	S2.0009	0.91003	68.25	74.75	0.08696	3,565	37,435	266,500	2,798,250	3,064,750	3,075,000
			764,192										157,169	607,023	11,787,991	45,503,050	57,291,040	57,314,430
363	Phase 1 Gravity Service Connection	2004	9,850	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	3,759	6,091	192,075	311,260	503,335	492,500
363	Orchard Ridge Gravity Service Conne	2004	20,280	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	7,739	12,541	395,460	640,848	1,036,308	1,014,000
363	Heather Glen Gravity Service Connec	2004	25,300	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	9,654	15,646	493,350	799,480	1,292,830	1,265,000
363	Creek View Gravity Service Connectio	2004	13,950	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	5,323	8,627	272,025	440,820	712,845	697,500
363	Wood Crest Gravity Service Connecti	2004	4,950	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	1,889	3,061	96,525	156,420	252,945	247,500
363	Coventry Greene Gravity Service Cor	2004	10,985	R3.0	50	19.50	39	R3.0039	0.63205	31.6	51.1	0.3816	4,192	6,793	214,208	347,126	561,334	549,250
363	Phase 2 Gravity Service Connection	2008	327,223	R3.0	50	15.50	31	R3.0031	0.70380	35.19	50.69	0.30578	100,058	227,165	5,071,949	11,514,960	16,586,909	16,361,125
363	Phase 2 Pressure Sewer Service Cor	2008	28,278	R3.0	50	15.50	31	R3.0031	0.70380	35.19	50.69	0.30578	8,647	19,631	438,309	995,103	1,433,412	1,413,900
363	Coventry Glen Gravity Service Conne	2011	321,100	R3.0	50	12.50	25	R3.0025	0.75917	37.96	50.46	0.24772	79,543	241,557	4,013,750	12,188,956	16,202,706	16,055,000
363	Elementary School Gravity Service C	2016	12,800	R3.0	50	7.50	15	R3.0015	0.85389	42.69	50.19	0.14943	1,913	10,887	96,000	546,432	642,432	640,000
363	Whispering Woods Gravity Service C	2017	89,200	R3.0	50	6.50	13	R3.0013	0.87314	43.66	50.16	0.12959	11,559	77,641	579,800	3,894,472	4,474,272	4,460,000
			863,916										234,276	629,640	11,863,451	31,835,877	43,699,328	43,195,775

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Determination of the Depreciated Original Cost

43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Account	Description	Placement Year	Original Costs	Retirement Dispersion Iowa-type	Normal Service Life (NSL)	Age at February 24, 2024 Appraisal Date	Age as % of NSL	Iowa Lookup	Iowa Condition Percent of Percent New	Normal Remaining Life	Total Life Expectancy	Theoretical Reserve Percent	Theoretical Reserve	Depreciated Original Cost	OC Weighted Age	OC Weighted Normal Remaining Life	OC Weighted Total Life Expectancy	Normal Service Life (NSL)
Input	Input	Input	Input	Input	Input	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation	Calculation
WADS Input	Eng Assmnt	Eng Assmnt	Eng Assmnt	WADS Input	WADS Input	2024-[(45)+0.5]	Col (49) / (48)	Col (47) & (50)	Lookup Iowa Curves Life Tables @ col (51)	Col (48) * (52)	Col (46) + (53)	Col (53) / (54)	Col (46) * (55)	Col (46) - (56)	Col (46) * (49)	Col (46) * (53)	Col (46) * (54)	Col (46) * (48)
Acct	Descrip	Year	Original Cost	Iowa	Normal Life	age	AgeP	IowaLookup	Iowa Condition	Rem Life	Total Life	Theo%	Theo Reserve	Net Book	OC wtd Age	OC wtd Rem Life	OC wtd Total Life	OC wtd Normal Life
353 1 Grantor		2024	1	ZNonDep	0	0.00	0	ZNonDep000	0.00000	0	0	0	-	1	-	-	-	-
353 2 Grantee		2019	1	ZNonDep	0	4.50	0	ZNonDep000	0.00000	0	4.5	0	-	1	5	-	5	-
353 3 Grantee		2019	1	ZNonDep	0	4.50	0	ZNonDep000	0.00000	0	4.5	0	-	1	5	-	5	-
353 4 Grantee		2007	-	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	-	-	-	-	-
353 5 Grantee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 6 Grantee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 7 Grantee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 8 Grantee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 9 Assignee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 10 Assignee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 11 Assignee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353 12 Grantee		2006	1	ZNonDep	0	17.50	0	ZNonDep000	0.00000	0	17.5	0	-	1	18	-	18	-
353 13 Grantee		2022	-	ZNonDep	0	1.50	0	ZNonDep000	0.00000	0	1.5	0	-	-	-	-	-	-
353 14 Grantee		2005	-	ZNonDep	0	18.50	0	ZNonDep000	0.00000	0	18.5	0	-	-	-	-	-	-
353 15 Grantee		2007	1	ZNonDep	0	16.50	0	ZNonDep000	0.00000	0	16.5	0	-	1	17	-	17	-
353.1 16 Party		2004	2,353,000 2,353,012	R2.0	45	19.50	43	R2.0043	0.63735	28.68	48.18	0.40473	952,330 952,330	1,400,670 1,400,682	45,883,500 45,883,664	67,484,040 67,484,040	113,367,540 113,367,704	105,885,000 105,885,000
			11,798,761										3,399,090	8,399,671	201,041,858	564,340,276	765,382,125	747,349,739

East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Income Approach

WADS 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:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	1,076,411	375,036	525,137	701,375	176,238	50,915	728,086	6,458	(84,084)	0.964	(81,057)	(81,057)
2	1.5	1,210,962	400,603	556,480	810,359	253,879	73,346	775,338	7,266	(45,591)	0.895	(40,804)	(121,861)
3	2.5	1,665,073	429,545	591,927	1,235,528	643,601	185,936	825,858	24,522	199,212	0.831	165,545	43,684
4	3.5	1,873,207	462,182	631,920	1,411,025	779,105	225,083	879,995	11,239	294,708	0.771	227,220	270,904
5	4.5	2,107,358	498,869	676,943	1,608,489	931,546	269,124	938,016	12,644	388,705	0.716	278,313	549,217
6	5.5	2,465,609	504,400	727,521	1,961,209	1,233,688	356,412	1,000,200	19,346	585,251	0.665	389,192	938,409
7	6.5	2,514,921	511,041	676,123	2,003,880	1,327,757	383,589	680,387	2,663	937,241	0.617	578,278	1,516,687
8	7.5	2,565,219	518,729	710,619	2,046,490	1,335,871	385,933	709,066	2,716	948,775	0.573	543,648	2,060,335
9	8.5	2,770,437	527,413	747,829	2,243,024	1,495,195	431,962	739,079	11,081	1,060,902	0.532	564,400	2,624,735
10	9.5	2,825,846	537,045	787,935	2,288,801	1,500,866	433,600	770,490	2,993	1,081,718	0.494	534,369	3,159,104
11	10.5	2,882,363	547,584	831,130	2,334,779	1,503,649	434,404	803,365	3,052	1,093,958	0.459	502,127	3,661,231
12	11.5	3,112,952	558,997	877,623	2,553,955	1,676,332	484,292	837,774	12,452	1,219,437	0.426	519,480	4,180,711
13	12.5	3,175,211	571,254	927,630	2,603,957	1,676,327	484,291	873,790	3,361	1,242,515	0.396	492,036	4,672,747
14	13.5	3,238,715	584,330	981,384	2,654,385	1,673,001	483,330	911,487	3,429	1,256,139	0.367	461,003	5,133,750
15	14.5	3,497,812	598,205	1,039,131	2,899,607	1,860,476	537,492	950,947	13,991	1,397,177	0.341	476,437	5,610,187
16	15.5	3,567,768	615,391	599,320	2,952,377	2,353,057	679,798	276,319	3,778	1,992,482	0.317	631,617	6,241,804
17	16.5	3,639,123	633,094	608,643	3,006,029	2,397,386	692,605	278,393	3,853	2,031,178	0.294	597,166	6,838,970
18	17.5	3,930,253	651,327	618,116	3,278,926	2,660,810	768,708	280,481	15,722	2,214,015	0.273	604,426	7,443,396
19	18.5	4,008,858	670,108	627,740	3,338,750	2,711,010	783,211	282,585	4,244	2,268,710	0.254	576,252	8,019,648
20 and beyond	19.5	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	3.052	7,058,019	15,077,667
								13,826,360					
Age				19.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.235				Net Plant		18,166,302			
PW to Perpetuity = 1/Capitalization Rate				12.987				ADIT		(1,948,763)			
$PW_{(20and Beyond)}$ = PW to Perpetuity * $PW Factor_{(19.5)}$				3.052				Rate Base		16,217,539	0.235	3,811,122	11,830,770
								Annual Plant Construction Inflation Rate		0.0422 Input			
								Plant Inflation over 19.5 years		37,068,612	0.235	8,711,124	16,730,772
								PP	11,975,448				
								OCLD	8,399,671				
								PP/OCLD	1.426				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										26,432,342.47	0.235	6,211,600	14,231,248
								Average					14,467,614

\\aus-dc1\Shared\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 10-11-2024

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024
Discounted Cash Flow Analysis

Discount Rate: 7.70%
Capitalization Rate: 4.53%

(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	4,089,035	689,451	637,515	3,399,584	2,762,069	797,962	284,704	4,330	2,312,588	0.235	543,458	8,563,106
21	20.5	4,416,158	709,375	647,448	3,706,783	3,059,335	883,842	286,840	17,664	2,518,437	0.219	551,538	9,114,644
22	21.5	4,504,481	729,897	657,534	3,774,584	3,117,050	900,516	288,990	4,770	2,580,308	0.203	523,803	9,638,447
23	22.5	4,594,571	751,035	667,781	3,843,536	3,175,755	917,475	291,159	4,865	2,630,037	0.188	494,447	10,132,894
24	23.5	4,962,137	772,807	678,189	4,189,330	3,511,141	1,014,369	293,343	19,848	2,861,770	0.175	500,810	10,633,704
25	24.5	5,061,380	795,232	688,754	4,266,148	3,577,394	1,033,509	295,541	5,359	2,931,739	0.162	474,942	11,108,646
26	25.5	5,162,608	818,329	297,659	4,344,279	4,046,620	1,169,069	297,757	5,467	2,871,986	0.151	433,670	11,542,316
27	26.5	5,575,617	842,119	299,893	4,733,498	4,433,605	1,280,868	299,992	22,303	3,130,335	0.140	438,247	11,980,563
28	27.5	5,687,129	866,624	302,141	4,820,505	4,518,364	1,305,355	302,240	6,021	3,206,889	0.130	416,896	12,397,459
29	28.5	5,800,872	891,863	304,408	4,909,009	4,604,601	1,330,269	304,508	6,142	3,268,090	0.121	395,439	12,792,898
30	29.5	5,916,889	917,860	306,690	4,999,029	4,692,339	1,355,617	306,791	6,265	3,330,356	0.112	373,000	13,165,898
31	30.5	6,035,227	944,636	308,990	5,090,591	4,781,601	1,381,405	309,092	6,391	3,393,703	0.104	352,945	13,518,843
32	31.5	6,155,932	972,216	311,309	5,183,716	4,872,407	1,407,638	311,411	6,517	3,458,150	0.097	335,441	13,854,284
33	32.5	6,279,051	1,000,623	314,610	5,278,428	4,963,818	1,434,047	313,744	6,648	3,523,989	0.090	317,159	14,171,443
34	33.5	6,404,632	1,029,882	317,948	5,374,750	5,056,802	1,460,910	316,100	6,782	3,590,958	0.083	298,050	14,469,493
35	34.5	6,532,725	1,060,019	320,332	5,472,706	5,152,374	1,488,521	318,470	6,917	3,658,798	0.077	281,727	14,751,220
36	35.5	6,663,380	1,091,061	322,734	5,572,319	5,249,585	1,516,605	320,858	7,055	3,727,801	0.072	268,402	15,019,622
37	36.5	6,796,648	1,123,033	325,155	5,673,615	5,348,460	1,545,170	323,264	7,197	3,797,984	0.067	254,465	15,274,087
38	37.5	6,932,581	1,155,964	327,592	5,776,617	5,449,025	1,574,223	325,688	7,341	3,869,365	0.062	239,901	15,513,988
39	38.5	7,071,233	1,189,884	330,051	5,881,349	5,551,298	1,603,770	328,132	7,486	3,941,961	0.058	228,634	15,742,622
40	39.5	7,212,658	1,224,821	332,527	5,987,837	5,655,310	1,633,819	330,594	7,637	4,015,787	0.053	212,837	15,955,459
41	40.5	7,356,911	1,260,806	335,020	6,096,105	5,761,085	1,664,377	333,073	7,790	4,090,865	0.050	204,543	16,160,002
42	41.5	7,504,049	1,297,871	337,534	6,206,178	5,868,644	1,695,451	335,571	7,946	4,167,210	0.046	191,692	16,351,694
43	42.5	7,654,130	1,336,048	352,955	6,318,082	5,965,127	1,723,325	338,085	8,104	4,248,568	0.043	182,688	16,534,382
44	43.5	7,807,213	1,375,371	368,593	6,431,842	6,063,249	1,751,673	340,623	8,267	4,331,279	0.040	173,251	16,707,633
45	44.5	7,963,357	1,415,873	371,358	6,547,484	6,176,126	1,784,283	343,178	8,431	4,411,592	0.037	163,229	16,870,862
46	45.5	8,122,624	1,457,590	374,142	6,665,034	6,290,892	1,817,439	345,751	8,601	4,493,243	0.034	152,770	17,023,632
47	46.5	8,285,076	1,500,559	376,949	6,784,517	6,407,568	1,851,146	348,345	8,772	4,576,254	0.032	146,440	17,170,072
48	47.5	8,450,778	1,544,817	379,776	6,905,961	6,526,185	1,885,415	350,957	8,948	4,660,641	0.029	135,159	17,305,231
49	48.5	8,619,794	1,590,402	382,624	7,029,392	6,646,768	1,920,251	353,589	9,127	4,746,425	0.027	128,153	17,433,384
50	49.5	8,792,190	1,637,354	385,493	7,154,836	6,769,343	1,955,663	356,240	9,309	4,833,624	0.025	120,841	17,554,225
51	50.5	8,968,034	1,685,715	388,386	7,282,319	6,893,933	1,991,657	358,914	9,496	4,922,252	0.024	118,134	17,672,359
52	51.5	9,147,395	1,735,527	391,298	7,411,868	7,020,570	2,028,243	361,605	9,686	5,012,334	0.022	110,271	17,782,630
53	52.5	9,330,343	1,786,834	394,232	7,543,509	7,149,277	2,065,426	364,316	9,878	5,103,889	0.020	102,078	17,884,708
54	53.5	9,516,950	1,839,680	397,190	7,677,270	7,280,080	2,103,215	367,050	10,077	5,196,928	0.019	98,742	17,983,450
55	54.5	9,707,289	1,894,112	400,170	7,813,177	7,413,007	2,141,618	369,804	10,279	5,291,476	0.018	95,247	18,078,697
56	55.5	9,901,435	1,950,176	403,171	7,951,259	7,548,088	2,180,643	372,577	10,484	5,387,555	0.016	86,201	18,164,898
57	56.5	10,099,464	2,007,922	406,193	8,091,542	7,685,349	2,220,297	375,369	10,693	5,485,183	0.015	82,278	18,247,176
58	57.5	10,301,453	2,067,401	409,241	8,234,052	7,824,811	2,260,588	378,186	10,908	5,584,370	0.014	78,181	18,325,357
59	58.5	10,507,482	2,128,664	412,308	8,378,818	7,966,510	2,301,525	381,020	11,125	5,685,148	0.013	73,907	18,399,264
60	59.5	10,717,632	2,191,766	415,402	8,525,866	8,110,464	2,343,113	383,879	11,348	5,787,526	0.156	902,854	19,302,118
								13,607,350					

Age				59.5									
PW(Age) = 1/(1+Discount Rate)$^{(Age)}$				0.012									
PW to Perpetuity = 1/Capitalization Rate				12.987									
PW$_{(20and Beyond)}$ = PW to Perpetuity * PW Factor$_{(19.5)}$				0.156									
								Net Plant		13,032,331			
								ADIT		(1,165,345)			
								Rate Base		11,866,986	0.012	142,404	18,541,668
								Plant Construction Inflation Rate		0.0422 input			
								Plant Inflation over 59.5 years		138,812,647	0.012	1,665,752	20,065,016
								PP	11,975,448				
								RCNLD	19,518,322				
								RCNLD/PP		1.62986153			
										19,341,544.48	0.012	232,099	18,631,363

Water and Wastewater General Information

Appraisal Work Papers

Cost of Capital / Required Return

WADS 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

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	100.0%						7.70%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							4.53%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	Not Applicable	Not Applicable	1.74%
Equity	67%	Market	9.65%	Market	Not Applicable	Not Applicable	6.47%
Total Capital r	100.0%						8.21%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							5.03%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	100.0%						6.84%
Growth (g)						Not Applicable	0.00%
Rate without Growth: [(1+r)/(1+g)]-1							6.84%

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)	-	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Periodic Subscriber Growth																				
Growth	10.5%	10.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	0.0%	0.0%	0.0%	0.0%
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF										91.07%	91.25%	75.30%	31.96%	21.37%	11.88%	-2.05%	-2.80%	-3.55%	-9.50%
Proposed Rate Increase	Calculated in DCF										0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	15.0%	0.0%	0.0%	6.0%
Total Revenue Adjustments	Calculated										12.5%	12.5%	12.5%	37.5%	12.5%	12.5%	17.0%	2.0%	2.0%	8.0%
Base and Forecast	956,810										1,076,411	1,076,411	1,210,962	1,665,073	1,873,207	2,107,358	2,465,609	2,514,921	2,565,219	2,770,437
Operating Expenses											8%	9%	9%	7%	7%	7%	6%	6%	6%	6%
Expense Level 1. Operations Labor	88,077										88,077	97,325	107,544	118,836	131,314	145,102	149,455	153,939	158,557	163,314
Expense Level 1. Operations Labor Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	10.5%	10.5%	10.5%	10.5%	10.5%	3.0%	3.0%	3.0%	3.0%
Expense Level 2. Contract Labor	93,800										89,110	89,110	84,655	80,422	76,401	72,581	65,323	58,791	52,912	47,621
Expense Level 2. Contract Labor Rate of Change		-5.0%	-10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-5.0%	0.0%	-5.0%	-5.0%	-5.0%	-5.0%	-10.0%	-10.0%	-10.0%	-10.0%
Expense Level 3. Treatment	148,000										163,540	163,540	180,712	199,687	220,654	243,823	251,138	258,672	266,432	274,425
Expense Level 3. Treatment Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	3.0%	3.0%	3.0%	3.0%
Expense Level 4. Utilities	22,680										25,061	25,061	27,692	30,600	33,813	37,363	38,484	39,639	40,828	42,053
Expense Level 4. Utilities Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	3.0%	3.0%	3.0%	3.0%
Property Taxes	17,241,425										-	-	-	-	-	-	-	-	-	-
Begin Plant											11,975,450	11,975,450	12,412,737	12,887,740	13,402,211	13,959,976	14,564,689	15,220,651	15,546,091	15,891,758
PT Rate % of beginning net plant	0.000%										0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-										290,799	290,799	300,335	311,387	322,230	333,304	344,238	354,926	363,378	372,189
Total Operating Expenses											656,587	665,835	700,938	740,932	784,412	832,173	848,638	865,967	882,107	899,602
Cost of Operation as % of Revenues (Calculation)											61.0%	61.9%	57.9%	44.5%	41.9%	39.5%	34.4%	34.4%	34.4%	32.5%
Operating Expenses less Depreciation											365,788	375,036	400,603	429,545	462,182	498,869	504,400	511,041	518,729	527,413
Operating Income											419,824	410,576	510,024	924,141	1,088,795	1,275,185	1,616,971	1,648,954	1,683,112	1,870,835
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense											299,277	299,277	292,384	286,472	276,923	267,692	258,769	250,144	241,805	233,745
Interest Exp as % of Debt	5.26%										5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%
Total nonoperating revenues (expenses)	-										299,277.00	299,277.00	292,384.00	286,472.00	276,923.00	267,692.00	258,769.00	250,144.00	241,805.00	233,745.00
Income (loss) before State and Federal Taxes	-										120,547	111,299	217,640	637,669	811,872	1,007,493	1,358,202	1,398,810	1,441,307	1,637,090
State and Federal Taxes	-										34,826	32,154	62,876	184,223	234,550	291,065	392,385	404,116	416,393	472,955
State and Federal Tax Rate	28.89%										28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-										85,721	79,145	154,764	453,446	577,322	716,428	965,817	994,694	1,024,914	1,164,135
Income After Taxes plus Interest											384,998	378,422	447,148	739,918	854,245	984,120	1,224,586	1,244,838	1,266,719	1,397,880
Earnings before Interest, Taxes, Depreciation, & Amortization	-										640,971	637,067	684,607	867,082	941,925	1,026,359	1,176,439	1,195,648	1,213,704	1,297,114
									EBITDA P1	637,067	EBITDA Periods 1-5	831,408								
									EBITDA P1-5	831,408										
									EBITDA P1-13	1,121,619										
Income (loss) before State and Federal Taxes											120,547	111,299	217,640	637,669	811,872	1,007,493	1,358,202	1,398,810	1,441,307	1,637,090
Book Depreciation											(290,799)	(290,799)	(300,335)	(311,387)	(322,230)	(333,304)	(344,238)	(354,926)	(363,378)	(372,189)
Tax Depreciation											-	(525,137)	(556,480)	(591,927)	(631,920)	(676,943)	(727,521)	(676,123)	(710,619)	(747,829)
Difference Tax over Book Depreciation											290,799	(234,338)	(256,146)	(280,540)	(309,691)	(343,639)	(383,283)	(321,197)	(347,241)	(375,640)
Income Adjusted for Tax Depreciation											411,346	(123,039)	(38,505)	357,129	502,182	663,854	974,919	1,077,613	1,094,066	1,261,450
Income Tax Rate											28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes											118,838	(35,546)	(11,124)	103,175	145,080	191,788	281,654	311,322	316,076	364,433
Income After Tax											292,508	(87,493)	(27,381)	253,954	357,102	472,066	693,265	766,291	777,990	897,017
Deferred Income Taxes											84,012	(67,700)	(74,000)	(81,048)	(89,470)	(99,277)	(110,731)	(92,794)	(100,317)	(108,522)
Accumulated Deferred Income Taxes											16,312	(67,700)	(141,700)	(222,748)	(312,218)	(411,495)	(522,226)	(615,020)	(715,337)	(823,859)
Income After Taxes (Book Depreciation)											85,721	79,145	154,764	453,446	577,322	716,428	965,817	994,694	1,024,914	1,164,135
Plus Deferred Taxes											84,012	(67,700)	(74,000)	(81,048)	(89,470)	(99,277)	(110,731)	(92,794)	(100,317)	(108,522)
Plus Interest											299,277	299,277	292,384	286,472	276,923	267,692	258,769	250,144	241,805	233,745
After Tax Income Debt Free											300,986	446,122	521,148	820,966	943,715	1,083,397	1,335,317	1,337,632	1,367,036	1,506,402
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	267,907										301,395	301,395	339,069	466,220	524,498	590,060	690,371	704,178	718,261	775,722
CA as % of Revenues	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance											-	17,241,425.00	17,937,263.00	18,667,778.00	19,446,985.00	20,278,384.00	21,165,725.00	22,113,032.00	22,741,198.00	23,396,472.00
Additions											-	728,086.00	775,338.00	825,858.00	879,995.00	938,016.00	1,000,200.00	680,387.00	709,066.00	739,079.00
											-	-	-	-	-	-	-	-	-	-
Retirements											-	(32,248.00)	(44,823.00)	(46,651.00)	(48,596.00)	(50,675.00)	(52,893.00)	(52,221.00)	(53,792.00)	(55,430.00)
											-	-	-	-	-	-	-	-	-	-
End Balance	17,241,425.00										-	17,937,263.00	18,667,778.00	19,446,985.00	20,278,384.00	21,165,725.00	22,113,032.00	22,741,198.00	23,396,472.00	24,080,121.00
End Balance Check											-	17,937,263.00	18,667,778.00	19,446,985.00	20,278,384.00	21,165,725.00	22,113,032.00	22,741,198.00	23,396,472.00	24,080,121.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				
Begin Balance											-	(5,265,975.00)	(5,524,526.06)	(5,780,037.63)	(6,044,773.67)	(6,318,407.52)	(6,601,036.04)	(6,892,380.62)	(7,195,106.55)	(7,504,713.87)
Depreciation											-	(290,799.06)	(300,334.57)	(311,387.04)	(322,229.85)	(333,303.52)	(344,237.58)	(354,925.93)	(363,378.32)	(372,188.57)
											-	-	-	-	-	-	-	-	-	-
Retirements											-	32,248.00	44,823.00	46,651.00	48,596.00	50,675.00	52,893.00	52,200.00	53,771.00	55,408.00

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	1-5	Periods: 6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
End Balance											-	(5,524,526.06)	(5,780,037.63)	(6,044,773.67)	(6,318,407.52)	(6,601,036.04)	(6,892,380.62)	(7,195,106.55)	(7,504,713.87)	(7,821,494.44)
End Balance Check											-	(5,524,526.06)	(5,780,037.63)	(6,044,773.67)	(6,318,407.52)	(6,601,036.04)	(6,892,380.62)	(7,195,106.55)	(7,504,713.87)	(7,821,494.44)
Net Plant																				
Begin Balance											-	11,975,450.00	12,412,736.94	12,887,740.37	13,402,211.33	13,959,976.48	14,564,688.96	15,220,651.38	15,546,091.45	15,891,758.13
End Balance											-	12,412,736.94	12,887,740.37	13,402,211.33	13,959,976.48	14,564,688.96	15,220,651.38	15,546,091.45	15,891,758.13	16,258,626.56
Total Assest																				
Tax Depreciation of Property, Plant, & Equipment											301,395.00	12,714,131.94	13,226,809.37	13,868,431.33	14,484,474.48	15,154,748.96	15,911,022.38	16,250,269.45	16,610,019.13	17,034,348.56
Total MACRS Depreciation																				
Begin Balance											-									
Depreciation											-	(525,136.71)	(556,480.24)	(591,927.05)	(631,920.47)	(676,942.53)	(727,521.05)	(676,123.19)	(710,619.33)	(747,829.03)
Retirements											-	32,248.00	44,823.00	46,651.00	48,596.00	50,675.00	52,893.00	52,221.00	53,792.00	55,430.00
End Balance											-	(492,888.71)	(511,657.24)	(545,276.05)	(583,324.47)	(626,267.53)	(674,628.05)	(623,902.19)	(656,827.33)	(692,399.03)
End Balance Check											-	(492,888.71)	(511,657.24)	(545,276.05)	(583,324.47)	(626,267.53)	(674,628.05)	(623,902.19)	(656,827.33)	(692,399.03)
Net Plant																				
Begin Balance											-	17,241,425.00	17,937,263.00	18,667,778.00	19,446,985.00	20,278,384.00	21,165,725.00	22,113,032.00	22,741,298.00	23,396,472.00
End Balance											-	17,444,374.29	18,156,120.76	18,901,708.95	19,695,059.53	20,539,457.47	21,438,403.95	22,117,295.81	22,739,644.67	23,387,721.97
Tax											-	(525,136.71)	(556,480.24)	(591,927.05)	(631,920.47)	(676,942.53)	(727,521.05)	(676,123.19)	(710,619.33)	(747,829.03)
Book											-	(290,799.06)	(300,334.57)	(311,387.04)	(322,229.85)	(333,823.52)	(344,237.58)	(354,925.93)	(363,376.32)	(372,188.57)
											-	(234,337.65)	(256,145.67)	(280,540.01)	(309,690.62)	(343,839.01)	(383,283.47)	(321,197.26)	(347,241.01)	(375,640.45)

Balance Statement

Liabilities																				
Current Liabilities																				
Current Liabilities	216,239										243,269	243,269	273,677	376,306	423,345	476,263	557,228	568,372	579,739	626,119
CL as % of Revenues	22.60%	22.60%	22.60%	22.60%	22.60%	22.60%	22.60%	22.60%	22.60%	22.60%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%	22.6%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Beg	5,689,670.00										5,689,670.00	5,689,670.00	5,558,635.00	5,446,237.00	5,264,696.00	5,089,206.00	4,919,566.00	4,755,580.00	4,597,061.00	4,443,826.00
Additional Debt	-											58,621.00	72,890.00							
Debt Repayment											(189,666)	(189,656)	(185,288)	(181,541)	(175,490)	(169,640)	(163,986)	(158,519)	(153,235)	(148,128)
Debt Repayment years	30.00										30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End											5,500,014.00	5,558,635.00	5,446,237.00	5,264,696.00	5,089,206.00	4,919,566.00	4,755,580.00	4,597,061.00	4,443,826.00	4,295,698.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance													67,700	141,700	222,748	312,218	411,495	522,226	615,020	715,337
Additions to Deferred Asset											(84,012)	67,700	74,000	81,048	89,470	99,277	110,731	92,794	100,317	108,522
Total Deferred Tax Liability											(84,012)	67,700	141,700	222,748	312,218	411,495	522,226	615,020	715,337	823,859
Total Liabilities											5,859,771.00	5,869,604.00	5,861,614.00	5,863,750.00	5,824,769.00	5,807,324.00	5,835,034.00	5,780,453.00	5,738,902.00	5,745,676.00
Equity																				
Proportion of Capital	67%																			
Beginning Equity Capital	11,551,755										11,551,755	11,551,755	11,630,900	11,785,664	12,239,110	12,816,432	13,532,861	14,498,678	15,493,372	16,518,286
Additions to Equity (Retained Earnings)											85,721	79,145	154,764	453,446	577,322	716,428	965,817	994,694	1,024,914	1,164,135
Deductions form Equity Dividends	0										0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital											0	0	0	0	0	0	0	0	0	0
Ending Equity Capital											11,637,476	11,630,900	11,785,664	12,239,110	12,816,432	13,532,861	14,498,678	15,493,372	16,518,286	17,682,422
Operating Income											419,824	410,576	510,024	924,141	1,088,795	1,275,185	1,616,971	1,848,954	1,683,112	1,870,835
Return On Equity											3.61%	3.53%	4.33%	7.55%	8.50%	9.42%	11.15%	10.64%	10.19%	10.58%
Total Liabilities & Stockholders Equity											17,296,747	17,500,504	17,647,278	18,102,860	18,641,201	19,340,185	20,333,712	21,273,825	22,257,188	23,428,098
Assets											301,395	12,714,132	13,226,809	13,868,431	14,484,474	15,154,749	15,911,022	16,250,269	16,610,019	17,034,349
Liabilities & Stockholders Equity less Assets												4,786,372	4,420,469	4,234,429	4,156,727	4,185,436	4,422,690	5,023,556	5,647,169	6,393,749
Dividend												4,786,372	4,420,469	4,234,429	4,156,727	4,185,436	4,422,690	5,023,556	5,647,169	6,393,749
Final Stockholder Equity											17,296,747	12,714,132	13,226,809	13,868,431	14,484,474	15,154,749	15,911,022	16,250,269	16,610,019	17,034,349
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures											-	728,086.00	775,338.00	825,858.00	879,995.00	938,016.00	1,000,200.00	680,867.00	709,066.00	739,029.00
Changes to Working Capital																				
Current Assets	267,907										301,395	301,395	339,069	466,220	524,498	590,060	690,371	704,178	718,261	775,722
Current Liabilities	216,239										243,269	243,269	273,677	376,306	423,345	476,263	557,228	568,372	579,739	626,119
Working Capital	51,668										58,126	58,126	65,392	89,914	101,153	113,797	133,143	135,806	138,522	149,603
Changes to Working Capital											6,458	6,458	7,266	24,522	11,239	12,644	19,346	2,663	2,716	11,081
CASH FLOW																				
Income from Operations											384,998	378,422	447,148	739,918	854,245	984,120	1,224,586	1,244,838	1,266,719	1,397,880
Non Cash Expense (depreciation)											290,799	290,799	300,335	311,387	322,230	333,304	344,238	354,926	363,378	372,189
Capital Expenditures												728,086	775,338	825,858	879,995	938,016	1,000,200	680,867	709,066	739,079
Change in Working Capital											6,458	6,458	7,266	24,522	11,239	12,644	19,346	2,663	2,716	11,081
Net Cash Flows											669,339	(65,323)	(35,121)	200,925	285,241	366,764	549,278	916,714	918,315	1,019,909
Period											0.5	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
PW Factor																				
Discount Rate with growth	8.21%										8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%										5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
Period Present Worth Factor (PW)											0.961	0.961	0.888	0.821	0.759	0.701	0.648	0.599	0.553	0.511
PW of Cashflow											643,235	(62,775)	(31,187)	164,959	216,498	257,102	355,932	549,112	507,828	521,173

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Accumulated PW of Cashflows	17,180,123										580,460	(62,775)	(93,962)	70,997	287,495	544,597	900,529	1,449,641	1,957,469	2,478,642
CASH FLOW																				
Income from Operations											292,508	(87,493)	(27,381)	253,954	357,102	472,066	693,265	766,291	777,990	897,017
Depreciation											-	(525,137)	(556,480)	(591,927)	(631,920)	(676,943)	(727,521)	(676,123)	(710,619)	(747,829)
Capital Expenditures											-	728,086	775,338	825,858	879,995	938,016	1,000,200	680,387	709,066	739,079
Change in Working Capital											6,458	6,458	7,266	24,522	11,239	12,644	19,346	2,663	2,716	11,081
Net Cash Flows											286,050	(296,900)	(253,505)	(4,499)	97,788	198,349	401,240	759,364	776,827	894,686
Period											0.5	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5
PW Factor																				
Discount Rate with growth	8.21%										8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%										5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
Period Present Worth Factor (PW)											0.961	0.961	0.888	0.821	0.759	0.701	0.648	0.599	0.553	0.511
PW of Cashflow											274,894	(285,321)	(225,112)	(3,694)	74,221	139,043	260,004	454,859	429,585	457,185
Accumulated PW of Cashflows	15,260,052										(10,427)	(285,321)	(510,433)	(514,127)	(439,906)	(300,863)	(40,859)	414,000	843,585	1,300,770

Rate Case Forecasts																				
Rate Base																				
Plant in Service											17,937,263.00	17,937,263.00	18,667,778.00	19,446,985.00	20,278,384.00	21,165,725.00	22,113,032.00	22,741,198.00	23,396,472.00	24,080,121.00
Accumulated Book Depreciation											(5,524,526.06)	(5,524,526.06)	(5,780,037.63)	(6,044,773.67)	(6,318,407.52)	(6,601,036.04)	(6,892,380.62)	(7,195,106.55)	(7,504,713.87)	(7,821,494.44)
Working Capital											58,126.00	58,126.00	65,392.00	89,914.00	101,153.00	113,797.00	133,143.00	135,806.00	138,522.00	149,603.00
Accumulated Deferred Income Tax											16,312	(67,700)	(141,700)	(222,748)	(312,218)	(411,495)	(522,226)	(615,020)	(715,337)	(823,859)
Rate Base											12,487,174.94	12,403,162.94	12,811,432.37	13,269,377.33	13,748,911.48	14,266,990.96	14,831,568.38	15,066,877.45	15,314,943.13	15,584,370.56
Authorized Return on Rate Base	6.84%										854,123.00	848,376.00	876,302.00	907,625.00	940,426.00	975,862.00	1,014,479.00	1,030,574.00	1,047,542.00	1,065,971.00
O&M Expenses											365,788.00	375,036.00	400,603.00	429,545.00	462,182.00	498,869.00	504,400.00	511,041.00	518,729.00	527,413.00
Book Depreciation											290,799.06	290,799.06	300,334.57	311,387.04	322,229.85	333,303.52	344,237.58	354,925.93	363,378.32	372,188.57
Ratemaking Interest Expense											299,277.00	299,277.00	292,384.00	286,472.00	276,923.00	267,692.00	258,769.00	250,144.00	241,805.00	233,745.00
Revenue Requirement											1,809,987.06	1,813,488.06	1,869,623.57	1,935,029.04	2,001,760.85	2,075,726.52	2,121,885.58	2,146,684.93	2,171,454.32	2,199,317.57
O&M Expenses											365,788.00	375,036.00	400,603.00	429,545.00	462,182.00	498,869.00	504,400.00	511,041.00	518,729.00	527,413.00
Depreciation Expense											290,799.06	290,799.06	300,334.57	311,387.04	322,229.85	333,303.52	344,237.58	354,925.93	363,378.32	372,188.57
Interest											299,277.00	299,277.00	292,384.00	286,472.00	276,923.00	267,692.00	258,769.00	250,144.00	241,805.00	233,745.00
Pretax Income											854,123.00	848,376.00	876,302.00	907,625.00	940,426.00	975,862.00	1,014,479.00	1,030,574.00	1,047,542.00	1,065,971.00
State & Federal Taxes @ 28.89%											246,756.00	245,096.00	253,164.00	262,233.00	271,589.00	281,927.00	293,083.00	297,733.00	302,635.00	307,959.00
After Tax Income											607,367.00	603,280.00	623,138.00	645,412.00	668,737.00	693,935.00	721,396.00	732,841.00	744,907.00	758,012.00
Current Revenue											1,076,411.00	1,076,411.00	1,210,962.00	1,665,073.00	1,873,207.00	2,107,358.00	2,465,609.00	2,514,921.00	2,565,219.00	2,770,437.00
Revenue Requirement											2,056,743.06	2,058,584.06	2,122,787.57	2,197,242.04	2,273,449.85	2,357,653.52	2,414,968.58	2,444,417.93	2,474,089.32	2,507,276.57
Required Revenue Increase											91%	91%	75%	32%	21%	12%	-2%	-3%	-4%	-9%
Income from Operations											384,998	378,422	447,148	739,918	854,245	984,120	1,224,585	1,244,838	1,266,719	1,397,880
Return on Rate Base											3.08%	3.05%	3.49%	5.58%	6.21%	6.90%	8.26%	8.26%	8.27%	8.97%
Required Return	6.84%										6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%
Authorized Return											854,123	848,376	876,302	907,625	940,426	975,862	1,014,479	1,030,574	1,047,542	1,065,971
After-tax Net Income											85,721	79,145	154,764	453,446	577,322	716,428	965,817	994,694	1,024,914	1,164,135
Taxes											34,826	37,154	62,876	184,223	234,550	291,065	392,385	404,116	416,393	472,955
Pre-tax Net Income											120,547	111,299	217,640	637,669	811,872	1,007,493	1,358,202	1,398,810	1,441,307	1,637,090
Interest Expense											(299,277)	(299,277)	(292,384)	286,472	276,923	267,692	258,769	250,144	241,805	233,745
Operating Income											419,824	410,576	510,024	924,141	1,088,795	1,275,185	1,616,971	1,648,954	1,683,112	1,870,835
Operating Expenses											656,587	665,835	700,938	740,932	784,412	832,173	848,638	865,967	882,107	899,602
Revenue Requirement											1,076,411	1,076,411	1,210,962	1,665,073	1,873,207	2,107,358	2,465,609	2,514,921	2,565,219	2,770,437
Required Return											854,123	848,376	876,302	907,625	940,426	975,862	1,014,479	1,030,574	1,047,542	1,065,971
Operating Expenses											656,587	665,835	700,938	740,932	784,412	832,173	848,638	865,967	882,107	899,602
Revenue Requirement											1,510,710	1,514,211	1,577,240	1,648,557	1,724,838	1,808,035	1,863,117	1,896,541	1,929,649	1,965,573
Required Rate Increase											91.07%	91.25%	75.30%	31.98%	21.37%	13.88%	2.05%	-2.80%	3.55%	9.50%
											0	1	2	3	4	5	6	7	8	9
Proposed Rate Increase																				
Rate Increase Scenario	6										0%	0%	0%	25%	0%	0%	15%	0%	0%	6%
	0										0	1	2	3	4	5	6	7	8	9
No increases (Input 2)	2										0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (input 4)	4										0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%
Modest Rate Increases (Input 4)	5								CCORLD	Income										
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (input 6)	6								11,975,447.00	15,077,667.00	0.0%	0.0%	0.0%	35.0%	0.0%	0.0%	15.0%	0.0%	0.0%	6.0%
Required Rate Increases (Input 6)	7										100.0%	100.0%	100.0%	135.0%	135.0%	135.0%	155.3%	155.3%	155.3%	164.6%
	4										0.0%	0.0%	0.0%	0.0%	7.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Changes in Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)												33,488	37,674	127,151	58,278	65,562	100,311	13,807	14,083	57,461
Plant & Equipment																				
Additions (Source negative / Use positive)												728,086	775,338	825,858	879,995	938,016	1,000,200	680,387	709,066	739,079
Liabilities																				
Change in Current Liabilities (Source Positive / Use negative)												27,030	30,408	102,629	47,039	52,918	80,965	11,144	11,367	46,380
Long Term Debt																				
Additional Long Term Debt Source Positive / Use Negative												(58,621.00)	(72,890.00)	-	-	-	-	-	-	-
Principal Paid Long term Debt (Source positive / Use negative)												189,656	185,288	181,541	175,490	169,640	163,986	158,519	153,235	148,128

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	20-26	27-33	34-40	41-46	47-53	54-60	0	1	2	3	4	5	6	7	8	9
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)												79,145	154,764	453,446	577,322	716,428	965,817	994,694	1,024,914	1,164,135
Depreciation (Source positive /use negative)												290,799	300,336	313,387	322,230	333,304	344,238	354,926	363,378	372,189
Current Liabilities (Source Positive)												27,030	30,408	100,629	47,039	52,918	80,965	11,144	11,367	46,380
												396,974	485,507	867,462	946,591	1,102,650	1,391,020	1,360,764	1,399,659	1,582,704
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets. Increase (Use)												33,488	37,674	127,151	58,778	65,562	100,311	13,807	14,083	57,461
Fixed Assets. Assets. Increase (Use)												728,086	775,338	825,858	879,995	938,016	1,000,200	680,387	709,066	739,079
Total Uses of Funds												761,574	813,012	953,009	938,273	1,003,578	1,100,511	694,194	723,149	796,540
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt												(58,621.00)	(72,890.00)							
Repayment of Long Term Debt												(189,656)	(185,288)	(181,541)	(175,490)	(169,640)	(163,986)	(158,519)	(153,235)	(148,128)
Funds fom Equity																				
Dividends Paid (Use)												0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activities												(248,277.00)	(258,178.00)	(181,541.00)	(175,490.00)	(169,640.00)	(163,986.00)	(158,519.00)	(153,235.00)	(148,128.00)
Total Funds Needed												(612,877.00)	(585,683.00)	(267,088.00)	(167,172.00)	(70,568.00)	126,523.00	508,051.00	523,275.00	638,036.00
Financing																				
Debt	33%											202,249.00	193,275.00	88,139.00	55,167.00	23,287.00	(41,753.00)	(167,657.00)	(172,681.00)	(210,552.00)
Equity	67%											410,628.00	392,408.00	178,949.00	112,005.00	47,281.00	(84,770.00)	(340,394.00)	(350,594.00)	(427,484.00)
Funds Provided by Financing												612,877.00	585,683.00	267,088.00	167,172.00	70,568.00	(126,523.00)	(508,051.00)	(523,275.00)	(638,036.00)
												58,621.00	72,890.00							
												166,843.00	207,455.00							

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Periodic Subscriber Growth																				
Growth	10.5%	10.5%	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%
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-10.02%	-10.52%	-15.77%	-16.06%	-16.35%	-21.12%	-22.66%	-24.28%	-29.99%	-31.43%	-32.85%	-37.84%	-39.14%	-40.35%	-44.77%	-45.87%
Proposed Rate Increase	Calculated in DCF				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Total Revenue Adjustments	Calculated				2.0%	2.0%	8.0%	2.0%	2.0%	8.0%	2.0%	2.0%	8.0%	2.0%	2.0%	8.0%	2.0%	2.0%	8.0%	2.0%
Base and Forecast	950,810				2,825,846	2,882,363	3,112,952	3,175,211	3,238,715	3,497,812	3,567,768	3,639,123	3,930,253	4,008,858	4,089,035	4,416,158	4,504,481	4,594,571	4,962,137	5,061,380
Operating Expenses					6%	6%	6%	6%	6%	6%	6%	6%	5%	5%	6%	5%	5%	5%	5%	5%
Expense Level 1. Operations Labor	88,077				168,213	173,259	178,457	183,811	189,325	195,005	200,855	206,881	213,087	219,480	226,064	232,846	239,831	247,026	254,437	262,070
Expense Level 1. Operations Labor Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 2. Contract Labor	93,800				42,859	38,573	34,716	31,244	28,120	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308
Expense Level 2. Contract Labor Rate of Change		-5.0%	-10.0%	0.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Expense Level 3. Treatment	148,000				282,658	291,138	299,872	308,868	318,134	327,678	337,508	347,633	358,062	368,804	379,868	391,264	403,002	415,092	427,545	440,371
Expense Level 3. Treatment Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 4. Utilities	22,680				43,315	44,614	45,952	47,331	48,751	50,214	51,720	53,272	54,870	56,516	58,211	59,957	61,756	63,609	65,517	67,483
Expense Level 4. Utilities Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Property Taxes	17,241,425																			
Begin Plant					16,258,627	16,647,630	17,061,367	17,498,196	17,960,939	18,453,280	18,974,048	18,812,781	18,650,810	18,489,642	18,327,744	18,166,302	18,004,333	17,844,569	17,684,579	17,525,697
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)					381,464	389,606	400,923	411,026	419,124	430,156	437,563	440,341	461,626	444,460	446,123	448,784	448,730	451,126	452,201	452,685
Total Operating Expenses					918,509	937,190	959,920	982,280	1,003,454	1,028,361	1,052,954	1,073,435	1,092,953	1,114,568	1,135,574	1,158,159	1,178,627	1,202,161	1,225,008	1,247,917
Cost of Operation as % of Revenues (Calculation)					32.5%	32.5%	30.8%	30.9%	31.0%	29.4%	29.5%	29.5%	27.8%	27.8%	27.8%	26.2%	26.2%	26.2%	24.7%	24.7%
Operating Expenses less Depreciation					537,045	547,584	558,997	571,254	584,330	598,205	615,391	633,094	631,327	670,108	689,451	709,375	729,897	751,035	772,807	795,232
Operating Income					1,907,337	1,945,173	2,153,032	2,192,931	2,235,261	2,469,451	2,514,814	2,565,688	2,837,300	2,894,290	2,953,461	3,257,999	3,325,854	3,392,410	3,737,129	3,813,463
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					220,954	218,422	211,141	204,103	197,300	190,723	184,366	178,220	172,279	166,537	160,986	155,619	150,432	145,418	140,570	135,885
Interest Exp as % of Debt	5.26%				5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%
Total nonoperating revenues (expenses)					225,954.00	218,422.00	211,141.00	204,103.00	197,300.00	190,723.00	184,366.00	178,220.00	172,279.00	166,537.00	160,986.00	155,619.00	150,432.00	145,418.00	140,570.00	135,885.00
Income (loss) before State and Federal Taxes					1,681,383	1,726,751	1,941,891	1,988,828	2,037,961	2,278,728	2,330,448	2,387,468	2,665,021	2,727,753	2,792,475	3,102,380	3,175,422	3,246,992	3,596,559	3,677,578
State and Federal Taxes	-																			
State and Federal Tax Rate	28.89%				485,751	498,858	561,012	574,572	588,767	658,325	673,266	689,740	769,924	788,048	806,746	896,277	917,379	938,056	1,039,046	1,062,452
					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-				1,195,632	1,227,893	1,380,879	1,414,256	1,449,194	1,620,403	1,657,182	1,697,728	1,895,097	1,939,705	1,985,729	2,206,103	2,258,043	2,308,936	2,557,513	2,615,126
Income After Taxes plus Interest					1,421,586	1,446,315	1,592,020	1,618,359	1,646,494	1,811,126	1,841,548	1,875,948	2,067,376	2,106,242	2,146,715	2,361,722	2,408,475	2,454,354	2,698,061	2,751,011
Earnings before Interest, Taxes, Depreciation, & Amortization					1,317,299	1,337,063	1,431,931	1,454,813	1,476,851	1,582,957	1,605,845	1,626,549	1,739,078	1,762,654	1,786,092	1,914,229	1,939,826	1,967,424	2,111,238	2,141,244
Income (loss) before State and Federal Taxes					1,681,383	1,726,751	1,941,891	1,988,828	2,037,961	2,278,728	2,330,448	2,387,468	2,665,021	2,727,753	2,792,475	3,102,380	3,175,422	3,246,992	3,596,559	3,677,578
Book Depreciation					(381,464)	(389,606)	(400,923)	(411,026)	(419,124)	(430,156)	(437,563)	(440,341)	(461,626)	(444,460)	(446,123)	(448,784)	(448,730)	(451,126)	(452,201)	(452,685)
Tax Depreciation					(787,935)	(831,330)	(877,623)	(927,630)	(981,384)	(1,039,131)	(599,320)	(608,643)	(618,116)	(627,740)	(637,515)	(647,448)	(657,534)	(667,781)	(678,189)	(688,754)
Difference Tax over Book Depreciation					(606,470)	(441,524)	(476,700)	(516,605)	(562,260)	(608,975)	(161,756)	(168,303)	(176,490)	(183,280)	(191,392)	(198,664)	(208,804)	(216,656)	(225,988)	(236,069)
Income Adjusted for Tax Depreciation					1,274,912	1,285,227	1,465,191	1,472,224	1,475,701	1,669,753	2,168,691	2,219,166	2,488,531	2,544,473	2,601,083	2,903,716	2,966,618	3,030,337	3,370,571	3,441,509
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					368,322	371,302	423,294	425,325	426,330	482,392	626,535	641,117	718,937	735,098	751,453	838,884	857,056	875,464	973,758	994,252
Income After Tax					906,590	913,925	1,041,897	1,046,899	1,049,371	1,187,361	1,542,156	1,578,049	1,769,594	1,809,375	1,849,630	2,064,832	2,109,562	2,154,873	2,396,813	2,447,257
Deferred Income Taxes					(117,429)	(127,556)	(137,718)	(149,247)	(162,437)	(175,933)	(46,731)	(48,623)	(50,987)	(52,950)	(55,293)	(57,393)	(60,323)	(62,592)	(65,288)	(68,200)
Accumulated Deferred Income Taxes					(941,288)	(1,068,844)	(1,206,562)	(1,355,809)	(1,518,246)	(1,694,179)	(1,740,910)	(1,789,533)	(1,840,520)	(1,893,470)	(1,948,763)	(2,006,156)	(2,066,479)	(2,129,071)	(2,194,359)	(2,262,559)
Income After Taxes (Book Depreciation)					1,195,632	1,227,893	1,380,879	1,414,256	1,449,194	1,620,403	1,657,182	1,697,728	1,895,097	1,939,705	1,985,729	2,206,103	2,258,043	2,308,936	2,557,513	2,615,126
Plus Deferred Taxes					(117,429)	(127,556)	(137,718)	(149,247)	(162,437)	(175,933)	(46,731)	(48,623)	(50,987)	(52,950)	(55,293)	(57,393)	(60,323)	(62,592)	(65,288)	(68,200)
Plus Interest					225,954	218,422	211,141	204,103	197,300	190,723	184,366	178,220	172,279	166,537	160,986	155,619	150,432	145,418	140,570	135,885
After Tax Income Debt Free					1,539,015	1,573,871	1,729,738	1,767,606	1,808,931	1,987,059	1,888,279	1,924,571	2,118,363	2,159,192	2,202,008	2,419,115	2,468,798	2,516,946	2,763,371	2,819,211
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	267,902				791,237	807,062	871,627	889,059	906,840	979,367	998,975	1,018,954	1,100,471	1,122,480	1,144,930	1,236,524	1,261,255	1,286,480	1,389,398	1,417,186
CA as % of Revenues	28.00%	28.00%	28.00%	28.00%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					24,080,121.00	24,793,471.00	25,537,913.00	26,314,903.00	27,125,969.00	27,972,704.00	28,856,782.00	29,064,021.00	29,272,815.00	29,483,176.00	29,695,115.00	29,908,643.00	30,123,773.00	30,340,516.00	30,558,885.00	30,778,893.00
Additions					770,490.00	803,365.00	837,774.00	873,790.00	911,487.00	950,947.00	276,319.00	278,393.00	280,681.00	282,585.00	284,704.00	286,840.00	288,990.00	291,159.00	293,343.00	295,541.00
Retirements					(57,140.00)	(58,923.00)	(60,784.00)	(62,724.00)	(64,752.00)	(66,869.00)	(69,080.00)	(69,599.00)	(70,120.00)	(70,646.00)	(71,176.00)	(71,710.00)	(72,247.00)	(72,790.00)	(73,335.00)	(73,885.00)
End Balance	17,241,425.00				24,793,471.00	25,537,913.00	26,314,903.00	27,125,969.00	27,972,704.00	28,856,782.00	29,064,021.00	29,272,815.00	29,483,176.00	29,695,115.00	29,908,643.00	30,123,773.00	30,340,516.00	30,558,885.00	30,778,893.00	31,000,549.00
End Balance Check					24,793,471.00	25,537,913.00	26,314,903.00	27,125,969.00	27,972,704.00	28,856,782.00	29,064,021.00	29,272,815.00	29,483,176.00	29,695,115.00	29,908,643.00	30,123,773.00	30,340,516.00	30,558,885.00	30,778,893.00	31,000,549.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				
Begin Balance					(7,821,494.44)	(8,145,840.83)	(8,476,545.79)	(8,816,706.64)	(9,165,030.39)	(9,519,424.46)	(9,882,734.03)	(10,251,240.30)	(10,622,004.93)	(10,993,534.25)	(11,367,371.28)	(11,742,341.28)	(12,119,439.65)	(12,495,946.70)	(12,874,306.49)	(13,253,196.42)
Depreciation					(381,464.39)	(389,605.96)	(400,922.85)	(411,025.75)	(419,124.07)	(430,155.57)	(437,563.27)	(440,340.63)	(441,626.32)	(444,460.03)	(446,123.00)	(448,784.37)	(448,730.05)	(451,125.79)	(452,200.93)	(452,685.11)
Retirements					57,118.00	58,901.00	60,762.00	62,702.00	64,730.00	66,846.00	69,057.00	69,576.00	70,097.00	70,623.00	71,153.00	71,686.00	72,223.00	72,766.00	73,311.00	73,861.00

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	1-5	Periods 6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
End Balance					(8,145,840.83)	(8,476,545.79)	(8,816,706.64)	(9,165,030.39)	(9,519,424.46)	(9,882,734.03)	(10,251,240.30)	(10,622,004.93)	(10,993,534.25)	(11,367,371.28)	(11,742,341.28)	(12,119,439.65)	(12,495,946.70)	(12,874,306.49)	(13,253,196.42)	(13,632,020.53)
End Balance Check					(8,145,840.83)	(8,476,545.79)	(8,816,706.64)	(9,165,030.39)	(9,519,424.46)	(9,882,734.03)	(10,251,240.30)	(10,622,004.93)	(10,993,534.25)	(11,367,371.28)	(11,742,341.28)	(12,119,439.65)	(12,495,946.70)	(12,874,306.49)	(13,253,196.42)	(13,632,020.53)
Net Plant																				
Begin Balance					16,258,626.56	16,647,630.17	17,061,367.21	17,498,196.36	17,960,938.61	18,453,279.54	18,974,047.97	18,812,780.70	18,650,810.07	18,489,641.75	18,327,743.72	18,166,301.72	18,004,333.35	17,844,569.30	17,684,578.51	17,525,696.58
End Balance					16,647,630.17	17,061,367.21	17,498,196.36	17,960,938.61	18,453,279.54	18,974,047.97	18,812,780.70	18,650,810.07	18,489,641.75	18,327,743.72	18,166,301.72	18,004,333.35	17,844,569.30	17,684,578.51	17,525,696.58	17,368,528.47
Total Assest					17,438,467.17	17,868,429.21	18,369,823.36	18,849,997.61	19,360,119.54	19,953,434.97	19,811,755.70	19,669,764.07	19,590,112.75	19,450,223.72	19,311,231.72	19,240,857.35	19,105,824.30	18,971,058.51	18,915,094.58	18,785,714.47
Tax Depreciation of Property, Plant, & Equipmtne																				
Total MACRS Depreciation																				
Begin Balance																				
Depreciation					(787,934.61)	(831,130.37)	(877,622.71)	(927,630.27)	(981,383.67)	(1,039,130.88)	(599,319.76)	(608,643.20)	(618,116.00)	(627,739.64)	(637,515.48)	(647,447.88)	(657,534.20)	(667,781.44)	(678,188.60)	(688,754.40)
Retirements					57,140.00	58,923.00	60,784.00	62,724.00	64,752.00	66,869.00	69,080.00	69,599.00	70,120.00	70,646.00	71,176.00	71,710.00	72,247.00	72,790.00	73,335.00	73,885.00
End Balance					(730,794.61)	(772,207.37)	(816,838.71)	(864,906.27)	(916,631.67)	(972,261.88)	(530,239.76)	(539,044.20)	(547,996.00)	(557,093.64)	(566,339.48)	(575,737.88)	(585,287.20)	(594,991.44)	(604,853.60)	(614,869.40)
End Balance Check					(730,794.61)	(772,207.37)	(816,838.71)	(864,906.27)	(916,631.67)	(972,261.88)	(530,239.76)	(539,044.20)	(547,996.00)	(557,093.64)	(566,339.48)	(575,737.88)	(585,287.20)	(594,991.44)	(604,853.60)	(614,869.40)
Net Plant																				
Begin Balance					24,080,121.00	24,793,471.00	25,537,913.00	26,314,903.00	27,125,969.00	27,972,704.00	28,856,782.00	29,064,021.00	29,272,819.00	29,483,176.00	29,695,115.00	29,908,643.00	30,123,773.00	30,340,516.00	30,558,885.00	30,778,893.00
End Balance					24,062,676.39	24,765,705.83	25,498,064.29	26,261,062.73	27,056,072.33	27,884,520.12	28,533,781.24	28,733,770.80	28,935,180.00	29,138,021.36	29,342,303.52	29,548,035.12	29,755,228.80	29,964,893.56	30,174,039.40	30,385,679.68
Tax					(787,934.61)	(831,130.37)	(877,622.71)	(927,630.27)	(981,383.67)	(1,039,130.88)	(599,319.76)	(608,643.20)	(618,116.00)	(627,739.64)	(637,515.48)	(647,447.88)	(657,534.20)	(667,781.44)	(678,188.60)	(688,754.40)
Book					(381,464.39)	(389,605.96)	(400,923.45)	(411,025.75)	(419,124.07)	(430,155.57)	(437,563.27)	(440,340.63)	(441,629.32)	(444,460.03)	(446,123.00)	(448,784.37)	(448,730.05)	(451,125.79)	(452,200.93)	(452,645.15)
					(406,470.22)	(441,524.41)	(476,699.86)	(516,604.51)	(562,259.60)	(608,975.31)	(161,756.49)	(168,302.57)	(176,486.68)	(183,279.61)	(191,392.48)	(198,663.51)	(208,804.15)	(216,655.65)	(225,987.67)	(236,089.29)
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	216,239																			
CL as % of Revenues	22.50%	22.60%	22.60%	22.60%	638,641 22.6%	651,414 22.6%	703,527 22.6%	717,598 22.6%	731,950 22.6%	790,506 22.6%	806,316 22.6%	822,442 22.6%	868,237 22.6%	906,002 22.6%	924,122 22.6%	998,052 22.6%	1,018,013 22.6%	1,038,373 22.6%	1,121,443 22.6%	1,143,872 22.6%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Rec	5,689,670.00																			
Additional Debt					4,295,598.00	4,152,508.00	4,014,091.00	3,880,288.00	3,750,945.00	3,625,913.00	3,505,049.00	3,388,214.00	3,275,274.00	3,166,098.00	3,060,561.00	2,958,542.00	2,859,924.00	2,764,593.00	2,672,440.00	2,583,359.00
Debt Repayment					(143,198)	(138,417)	(133,803)	(129,343)	(125,032)	(120,864)	(116,816)	(112,940)	(109,176)	(105,537)	(102,019)	(98,618)	(95,331)	(92,153)	(89,081)	(86,112)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					4,152,508.00	4,014,091.00	3,880,288.00	3,750,945.00	3,625,913.00	3,505,049.00	3,388,214.00	3,275,274.00	3,166,098.00	3,060,561.00	2,958,542.00	2,859,924.00	2,764,593.00	2,672,440.00	2,583,359.00	2,497,247.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					823,859	941,288	1,068,844	1,206,562	1,355,809	1,518,246	1,694,179	1,740,910	1,789,533	1,840,520	1,893,470	1,948,763	2,006,156	2,066,479	2,129,071	2,194,359
Additions to Deferred Asset					117,429	127,556	137,718	149,247	162,437	175,933	46,731	48,623	50,987	52,950	55,293	57,393	60,323	62,592	65,288	68,200
Total Deferred Tax Liability					941,288	1,068,844	1,206,562	1,355,809	1,518,246	1,694,179	1,740,910	1,789,533	1,840,520	1,893,470	1,948,763	2,006,156	2,066,479	2,129,071	2,194,359	2,262,559
Total Liabilities					5,732,437.00	5,734,349.00	5,790,377.00	5,824,352.00	5,876,109.00	5,989,734.00	5,935,440.00	5,887,249.00	5,894,855.00	5,860,033.00	5,831,427.00	5,864,132.00	5,849,085.00	5,839,684.00	5,899,161.00	5,903,678.00
Equity																				
Proportion of Capital	87%																			
Beginning Equity Capital	11,551,755				17,682,422	18,478,051	20,100,946	21,486,825	22,901,082	24,350,276	25,970,679	27,627,861	29,325,589	31,220,686	33,160,991	35,146,370	37,352,222	39,610,265	41,919,202	44,476,715
Additions to Equity (Retained Earnings)					1,195,542	1,727,891	1,380,879	1,414,256	1,449,194	1,620,403	1,657,182	1,697,728	1,895,097	1,939,305	1,985,379	2,206,103	2,258,043	2,308,936	2,557,513	2,615,126
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					18,878,051	20,105,946	21,486,825	22,901,082	24,350,276	25,970,679	27,627,861	29,325,589	31,220,686	33,160,991	35,146,370	37,352,222	39,610,265	41,919,202	44,476,715	47,091,840
Operating Income					1,907,337	1,945,173	2,153,032	2,192,931	2,235,261	2,489,451	2,514,404	2,565,688	2,837,300	2,894,290	2,953,461	3,257,999	3,325,854	3,392,410	3,737,129	3,813,461
Return On Equity					10.10%	9.67%	10.02%	9.58%	9.18%	9.59%	9.10%	8.75%	9.09%	8.73%	8.40%	8.72%	8.40%	8.09%	8.40%	8.10%
Total Liabilities & Stockholders Equity					24,610,490	25,840,295	27,277,202	28,725,434	30,226,385	31,960,413	33,563,301	35,212,838	37,115,541	39,020,424	40,977,547	43,216,354	45,459,350	47,759,086	50,375,876	52,995,518
Assets					17,438,867	17,868,429	18,369,823	18,849,998	19,360,120	19,953,435	19,811,756	19,669,764	19,590,113	19,450,224	19,311,232	19,240,857	19,105,824	18,971,059	18,915,095	18,785,714
Liabilities & Stockholders Equity less Assets					7,171,623	7,971,866	8,907,379	9,875,436	10,866,265	12,006,978	13,751,545	15,543,074	17,525,428	19,570,200	21,666,315	23,975,497	26,353,526	28,788,027	31,460,781	34,209,804
Dividend					7,171,623	7,971,866	8,907,379	9,875,436	10,866,265	12,006,978	13,751,545	15,543,074	17,525,428	19,570,200	21,666,315	23,975,497	26,353,526	28,788,027	31,460,781	34,209,804
Final Stockholder Equity					17,438,867	17,868,429	18,369,823	18,849,998	19,360,120	19,953,435	19,811,756	19,669,764	19,590,113	19,450,224	19,311,232	19,240,857	19,105,824	18,971,059	18,915,095	18,785,714
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					770,490.00	801,365.00	837,774.00	873,790.00	911,487.00	950,947.00	276,319.00	278,393.00	280,481.00	282,585.00	284,704.00	286,840.00	288,990.00	291,159.00	293,343.00	295,541.00
Changes to Working Capital																				
Current Assets	267,907				791,237	807,062	871,827	889,059	906,840	979,387	998,975	1,018,954	1,300,471	1,122,480	1,144,930	1,236,524	1,261,255	1,286,480	1,389,298	1,417,186
Current Liabilities	216,239				638,641	651,414	703,527	717,598	731,950	790,506	806,316	822,442	868,237	906,002	924,122	998,052	1,018,013	1,038,373	1,121,443	1,143,872
Working Capital	51,668				152,596	155,648	168,300	171,461	174,890	188,881	192,659	196,512	432,234	216,478	220,808	238,472	243,242	248,107	267,855	273,314
Changes to Working Capital					2,993	3,052	12,652	3,361	3,429	13,991	3,778	3,853	15,722	4,244	4,330	17,664	4,770	4,865	19,848	5,459
CASH FLOW																				
Income from Operations					1,421,586	1,446,315	1,592,029	1,618,359	1,645,494	1,811,126	1,841,548	1,875,948	2,067,376	2,106,742	2,146,715	2,361,722	2,408,479	2,454,854	2,698,083	2,751,011
Non Cash Expense (depreciation)					381,464	389,606	400,923	411,026	419,124	430,156	437,563	440,341	441,629	444,460	446,123	448,784	448,730	451,126	452,201	452,685
Capital Expenditures					770,490	801,365	837,774	873,790	911,487	950,947	276,319	278,393	280,481	282,585	284,704	286,840	288,990	291,159	293,343	295,541
Change in Working Capital					2,993	3,052	12,452	3,361	3,429	13,991	3,778	3,853	15,722	4,244	4,330	17,664	4,770	4,865	19,848	5,459
Net Cash Flows					1,029,567	1,029,504	1,142,717	1,152,234	1,150,702	1,276,344	1,999,014	2,034,043	2,212,795	2,263,873	2,303,804	2,506,002	2,563,445	2,609,456	2,837,093	2,902,796
Period					9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
Period Present Worth Factor (PW)					0.623	0.597	0.464	0.473	0.345	0.319	0.294	0.272	0.251	0.232	0.215	0.198	0.183	0.169	0.157	0.145
PV of Cashflow					186,981	449,891	461,658	429,783	396,992	407,154	587,710	553,260	555,413	525,259	9,847,414	9,864,722	9,326,385	8,767,483	8,855,467	8,364,021

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	1-9	Periods 6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Accumulated PW of Cashflows	17,180,123				2,966,627	3,415,520	3,877,176	4,306,961	4,703,953	5,111,107	5,698,817	6,252,077	6,807,490	7,332,709	17,180,123	27,044,845	36,371,230	45,138,713	53,994,180	62,362,201
CASH FLOW																				
Income from Operations					900,590	913,925	1,041,897	1,046,899	1,049,371	1,187,361	1,542,156	1,578,049	1,769,594	1,809,375	1,849,630	2,064,832	2,109,562	2,154,873	2,396,813	2,447,257
Depreciation					(787,935)	(831,130)	(877,623)	(927,630)	(981,384)	(1,039,131)	(599,320)	(608,643)	(618,116)	(627,740)	(637,515)	(647,448)	(657,534)	(667,781)	(678,189)	(688,754)
Capital Expenditures					720,490	803,365	837,774	873,790	911,487	950,947	276,319	278,393	280,481	282,585	284,704	286,840	288,990	291,159	293,343	295,541
Change in Working Capital					2,993	3,052	12,452	3,361	3,429	13,991	3,778	3,853	15,722	4,244	4,330	17,664	4,770	4,865	19,848	5,359
Net Cash Flows					921,042	938,638	1,069,294	1,097,378	1,115,839	1,261,554	1,861,379	1,904,446	2,091,507	2,150,286	2,198,111	2,407,776	2,473,336	2,526,630	2,761,811	2,835,111
Period					9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
															19.881	19.881	19.881	19.881	19.881	19.881
Period Present Worth Factor (PW)					0.473	0.437	0.404	0.373	0.345	0.319	0.294	0.272	0.251	0.232	0.215	0.198	0.183	0.169	0.157	0.145
PW of Cashflow					435,653	410,185	431,995	409,322	384,964	402,436	547,245	518,009	524,968	498,866	9,995,639	9,478,061	8,958,548	8,489,196	8,620,488	8,172,902
Accumulated PW of Cashflows	15,260,052				1,736,421	2,146,608	2,578,603	2,987,925	3,372,889	3,775,325	4,322,570	4,840,579	5,365,547	5,864,413	15,260,052	24,738,113	33,736,661	42,225,857	50,846,345	59,019,247

Rate Case Forecasts																				
Rate Base																				
Plant In Service					24,793,471.00	25,537,913.00	26,314,903.00	27,125,969.00	27,972,704.00	28,856,762.00	29,064,021.00	29,272,815.00	29,483,176.00	29,695,115.00	29,908,643.00	30,123,773.00	30,340,516.00	30,558,885.00	30,778,893.00	31,000,549.00
Accumulated Book Depreciation					(8,145,840.83)	(8,476,345.79)	(8,816,706.64)	(9,165,030.39)	(9,519,424.46)	(9,882,734.03)	(10,251,240.30)	(10,622,004.93)	(10,993,534.25)	(11,367,371.28)	(11,742,341.28)	(12,119,439.65)	(12,495,946.70)	(12,874,406.49)	(13,253,196.42)	(13,632,020.53)
Working Capital					152,596.00	155,648.00	168,100.00	171,461.00	174,890.00	188,881.00	192,659.00	196,512.00	212,234.00	216,478.00	220,808.00	238,472.00	243,242.00	248,107.00	267,955.00	273,314.00
Accumulated Deferred Income Tax					(941,288)	(1,068,884)	(1,206,562)	(1,355,809)	(1,518,246)	(1,694,179)	(1,740,910)	(1,789,533)	(1,840,520)	(1,893,470)	(1,948,763)	(2,006,156)	(2,066,479)	(2,129,071)	(2,194,359)	(2,262,559)
Rate Base					15,858,938.17	16,148,371.21	16,459,734.36	16,776,590.61	17,109,923.54	17,468,749.97	17,264,529.70	17,057,789.07	16,861,355.75	16,650,751.72	16,438,346.72	16,236,649.35	16,021,332.30	15,803,614.51	15,599,292.58	15,379,283.47
Authorized Return on Rate Base	6.84%				1,084,751.00	1,104,535.00	1,125,846.00	1,147,519.00	1,170,319.00	1,194,862.00	1,180,894.00	1,166,753.00	1,153,317.00	1,138,911.00	1,124,383.00	1,110,587.00	1,095,859.00	1,080,967.00	1,066,992.00	1,051,943.00
O&M Expenses					537,045.00	547,584.00	558,997.00	571,254.00	584,330.00	598,205.00	615,391.00	633,094.00	651,327.00	670,108.00	689,451.00	709,375.00	729,897.00	751,035.00	772,807.00	795,232.00
Book Depreciation					581,464.39	389,605.96	400,922.85	411,025.75	419,124.07	430,155.57	437,563.27	440,340.63	441,626.32	444,460.03	446,123.00	448,784.37	448,730.05	451,125.79	452,200.93	452,685.11
Ratemaking Interest Expense					225,954.00	218,422.00	211,141.00	204,103.00	197,300.00	190,723.00	184,366.00	178,220.00	172,279.00	166,537.00	160,986.00	155,619.00	150,432.00	145,418.00	140,570.00	135,885.00
Revenue Requirement					2,229,214.39	2,260,146.96	2,296,906.85	2,333,901.75	2,371,073.07	2,413,945.57	2,418,214.27	2,418,407.63	2,418,549.32	2,420,016.03	2,420,943.00	2,424,365.37	2,424,918.05	2,428,545.79	2,432,569.93	2,435,745.11
O&M Expenses					537,045.00	547,584.00	558,997.00	571,254.00	584,330.00	598,205.00	615,391.00	633,094.00	651,327.00	670,108.00	689,451.00	709,375.00	729,897.00	751,035.00	772,807.00	795,232.00
Depreciation Expense					581,464.39	389,605.96	400,922.85	411,025.75	419,124.07	430,155.57	437,563.27	440,340.63	441,626.32	444,460.03	446,123.00	448,784.37	448,730.05	451,125.79	452,200.93	452,685.11
Interest					225,954.00	218,422.00	211,141.00	204,103.00	197,300.00	190,723.00	184,366.00	178,220.00	172,279.00	166,537.00	160,986.00	155,619.00	150,432.00	145,418.00	140,570.00	135,885.00
Pretax Income					1,084,751.00	1,104,535.00	1,125,846.00	1,147,519.00	1,170,319.00	1,194,862.00	1,180,894.00	1,166,753.00	1,153,317.00	1,138,911.00	1,124,383.00	1,110,587.00	1,095,859.00	1,080,967.00	1,066,992.00	1,051,943.00
State & Federal Taxes @ 28.69%					313,385.00	319,100.00	325,257.00	331,518.00	338,105.00	345,196.00	341,160.00	337,075.00	333,193.00	329,031.00	324,834.00	320,849.00	316,594.00	312,291.00	308,254.00	303,906.00
After Tax Income					771,366.00	785,435.00	800,589.00	816,001.00	832,214.00	849,666.00	839,734.00	829,678.00	820,124.00	809,880.00	799,549.00	789,738.00	779,265.00	768,676.00	758,738.00	748,037.00
Current Revenue					2,825,446.00	2,882,363.00	3,112,952.00	3,176,211.00	3,238,715.00	3,497,812.00	3,567,768.00	3,639,123.00	3,930,253.00	4,008,858.00	4,089,035.00	4,416,158.00	4,504,481.00	4,594,571.00	4,962,137.00	5,061,380.00
Revenue Requirement					2,542,599.39	2,579,246.96	2,622,163.85	2,665,419.75	2,709,178.07	2,759,141.57	2,759,374.27	2,755,482.63	2,751,742.32	2,749,047.03	2,745,777.00	2,745,214.37	2,741,512.05	2,740,836.79	2,740,823.93	2,739,651.11
Required Revenue Increase					-10%	-11%	-16%	-16%	-16%	-21%	-23%	-24%	-30%	-31%	-33%	-38%	-39%	-40%	-45%	-46%
Income from Operations					1,421,586	1,446,315	1,592,020	1,618,359	1,646,494	1,811,126	1,841,548	1,875,948	2,067,376	2,108,242	2,146,715	2,361,722	2,408,473	2,454,354	2,698,083	2,751,011
Return on Rate Base					8.96%	8.96%	9.67%	9.65%	9.62%	10.37%	10.67%	11.00%	12.26%	12.66%	13.06%	14.55%	15.03%	15.53%	17.30%	17.89%
Required Return	6.84%				6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%
Authorized Return					1,084,751	1,104,535	1,125,846	1,147,519	1,170,319	1,194,862	1,180,894	1,166,753	1,153,317	1,138,911	1,124,383	1,110,587	1,095,859	1,080,967	1,066,992	1,051,943
After-tax Net Income					1,195,632	1,227,893	1,260,679	1,414,256	1,449,194	1,620,403	1,657,182	1,697,728	1,895,097	1,939,705	1,985,729	2,206,103	2,258,043	2,308,936	2,557,513	2,615,126
Taxes					685,751	698,858	561,012	574,572	588,767	658,325	673,266	689,740	769,924	788,068	806,746	896,277	917,879	938,066	1,039,046	1,062,452
Pre-tax Net Income					1,881,383	1,926,751	1,941,891	1,988,828	2,037,961	2,278,728	2,330,448	2,387,468	2,665,021	2,727,753	2,792,475	3,102,380	3,175,922	3,246,992	3,596,559	3,677,578
Interest Expense					225,954	218,422	211,141	204,103	197,300	190,723	184,366	178,220	172,279	166,537	160,986	155,619	150,432	145,418	140,570	135,885
Operating Income					1,907,337	1,945,173	2,153,032	2,192,931	2,235,261	2,469,451	2,514,814	2,565,688	2,837,300	2,894,290	2,953,461	3,257,999	3,325,854	3,392,410	3,737,129	3,813,463
Operating Expenses					918,509	937,190	959,920	982,280	1,003,454	1,028,361	1,052,954	1,073,435	1,092,953	1,114,568	1,135,574	1,158,159	1,178,627	1,202,161	1,225,008	1,247,917
Revenue Requirement					2,825,846	2,882,363	3,112,952	3,175,211	3,238,715	3,497,812	3,567,768	3,639,123	3,930,253	4,008,858	4,089,035	4,416,158	4,504,481	4,594,571	4,962,137	5,061,380
Required Return					1,084,751	1,104,535	1,125,846	1,147,519	1,170,319	1,194,862	1,180,894	1,166,753	1,153,317	1,138,911	1,124,383	1,110,587	1,095,859	1,080,967	1,066,992	1,051,943
Operating Expenses					918,509	937,190	959,920	982,280	1,003,454	1,028,361	1,052,954	1,073,435	1,092,953	1,114,568	1,135,574	1,158,159	1,178,627	1,202,161	1,225,008	1,247,917
Revenue Requirement					2,003,260	2,041,725	2,085,766	2,129,799	2,173,773	2,223,223	2,233,848	2,240,188	2,246,270	2,253,479	2,259,957	2,268,746	2,274,486	2,283,128	2,292,000	2,299,860
Required Rate Increase					10.02%	10.52%	15.77%	16.06%	16.35%	21.12%	22.66%	24.28%	29.99%	31.43%	32.85%	37.84%	39.14%	40.35%	44.77%	45.87%
					10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Proposed Rate Increase:																				
Rate Increase Scenario	n				0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	6%	0%
	0				10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
No increases (Input 2)	2				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Modest Rate Increases (Input 4)	5																			
Required Rate Increases: 15% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	m				0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%
Required Rate Increases (Input 6)	7				164.6%	164.6%	174.4%	174.4%	174.4%	184.9%	184.9%	184.9%	196.0%	196.0%	196.0%	207.8%	207.8%	207.8%	220.2%	220.2%
	8				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%
Changes in Balance Sheet Accounts																				
Assets:																				
Change in Current Assets (Source negative / Use positive)					15,515	15,825	64,565	17,432	17,781	72,547	19,588	19,979	81,517	22,009	22,450	91,594	24,731	25,225	102,918	27,788
Plant & Equipment																				
Additions (Source negative / Use positive)					720,490	803,365	837,774	873,790	911,487	950,947	276,319	278,393	280,481	282,585	284,704	286,840	288,990	291,159	293,343	295,541
Liabilities:																				
Change in Current Liabilities (Source Positive / Use negative)					12,522	12,773	52,113	14,071	14,352	58,556	15,810	16,126	65,796	17,765	18,120	73,930	19,961	20,360	83,070	22,429
Long Term Debt:																				
Additional Long Term Debt (Source Positive / Use Negative)																				
Principal Paid Long term Debt (Source positive / Use negative)					143,190	138,417	133,803	129,343	125,032	120,864	116,835	112,940	109,176	105,537	102,019	98,618	95,331	92,154	89,081	86,112

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)					1,195,632	1,227,893	1,380,879	1,414,256	1,449,194	1,620,403	1,657,182	1,697,728	1,895,097	1,939,705	1,985,729	2,206,103	2,258,043	2,308,936	2,557,513	2,615,126
Depreciation (Source positive /use negative)					381,464	389,606	400,923	411,026	419,124	430,156	437,563	440,341	441,626	444,460	446,123	448,784	448,730	451,126	452,201	452,685
Current Liabilities (Source Positive)					12,522	12,773	52,113	14,071	14,352	58,556	15,810	16,126	65,795	17,765	18,120	73,930	19,961	20,360	83,070	22,429
					1,589,618	1,630,272	1,833,915	1,839,353	1,882,670	2,109,115	2,110,555	2,154,195	2,402,518	2,401,930	2,449,972	2,728,817	2,726,734	2,780,422	3,092,784	3,090,240
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets. Increase (Use)					15,515	15,825	64,565	17,432	17,781	72,547	19,588	19,979	81,517	22,009	22,450	91,594	24,731	25,225	102,918	27,788
Fixed Assets. Assets: Increase (Use)					770,490	803,365	837,774	873,790	911,487	950,947	276,319	278,393	280,481	282,585	284,704	286,840	288,990	291,159	293,343	295,541
Total Uses of Funds					786,005	819,190	902,339	891,222	929,268	1,023,494	295,907	298,372	361,998	304,594	307,154	378,434	313,721	316,384	396,261	323,329
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repayment of Long Term Debt					(143,190)	(138,417)	(133,803)	(129,343)	(125,032)	(120,864)	(116,835)	(112,940)	(109,176)	(105,537)	(102,019)	(98,618)	(95,331)	(92,153)	(89,081)	(86,112)
Funds fom Equity																				
Dividends Paid (Use)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activies					(143,190.00)	(138,417.00)	(133,803.00)	(129,343.00)	(125,032.00)	(120,864.00)	(116,835.00)	(112,940.00)	(109,176.00)	(105,537.00)	(102,019.00)	(98,618.00)	(95,331.00)	(92,153.00)	(89,081.00)	(86,112.00)
Total Funds Needed					660,423.00	672,665.00	797,773.00	818,786.00	828,370.00	964,757.00	1,697,813.00	1,742,883.00	1,931,344.00	1,991,799.00	2,040,799.00	2,251,765.00	2,317,682.00	2,371,885.00	2,607,442.00	2,680,799.00
Financing																				
Debt	33%				(217,940.00)	(221,979.00)	(263,265.00)	(270,200.00)	(273,362.00)	(318,370.00)	(560,278.00)	(575,151.00)	(637,344.00)	(657,294.00)	(673,464.00)	(743,082.00)	(764,835.00)	(782,722.00)	(860,456.00)	(884,664.00)
Equity	67%				(442,483.00)	(450,686.00)	(534,508.00)	(548,588.00)	(555,008.00)	(646,387.00)	(1,137,535.00)	(1,167,732.00)	(1,294,000.00)	(1,334,505.00)	(1,367,335.00)	(1,508,683.00)	(1,552,847.00)	(1,589,163.00)	(1,746,986.00)	(1,796,135.00)
Funds Provided by Financing					(660,423.00)	(672,665.00)	(797,773.00)	(818,788.00)	(828,370.00)	(964,757.00)	(1,697,813.00)	(1,742,883.00)	(1,931,344.00)	(1,991,799.00)	(2,040,799.00)	(2,251,765.00)	(2,317,682.00)	(2,371,885.00)	(2,607,442.00)	(2,680,799.00)

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Periodic Subscriber Growth																				
Growth	10.5%	10.5%	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%
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-46.74%	-50.47%	-51.21%	-51.93%	-52.65%	-53.29%	-53.96%	-54.61%	-55.21%	-55.80%	-56.38%	-56.93%	-57.45%	-57.94%	-58.43%	-58.88%
Proposed Rate Increase	Calculated in DCF				0.0%	6.0%	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%
Total Revenue Adjustments	Calculated				2.0%	8.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Base and Forecast	956,810				5,162,608	5,575,617	5,687,129	5,800,872	5,916,889	6,035,227	6,155,932	6,279,051	6,404,632	6,532,725	6,663,380	6,796,648	6,932,581	7,071,233	7,212,658	7,356,911
Operating Expenses					5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	6%	6%	6%	6%
Expense Level 1, Operations Labor	88,077				269,932	278,030	286,371	294,962	303,811	312,925	322,313	331,982	341,941	352,199	362,765	373,648	384,857	396,403	408,295	420,544
Expense Level 1, Operations Labor Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 2, Contract Labor	93,800				25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308
Expense Level 2, Contract Labor Rate of Change		-5.0%	-10.0%	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%
Expense Level 3, Treatment	148,000				453,582	467,189	481,205	495,641	510,510	525,825	541,600	557,848	574,583	591,820	609,575	627,862	646,698	666,099	686,082	706,664
Expense Level 3, Treatment Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 4, Utilities	22,680				69,507	71,592	73,740	75,952	78,231	80,578	82,995	85,485	88,050	90,692	93,413	96,215	99,101	102,074	105,136	108,290
Expense Level 4, Utilities Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Property Taxes	17,241,425				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Plant					17,368,528	17,212,822	17,058,933	16,905,520	16,753,126	16,603,002	16,451,717	16,302,537	16,156,008	16,010,353	15,867,075	15,726,094	15,587,624	15,450,913	15,315,910	15,183,188
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)					453,440	453,856	455,628	456,877	456,890	460,352	460,565	460,247	461,728	461,722	461,814	461,707	462,371	463,409	462,989	464,423
Total Operating Expenses					1,271,769	1,295,975	1,322,252	1,348,740	1,374,750	1,404,988	1,432,781	1,460,870	1,491,610	1,521,741	1,552,875	1,584,740	1,618,335	1,653,293	1,687,810	1,725,229
Cost of Operation as % of Revenues (Calculation)					24.6%	23.2%	23.2%	23.3%	23.2%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	23.4%	23.4%	23.5%
Operating Expenses less Depreciation					818,329	842,119	866,624	891,863	917,860	944,636	972,216	1,000,623	1,029,882	1,060,019	1,091,061	1,123,033	1,155,964	1,189,884	1,224,821	1,260,806
Operating Income					3,890,839	4,279,642	4,364,877	4,452,132	4,542,139	4,630,239	4,723,151	4,818,181	4,913,022	5,010,984	5,116,505	5,211,908	5,314,246	5,417,940	5,524,848	5,631,682
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					131,355	126,977	122,744	118,653	114,698	110,874	107,178	103,606	100,152	96,814	93,587	90,467	87,452	84,537	81,719	78,995
Interest Exp as % of Debt	5.26%				5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%
Total nonoperating revenues (expenses)					131,355.00	126,977.00	122,744.00	118,653.00	114,698.00	110,874.00	107,178.00	103,606.00	100,152.00	96,814.00	93,587.00	90,467.00	87,452.00	84,537.00	81,719.00	78,995.00
Income (loss) before State and Federal Taxes					3,759,484	4,152,665	4,242,133	4,333,479	4,427,441	4,519,365	4,615,973	4,714,575	4,812,870	4,914,170	5,016,918	5,121,441	5,226,794	5,333,403	5,443,129	5,552,687
State and Federal Taxes					1,086,115	1,199,705	1,225,552	1,251,942	1,279,088	1,305,645	1,333,555	1,362,041	1,390,438	1,419,704	1,449,388	1,479,584	1,510,021	1,540,820	1,572,320	1,604,171
State and Federal Tax Rate	28.89%				28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes					2,673,369	2,952,960	3,016,581	3,081,537	3,148,353	3,213,720	3,282,418	3,352,534	3,422,432	3,494,466	3,567,530	3,641,857	3,716,773	3,792,583	3,870,609	3,948,516
Income After Taxes plus Interest					2,804,724	3,079,937	3,139,325	3,200,190	3,263,051	3,324,594	3,389,596	3,456,140	3,522,584	3,591,280	3,661,117	3,732,324	3,804,225	3,877,120	3,952,328	4,027,511
Earnings before Interest, Taxes, Depreciation, & Amortization					2,172,049	2,334,088	2,369,401	2,405,125	2,440,853	2,479,301	2,516,606	2,554,346	2,593,874	2,633,298	2,673,543	2,714,447	2,756,575	2,799,709	2,842,797	2,887,763
Income (loss) before State and Federal Taxes					3,759,484	4,152,665	4,242,133	4,333,479	4,427,441	4,519,365	4,615,973	4,714,575	4,812,870	4,914,170	5,016,918	5,121,441	5,226,794	5,333,403	5,443,129	5,552,687
Book Depreciation					(453,440)	(453,856)	(455,628)	(456,877)	(456,890)	(460,352)	(460,565)	(460,247)	(461,728)	(461,722)	(461,814)	(461,707)	(462,371)	(463,409)	(462,989)	(464,423)
Tax Depreciation					(297,659)	(299,893)	(302,141)	(304,408)	(306,690)	(308,990)	(311,309)	(314,610)	(317,948)	(320,332)	(322,734)	(325,155)	(327,592)	(330,051)	(332,527)	(335,020)
Difference Tax over Book Depreciation					155,781	153,963	153,487	152,469	150,200	151,362	149,256	145,637	143,780	141,390	139,080	136,552	134,779	133,358	130,462	129,403
Income Adjusted for Tax Depreciation					3,915,265	4,306,628	4,395,620	4,485,948	4,577,641	4,670,727	4,765,229	4,860,212	4,956,650	5,055,560	5,155,998	5,257,993	5,361,573	5,466,761	5,573,591	5,682,090
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					1,131,120	1,244,185	1,269,895	1,295,990	1,322,480	1,349,373	1,376,675	1,404,115	1,431,976	1,460,551	1,489,568	1,519,034	1,548,958	1,579,347	1,610,211	1,641,556
Income After Tax					2,784,145	3,062,443	3,125,725	3,189,958	3,255,161	3,321,354	3,388,554	3,456,097	3,524,674	3,595,009	3,666,430	3,738,959	3,812,615	3,887,414	3,963,380	4,040,534
Deferred Income Taxes					45,005	44,480	44,343	44,048	43,392	43,728	43,120	42,074	41,538	40,847	40,180	39,450	38,937	38,527	37,691	37,385
Accumulated Deferred Income Taxes					(2,217,554)	(2,173,074)	(2,128,731)	(2,084,683)	(2,041,291)	(1,997,563)	(1,954,443)	(1,912,369)	(1,870,831)	(1,829,984)	(1,789,804)	(1,750,354)	(1,711,417)	(1,672,890)	(1,635,199)	(1,597,814)
Income After Taxes (Book Depreciation)					2,673,369	2,952,960	3,016,581	3,081,537	3,148,353	3,213,720	3,282,418	3,352,534	3,422,432	3,494,466	3,567,530	3,641,857	3,716,773	3,792,583	3,870,609	3,948,516
Plus Deferred Taxes					45,005	44,480	44,343	44,048	43,392	43,728	43,120	42,074	41,538	40,847	40,180	39,450	38,937	38,527	37,691	37,385
Plus Interest					131,355	126,977	122,744	118,653	114,698	110,874	107,178	103,606	100,152	96,814	93,587	90,467	87,452	84,537	81,719	78,995
After Tax Income Debt Free					2,759,719	3,035,457	3,094,982	3,156,142	3,219,659	3,280,866	3,346,476	3,414,066	3,481,046	3,550,433	3,620,937	3,692,874	3,765,288	3,838,593	3,914,637	3,990,126
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	267,907				1,445,530	1,561,173	1,592,396	1,624,244	1,656,729	1,689,864	1,723,661	1,758,134	1,793,297	1,829,163	1,865,746	1,903,061	1,941,123	1,979,945	2,019,544	2,059,935
CA as % of Revenues	28.00%	28.00%	28.00%	28.00%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					31,000,549.00	31,223,866.00	31,448,860.00	31,675,540.00	31,903,921.00	32,134,014.00	32,365,833.00	32,599,392.00	32,834,699.00	33,071,774.00	33,310,626.00	33,551,269.00	33,793,717.00	34,037,981.00	34,284,079.00	34,532,024.00
Additions					297,757.00	299,992.00	302,240.00	304,508.00	306,791.00	309,092.00	311,411.00	313,744.00	316,100.00	318,470.00	320,858.00	323,264.00	325,688.00	328,132.00	330,594.00	333,073.00
Retirements					(74,440.00)	(74,998.00)	(75,560.00)	(76,127.00)	(76,698.00)	(77,273.00)	(77,852.00)	(78,437.00)	(79,025.00)	(79,618.00)	(80,215.00)	(80,816.00)	(81,424.00)	(82,034.00)	(82,649.00)	(83,268.00)
End Balance	17,241,425.00				31,223,866.00	31,448,860.00	31,675,540.00	31,903,921.00	32,134,014.00	32,365,833.00	32,599,392.00	32,834,699.00	33,071,774.00	33,310,626.00	33,551,269.00	33,793,717.00	34,037,981.00	34,284,079.00	34,532,024.00	34,781,829.00
End Balance Check					31,223,866.00	31,448,860.00	31,675,540.00	31,903,921.00	32,134,014.00	32,365,833.00	32,599,392.00	32,834,699.00	33,071,774.00	33,310,626.00	33,551,269.00	33,793,717.00	34,037,981.00	34,284,079.00	34,532,024.00	34,781,829.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				
Begin Balance					(13,632,020.53)	(14,011,044.44)	(14,389,927.25)	(14,770,020.28)	(15,150,794.87)	(15,531,012.21)	(15,914,116.04)	(16,296,854.87)	(16,678,691.19)	(17,061,420.66)	(17,443,550.77)	(17,825,175.39)	(18,206,093.34)	(18,587,067.64)	(18,968,469.19)	(19,348,835.96)
Depreciation					(453,439.91)	(453,855.81)	(455,628.03)	(456,876.59)	(456,890.34)	(460,351.83)	(460,564.83)	(460,247.32)	(461,728.47)	(461,722.11)	(461,813.62)	(461,706.95)	(462,371.30)	(463,408.55)	(462,988.77)	(464,423.27)
Retirements					74,416.00	74,973.00	75,585.00	76,102.00	76,673.00	77,248.00	77,826.00	78,411.00	78,999.00	79,592.00	80,189.00	80,789.00	81,397.00	82,007.00	82,622.00	83,241.00

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	1-5	Periods: 6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
End Balance					(14,011,044.44)	(14,389,927.25)	(14,770,020.28)	(15,150,794.87)	(15,531,012.21)	(15,914,116.04)	(16,296,854.87)	(16,678,691.19)	(17,061,420.66)	(17,443,550.77)	(17,825,175.39)	(18,206,093.34)	(18,587,067.64)	(18,968,469.19)	(19,348,835.96)	(19,730,018.23)
End Balance Check					(14,011,044.44)	(14,389,927.25)	(14,770,020.28)	(15,150,794.87)	(15,531,012.21)	(15,914,116.04)	(16,296,854.87)	(16,678,691.19)	(17,061,420.66)	(17,443,550.77)	(17,825,175.39)	(18,206,093.34)	(18,587,067.64)	(18,968,469.19)	(19,348,835.96)	(19,730,018.23)
Net Plant																				
Begin Balance					17,368,528.47	17,212,821.56	17,058,932.75	16,905,519.72	16,753,126.13	16,603,001.79	16,451,716.96	16,302,537.13	16,156,007.81	16,010,353.34	15,867,075.23	15,726,093.61	15,587,623.66	15,450,913.36	15,315,609.81	15,183,188.04
End Balance					17,212,821.56	17,058,932.75	16,905,519.72	16,753,126.13	16,603,001.79	16,451,716.96	16,302,537.13	16,156,007.81	16,010,353.34	15,867,075.23	15,726,093.61	15,587,623.66	15,450,913.36	15,315,609.81	15,183,188.04	15,051,810.77
Total Assest					18,658,351.56	18,620,105.75	18,497,915.72	18,377,370.13	18,259,730.79	18,141,580.96	18,026,198.13	17,914,141.81	17,803,650.34	17,696,238.23	17,591,839.61	17,490,684.66	17,392,036.36	17,295,554.81	17,202,732.04	17,111,746.77
Tax Depreciation of Property, Plant, & Equipment																				
Total MACRS Depreciation																				
Begin Balance																				
Depreciation					(297,659.00)	(299,893.00)	(302,141.00)	(304,408.00)	(306,690.00)	(308,990.00)	(311,309.00)	(313,609.87)	(317,948.27)	(320,331.93)	(322,733.60)	(325,154.53)	(327,592.47)	(330,050.53)	(332,526.73)	(335,020.07)
Retirements					74,440.00	74,998.00	75,560.00	76,127.00	76,698.00	77,273.00	77,852.00	78,437.00	79,025.00	79,618.00	80,215.60	80,816.00	81,424.00	82,034.00	82,649.00	83,268.00
End Balance					(223,219.00)	(224,895.00)	(226,581.00)	(228,281.00)	(229,992.00)	(231,717.00)	(233,457.00)	(236,172.87)	(238,923.27)	(240,713.93)	(242,518.60)	(244,338.53)	(246,168.47)	(248,016.53)	(249,877.73)	(251,752.07)
End Balance Check					(223,219.00)	(224,895.00)	(226,581.00)	(228,281.00)	(229,992.00)	(231,717.00)	(233,457.00)	(236,172.87)	(238,923.27)	(240,713.93)	(242,518.60)	(244,338.53)	(246,168.47)	(248,016.53)	(249,877.73)	(251,752.07)
Net Plant																				
Begin Balance					31,000,549.00	31,223,856.00	31,448,860.00	31,675,540.00	31,903,921.00	32,134,014.00	32,365,834.00	32,599,392.00	32,834,699.00	33,071,774.00	33,310,626.00	33,551,269.00	33,793,717.00	34,037,981.00	34,284,076.00	34,532,024.00
End Balance					31,000,647.00	31,223,965.00	31,448,959.00	31,675,640.00	31,904,022.00	32,134,116.00	32,365,935.00	32,598,526.13	32,832,850.73	33,069,912.07	33,308,750.40	33,549,378.47	33,791,812.53	34,036,062.47	34,282,146.27	34,530,076.93
Tax					(297,659.00)	(299,893.00)	(302,141.00)	(304,408.00)	(306,690.00)	(308,990.00)	(311,309.00)	(314,609.87)	(317,948.27)	(320,331.93)	(322,733.60)	(325,154.53)	(327,592.47)	(330,050.53)	(332,526.73)	(335,020.07)
Book					(453,439.91)	(453,855.81)	(455,678.03)	(458,676.59)	(456,890.34)	(460,351.83)	(460,564.83)	(460,247.32)	(461,728.47)	(461,722.11)	(461,813.62)	(461,706.95)	(462,171.30)	(463,408.55)	(462,988.77)	(464,423.27)
					155,780.91	153,962.81	153,467.03	152,484.59	150,200.34	151,361.83	149,255.83	145,637.45	143,780.20	141,390.18	139,080.02	136,552.42	134,578.83	133,358.02	130,462.04	129,403.20
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	216,239				1,166,749	1,260,089	1,285,291	1,310,997	1,337,217	1,363,961	1,391,241	1,419,066	1,447,447	1,476,396	1,505,924	1,536,042	1,566,763	1,598,099	1,630,061	1,662,662
CL as % of Revenues	22.60%	22.60%		22.60%	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%	22.6%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Bal	5,689,870.00				2,497,247.00	2,414,005.00	2,333,538.00	2,255,753.00	2,180,561.00	2,107,876.00	2,037,613.00	1,969,693.00	1,904,037.00	1,840,569.00	1,779,217.00	1,719,910.00	1,662,580.00	1,607,161.00	1,553,589.00	1,501,803.00
Additional Debt																				
Debt Repayment					(83,242)	(80,467)	(77,785)	(75,192)	(72,685)	(70,263)	(67,920)	(65,656)	(63,468)	(61,352)	(59,307)	(57,330)	(55,419)	(53,572)	(51,786)	(50,060)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					2,414,005.00	2,333,538.00	2,255,753.00	2,180,561.00	2,107,876.00	2,037,613.00	1,969,693.00	1,904,037.00	1,840,569.00	1,779,217.00	1,719,910.00	1,662,580.00	1,607,161.00	1,553,589.00	1,501,803.00	1,451,743.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					2,262,559	2,217,564	2,173,074	2,128,731	2,084,683	2,041,291	1,997,563	1,954,443	1,912,369	1,870,831	1,829,984	1,789,804	1,750,354	1,711,417	1,672,890	1,635,199
Additions to Deferred Asset					(45,005)	(44,480)	(44,343)	(44,048)	(43,392)	(43,728)	(44,120)	(42,074)	(41,538)	(40,847)	(40,180)	(39,450)	(38,937)	(38,527)	(37,691)	(37,385)
Total Deferred Tax Liability					2,217,554	2,173,074	2,128,731	2,084,683	2,041,291	1,997,563	1,954,443	1,912,369	1,870,831	1,829,984	1,789,804	1,750,354	1,711,417	1,672,890	1,635,199	1,597,814
Total Liabilities					5,798,308.00	5,766,701.00	5,669,775.00	5,576,241.00	5,486,384.00	5,399,137.00	5,315,977.00	5,235,472.00	5,158,847.00	5,086,597.00	5,015,638.00	4,948,976.00	4,885,341.00	4,824,578.00	4,767,063.00	4,712,219.00
Equity																				
Proportion of Capital	69%																			
Beginning Equity Capital	12,851,758				47,091,640	49,765,210	52,718,170	55,734,751	58,816,288	61,964,641	65,178,361	68,460,779	71,813,313	75,235,744	78,730,210	82,297,741	85,939,598	89,656,370	93,448,954	97,319,563
Additions to Equity (Retained Earnings)					2,673,369	2,952,960	3,016,581	3,081,537	3,148,353	3,213,720	3,282,418	3,352,534	3,422,432	3,494,466	3,567,530	3,641,857	3,716,773	3,792,583	3,870,609	3,948,516
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					49,765,210	52,718,170	55,734,751	58,816,288	61,964,641	65,178,361	68,460,779	71,813,313	75,235,744	78,730,210	82,297,741	85,939,598	89,656,370	93,448,954	97,319,563	101,268,079
Operating Income					3,890,839	4,079,642	4,164,877	4,452,132	4,542,139	4,630,239	4,723,151	4,818,181	4,913,022	5,010,984	5,110,525	5,211,908	5,314,246	5,417,940	5,524,848	5,631,682
Return On Equity					7.82%	8.12%	7.83%	7.57%	7.33%	7.10%	6.90%	6.71%	6.53%	6.36%	6.21%	6.06%	5.93%	5.80%	5.68%	5.56%
Total Liabilities & Stockholders Equity					55,563,518	58,484,871	61,404,526	64,392,529	67,451,025	70,577,498	73,776,156	77,048,785	80,394,591	83,815,807	87,313,379	90,888,574	94,541,711	98,273,532	102,086,626	105,980,298
Assets	18,658,352	18,620,106	18,497,916	18,377,370	18,259,731	18,141,581	18,026,198	17,914,142	17,803,650	17,696,238	17,591,840	17,490,685	17,392,036	17,295,555	17,202,732	17,111,746				
Liabilities & Stockholders Equity less Assets	36,905,166	39,864,765	42,906,610	46,015,159	49,191,294	52,435,917	55,749,958	59,134,643	62,590,941	66,119,569	69,721,539	73,397,889	77,149,675	80,977,977	84,883,894	88,868,552				
Dividend	36,905,166	39,864,765	42,906,610	46,015,159	49,191,294	52,435,917	55,749,958	59,134,643	62,590,941	66,119,569	69,721,539	73,397,889	77,149,675	80,977,977	84,883,894	88,868,552				
Final Stockholder Equity	18,658,352	18,620,106	18,497,916	18,377,370	18,259,731	18,141,581	18,026,198	17,914,142	17,803,650	17,696,238	17,591,840	17,490,685	17,392,036	17,295,555	17,202,732	17,111,746				
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					297,757.00	299,992.00	302,240.00	304,508.00	306,791.00	309,092.00	311,411.00	313,744.00	316,100.00	318,470.00	320,858.00	323,264.00	325,688.00	328,132.00	330,594.00	333,073.00
Changes to Working Capital																				
Current Assets	267,907				1,445,530	1,561,173	1,592,396	1,624,244	1,656,729	1,689,864	1,723,661	1,758,134	1,793,297	1,829,163	1,865,746	1,903,061	1,941,123	1,979,945	2,019,544	2,059,935
Current Liabilities	216,239				1,166,749	1,260,089	1,285,291	1,310,997	1,337,217	1,363,961	1,391,241	1,419,066	1,447,447	1,476,396	1,505,924	1,536,042	1,566,763	1,598,099	1,630,061	1,662,662
Working Capital	51,668				278,781	301,084	307,105	313,247	319,512	325,903	332,420	339,068	345,850	352,767	359,822	367,019	374,360	381,846	389,483	397,273
Changes to Working Capital					5,467	22,303	6,021	6,142	6,265	6,391	6,517	6,648	6,782	6,917	7,056	7,197	7,341	7,486	7,637	7,790
CASH FLOW																				
Income from Operations					2,804,724	3,079,917	3,135,325	3,200,190	3,263,050	3,326,594	3,389,598	3,456,160	3,522,584	3,591,280	3,661,117	3,732,324	3,804,223	3,877,220	3,952,328	4,027,513
Non Cash Expense (depreciation)					453,840	454,856	455,628	456,877	456,890	460,352	460,565	460,247	461,728	461,722	461,814	461,707	462,171	463,409	462,989	464,423
Capital Expenditures					297,757	299,992	302,240	304,508	306,791	309,092	311,411	313,744	316,100	318,470	320,858	323,264	325,688	328,132	330,594	333,073
Change in Working Capital					5,467	22,303	6,021	6,142	6,265	6,391	6,517	6,648	6,782	6,917	7,056	7,197	7,341	7,486	7,637	7,790
Net Cash Flows					2,954,940	3,211,498	3,286,692	3,346,417	3,406,885	3,469,463	3,532,233	3,595,995	3,661,430	3,727,615	3,795,018	3,863,570	3,933,567	4,004,951	4,077,086	4,153,072
Period					25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
					19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881
Period Present Worth Factor (PW)					0.134	0.124	0.116	0.106	0.098	0.09	0.083	0.077	0.071	0.066	0.061	0.056	0.052	0.048	0.044	0.041
PW of Cashflow					7,872,220	7,917,126	7,649,070	7,052,192	6,617,764	6,207,675	5,828,619	5,504,882	5,168,295	4,891,175	4,602,374	4,301,452	4,066,569	3,821,839	3,566,486	3,383,629

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base:	1-5	Periods: 6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Accumulated PW of Cashflows	17,180,123				70,234,321	78,151,447	85,600,517	92,652,709	99,290,473	105,498,348	111,326,967	116,831,849	122,000,144	126,891,319	131,493,693	135,795,145	139,861,714	143,683,553	147,250,041	150,633,666
CASH FLOW																				
Income from Operations					2,784,145	3,062,443	3,125,725	3,189,958	3,255,161	3,321,354	3,388,554	3,456,097	3,524,674	3,595,009	3,666,430	3,738,959	3,812,615	3,887,414	3,961,880	4,040,534
Depreciation					(297,659	(299,893)	(302,141)	(304,408)	(306,690)	(308,990)	(311,309)	(314,610)	(317,948)	(320,332)	(322,734)	(325,155)	(327,592)	(330,051)	(332,527)	(335,020)
Capital Expenditures					297,753	299,992	302,240	304,508	306,791	309,092	311,411	313,744	316,100	318,470	320,858	323,264	325,688	328,132	330,594	333,073
Change in Working Capital					5,467	22,303	6,021	6,142	6,265	6,391	6,517	6,648	6,782	6,917	7,055	7,197	7,341	7,486	7,637	7,790
Net Cash Flows					2,778,580	3,040,041	3,119,605	3,183,716	3,248,795	3,314,861	3,381,935	3,450,315	3,519,740	3,589,954	3,661,251	3,733,653	3,807,178	3,881,847	3,957,696	4,034,691
Period					25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
					19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881
Period Present Worth Factor (PW)					0.134	0.124	0.114	0.106	0.098	0.09	0.083	0.077	0.071	0.066	0.061	0.056	0.052	0.048	0.044	0.041
PW of Cashflow					7,402,267	7,494,443	7,070,379	6,709,319	6,329,751	5,931,248	5,580,609	5,281,870	4,968,293	4,710,544	4,440,149	4,164,810	3,945,506	3,794,480	3,462,032	3,288,761
Accumulated PW of Cashflows	15,260,052				66,421,534	73,915,977	80,986,356	87,695,675	94,025,426	99,956,674	105,537,283	110,819,153	115,787,446	120,497,990	124,938,139	129,094,949	133,040,455	136,834,935	140,297,287	143,486,048

Rate Case Forecast:																				
Rate Base:																				
Plant In Service					31,223,866.00	31,448,860.00	31,675,540.00	31,903,921.00	32,134,014.00	32,365,833.00	32,599,392.00	32,834,699.00	33,071,774.00	33,310,626.00	33,551,269.00	33,793,717.00	34,037,981.00	34,284,079.00	34,532,024.00	34,781,829.00
Accumulated Book Depreciation					(14,011,044.44)	(14,349,927.25)	(14,770,020.28)	(15,158,794.87)	(15,531,012.21)	(15,914,116.04)	(16,296,854.87)	(16,678,691.19)	(17,061,420.66)	(17,443,550.77)	(17,825,175.39)	(18,206,093.34)	(18,587,067.64)	(18,968,469.19)	(19,348,835.96)	(19,730,018.23)
Working Capital					278,781.00	301,084.00	307,105.00	313,247.00	319,512.00	325,903.00	332,420.00	339,068.00	345,850.00	352,767.00	359,822.00	367,019.00	374,360.00	381,846.00	389,483.00	397,273.00
Accumulated Deferred Income Tax					(2,217,354)	(2,173,074)	(2,128,731)	(2,084,683)	(2,041,291)	(1,997,563)	(1,954,443)	(1,912,369)	(1,870,431)	(1,829,984)	(1,789,804)	(1,750,854)	(1,711,417)	(1,672,890)	(1,635,199)	(1,597,814)
Rate Base					15,274,048.56	15,186,942.75	15,083,893.72	14,981,690.13	14,881,222.79	14,780,056.96	14,680,514.13	14,582,706.81	14,485,372.34	14,389,858.23	14,296,111.61	14,204,288.66	14,113,456.36	14,024,565.81	13,937,472.04	13,851,269.77
Authorized Return on Rate Base	6.84%				1,044,745.00	1,038,787.00	1,031,738.00	1,024,748.00	1,017,876.00	1,010,956.00	1,004,147.00	997,457.00	990,799.00	984,266.00	977,854.00	971,573.00	965,388.00	959,280.00	953,323.00	947,427.00
D&M Expenses					818,329.00	842,119.00	866,624.00	891,863.00	917,860.00	944,636.00	972,216.00	1,000,623.00	1,029,882.00	1,060,019.00	1,091,061.00	1,123,033.00	1,155,964.00	1,189,884.00	1,224,821.00	1,260,806.00
Book Depreciation					453,419.91	453,855.81	455,628.03	456,876.59	456,890.34	460,351.83	460,564.83	460,247.32	461,728.47	461,722.11	461,813.62	461,706.95	462,371.30	463,408.55	462,988.77	464,423.27
Nonmarketing Interest Expense					131,355.00	126,977.00	122,744.00	118,653.00	114,698.00	110,874.00	107,178.00	103,606.00	100,152.00	96,814.00	93,587.00	90,467.00	87,452.00	84,537.00	81,719.00	78,995.00
Revenue Requirement					2,447,868.91	2,461,738.81	2,476,734.03	2,492,140.59	2,507,324.34	2,526,817.83	2,544,105.83	2,561,933.32	2,582,561.47	2,602,825.11	2,624,315.62	2,646,779.95	2,671,175.30	2,697,109.55	2,722,851.77	2,751,451.27
D&M Expenses					818,329.00	842,119.00	866,624.00	891,863.00	917,860.00	944,636.00	972,216.00	1,000,623.00	1,029,882.00	1,060,019.00	1,091,061.00	1,123,033.00	1,155,964.00	1,189,884.00	1,224,821.00	1,260,806.00
Depreciation Expense					453,419.91	453,855.81	455,628.03	456,876.59	456,890.34	460,351.83	460,564.83	460,247.32	461,728.47	461,722.11	461,813.62	461,706.95	462,371.30	463,408.55	462,988.77	464,423.27
Interest					131,355.00	126,977.00	122,744.00	118,653.00	114,698.00	110,874.00	107,178.00	103,606.00	100,152.00	96,814.00	93,587.00	90,467.00	87,452.00	84,537.00	81,719.00	78,995.00
Pretax Income					1,044,745.00	1,038,787.00	1,031,738.00	1,024,748.00	1,017,876.00	1,010,956.00	1,004,147.00	997,457.00	990,799.00	984,266.00	977,854.00	971,573.00	965,388.00	959,280.00	953,323.00	947,427.00
State & Federal Taxes @ 28.89%					301,827.00	300,106.00	298,069.00	296,050.00	294,064.00	292,065.00	290,098.00	288,165.00	286,242.00	284,354.00	282,502.00	280,687.00	278,901.00	277,136.00	275,415.00	273,712.00
After Tax Income					742,918.00	738,681.00	733,669.00	728,698.00	723,812.00	718,891.00	714,049.00	709,292.00	704,557.00	699,912.00	695,352.00	690,886.00	686,487.00	682,144.00	677,908.00	673,715.00
Current Revenue					5,162,608.00	5,575,617.00	5,687,129.00	5,800,872.00	5,916,889.00	6,035,227.00	6,155,932.00	6,279,051.00	6,404,632.00	6,532,725.00	6,663,380.00	6,796,648.00	6,932,581.00	7,071,233.00	7,212,658.00	7,356,911.00
Revenue Requirement					2,749,695.91	2,761,844.81	2,774,863.03	2,788,190.59	2,801,388.34	2,818,682.83	2,834,203.83	2,850,098.32	2,868,803.47	2,887,175.11	2,906,857.62	2,927,466.95	2,950,076.30	2,974,245.55	2,998,266.77	3,025,363.27
Required Revenue Increase					-47%	-50%	-51%	-52%	-53%	-53%	-54%	-55%	-55%	-56%	-56%	-57%	-57%	-58%	-58%	-59%
Income from Operations					2,804,724	3,079,937	3,139,325	3,200,190	3,263,051	3,324,596	3,389,596	3,456,140	3,522,584	3,591,280	3,661,157	3,732,324	3,804,225	3,877,120	3,952,328	4,027,511
Return on Rate Base					18.36%	20.28%	20.81%	21.36%	21.93%	22.49%	23.09%	23.70%	24.32%	24.96%	25.61%	26.28%	26.95%	27.65%	28.36%	29.08%
Required Return	6.84%				6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%
Authorized Return					1,044,745	1,038,787	1,031,738	1,024,748	1,017,876	1,010,956	1,004,147	997,457	990,799	984,266	977,854	971,573	965,388	959,280	953,323	947,427
Add Tax Net Income					2,673,369	2,952,960	3,016,561	3,081,537	3,148,353	3,213,720	3,282,418	3,352,534	3,422,432	3,494,466	3,567,530	3,641,857	3,716,773	3,792,583	3,870,609	3,948,516
Taxes					1,086,135	1,199,705	1,225,552	1,251,942	1,279,088	1,305,645	1,333,565	1,362,041	1,390,438	1,419,704	1,449,388	1,479,584	1,510,021	1,540,820	1,572,520	1,604,171
Pre-tax Net Income					1,759,484	4,152,665	4,242,113	4,333,479	4,427,441	4,519,365	4,615,973	4,714,575	4,812,870	4,914,170	5,016,918	5,121,441	5,226,794	5,333,403	5,443,129	5,552,687
Interest Expense					131,355	126,977	122,744	118,653	114,698	110,874	107,178	103,606	100,152	96,814	93,587	90,467	87,452	84,537	81,719	78,995
Operating Income					3,890,839	4,279,642	4,364,857	4,452,132	4,542,139	4,630,239	4,723,151	4,818,181	4,913,022	5,010,984	5,110,505	5,211,908	5,314,246	5,417,940	5,524,848	5,631,682
Operating Expenses					1,271,769	1,295,973	1,322,252	1,348,740	1,374,750	1,404,988	1,432,781	1,460,870	1,491,610	1,521,741	1,552,875	1,584,740	1,618,335	1,653,293	1,687,810	1,725,229
Revenue Requirement					5,162,608	5,575,617	5,687,129	5,800,872	5,916,889	6,035,227	6,155,932	6,279,051	6,404,632	6,532,725	6,663,380	6,796,648	6,932,581	7,071,233	7,212,658	7,356,911
Required Return					1,044,745	1,038,787	1,031,738	1,024,748	1,017,876	1,010,956	1,004,147	997,457	990,799	984,266	977,854	971,573	965,388	959,280	953,323	947,427
Operating Expenses					1,271,769	1,295,973	1,322,252	1,348,740	1,374,750	1,404,988	1,432,781	1,460,870	1,491,610	1,521,741	1,552,875	1,584,740	1,618,335	1,653,293	1,687,810	1,725,229
Revenue Requirement					2,316,514	2,334,762	2,353,990	2,373,488	2,392,626	2,415,944	2,436,928	2,458,327	2,482,409	2,506,007	2,530,729	2,556,313	2,583,723	2,612,573	2,641,133	2,672,656
Required Rate Increase					-46.74%	-50.47%	-51.21%	-51.93%	-52.65%	-53.29%	-53.96%	-54.61%	-55.21%	-55.80%	-56.38%	-56.93%	-57.49%	-58.01%	-58.48%	-58.86%
					26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Proposed Rate Increase:																				
Rate Increase Scenario	6				0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0				26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
No increases (Input 2)	2				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	1																			
Modest Rate Increases: 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%
Modest Rate Increases (Input 4)	3																			
Required Rate Increases: 65% period 3, 25% period 6, 6% period 9, 3% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6				0.0%	6.0%	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%
Required Rate Increases: (Input 6)	5				220.2%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%
	4				0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%
Changes in Balance Sheet Accounts																				
Assets																				
Change in Current Assets (Source negative / Use positive)					28,644	115,643	31,223	31,848	32,485	33,135	33,797	34,473	35,163	35,866	36,583	37,315	38,062	38,822	39,599	40,391
Plant & Equipment																				
Additions (Source negative / Use positive)					297,753	299,992	302,240	304,508	306,791	309,092	311,411	313,744	316,100	318,470	320,858	323,264	325,688	328,132	330,594	333,073
Liabilities																				
Change in Current Liabilities (Source Positive / Use negative)					23,977	93,340	25,202	25,706	26,220	26,744	27,280	27,825	28,381	28,949	29,528	30,118	30,721	31,336	31,962	32,601
Long Term Debt																				
Additional Long Term Debt Source Positive / Use Negative																				
Principal Paid Long term Debt (Source positive / Use negative)					83,733	80,467	77,786	75,190	72,685	70,263	67,920	65,656	63,468	61,352	59,307	57,330	55,419	53,572	51,788	50,065

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)					2,673,369	2,952,960	3,016,581	3,061,537	3,148,353	3,213,720	3,282,418	3,352,534	3,422,432	3,494,466	3,567,530	3,641,857	3,716,773	3,792,583	3,870,609	3,948,516
Depreciation (Source positive /use negative)					453,440	453,656	455,628	456,877	456,890	460,352	460,565	460,247	461,728	461,722	461,814	461,707	462,371	453,409	462,989	464,423
Current Liabilities (Source Positive)					22,877	93,340	25,202	25,706	26,220	26,744	27,280	27,825	28,381	28,949	29,528	30,118	30,721	31,336	31,962	32,601
					3,149,686	3,500,156	3,497,411	3,564,120	3,631,463	3,700,816	3,770,263	3,840,606	3,912,541	3,985,137	4,058,872	4,133,682	4,209,865	4,287,328	4,365,560	4,445,540
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets. Increase (Use)					28,344	115,643	31,223	31,848	32,485	33,135	33,797	34,473	35,163	35,866	36,583	37,315	38,062	38,822	39,599	40,391
Fixed Assets. Assets. Increase (Use)					297,757	299,992	302,240	304,508	306,791	309,092	311,411	313,744	316,100	318,470	320,858	323,264	325,688	328,132	330,594	333,073
Total Uses of Funds					326,101	415,635	333,463	336,356	339,276	342,227	345,208	348,217	351,263	354,336	357,441	360,579	363,750	366,954	370,193	373,464
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repayment of Long Term Debt					(83,242)	(80,467)	(77,785)	(75,192)	(72,685)	(70,263)	(67,920)	(65,656)	(63,468)	(61,352)	(59,307)	(57,330)	(55,419)	(53,572)	(51,786)	(50,060)
Funds fom Equity																				
Dividends Paid (Use)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activities					(83,242.00)	(80,467.00)	(77,785.00)	(75,192.00)	(72,685.00)	(70,263.00)	(67,920.00)	(65,656.00)	(63,468.00)	(61,352.00)	(59,307.00)	(57,330.00)	(55,419.00)	(53,572.00)	(51,786.00)	(50,060.00)
Total Funds Needed					2,740,343.00	3,004,054.00	3,086,163.00	3,152,572.00	3,219,502.00	3,288,326.00	3,357,135.00	3,426,733.00	3,497,810.00	3,569,449.00	3,642,124.00	3,715,773.00	3,790,696.00	3,866,802.00	3,943,581.00	4,022,016.00
Financing																				
Debt	33%				(904,313.00)	(991,338.00)	(1,018,434.00)	(1,040,349.00)	(1,062,435.00)	(1,085,148.00)	(1,107,855.00)	(1,130,822.00)	(1,154,277.00)	(1,177,918.00)	(1,201,901.00)	(1,226,205.00)	(1,250,930.00)	(1,276,045.00)	(1,301,382.00)	(1,327,265.00)
Equity	67%				(1,836,030.00)	(2,012,716.00)	(2,067,729.00)	(2,112,223.00)	(2,157,066.00)	(2,203,178.00)	(2,249,280.00)	(2,295,911.00)	(2,343,533.00)	(2,391,531.00)	(2,440,223.00)	(2,489,568.00)	(2,539,766.00)	(2,590,757.00)	(2,642,199.00)	(2,694,751.00)
Funds Provided by Financing					(2,740,343.00)	(3,004,054.00)	(3,086,163.00)	(3,152,572.00)	(3,219,502.00)	(3,288,326.00)	(3,357,135.00)	(3,426,733.00)	(3,497,810.00)	(3,569,449.00)	(3,642,124.00)	(3,715,773.00)	(3,790,696.00)	(3,866,802.00)	(3,943,581.00)	(4,022,016.00)

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Income Statement																				
Revenues																				
Annual Revenue Growth rate																				
Subscriber Growth Rate (Annually)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Periodic Subscriber Growth																				
Growth	10.5%	10.5%	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%
Period for Periodic Growth	5																			
Rate Case Activities																				
Periodic Rate Case (years)	typically 3 years																			
Required Rate Increase	Calculated in DCF				-59.36%	-59.77%	-60.18%	-60.59%	-60.98%	-61.33%	-61.64%	-61.96%	-62.28%	-62.56%	-62.83%	-63.11%	-63.38%	-63.60%	-63.80%	-64.04%
Proposed Rate Increase	Calculated in DCF				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%
Total Revenue Adjustments	Calculated				2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Base and Forecast	956,810				7,504,049	7,654,130	7,807,213	7,963,357	8,122,624	8,285,076	8,450,778	8,619,794	8,792,190	8,968,034	9,147,395	9,330,343	9,516,950	9,707,289	9,901,435	10,099,464
Operating Expenses					6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	7%	7%	7%
Expense Level 1. Operations Labor	88,077				433,160	446,155	459,540	473,326	487,526	502,152	517,217	532,734	548,716	565,177	582,132	599,596	617,584	636,112	655,195	674,851
Expense Level 1. Operations Labor Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 2. Contract Labor	93,800				25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308	25,308
Expense Level 2. Contract Labor Rate of Change		-5.0%	-10.0%	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%
Expense Level 3. Treatment	148,000				727,864	749,700	772,191	795,357	819,218	843,795	869,109	895,182	922,037	949,698	978,189	1,007,535	1,037,761	1,068,894	1,100,961	1,133,990
Expense Level 3. Treatment Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 4. Utilities	22,680				111,539	114,885	118,332	121,882	125,538	129,304	133,183	137,178	141,293	145,532	149,898	154,395	159,027	163,798	168,712	173,773
Expense Level 4. Utilities Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Property Taxes	17,241,425				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Begin Plant					15,051,811	14,925,638	14,800,749	14,677,680	14,555,167	14,439,326	14,325,298	14,211,405	14,098,982	13,989,775	13,882,617	13,777,197	13,675,129	13,577,671	13,481,708	13,386,204
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				461,716	462,946	463,664	465,663	461,563	462,344	464,821	465,983	465,418	466,042	466,995	466,353	464,479	465,736	468,050	465,003
Total Operating Expenses	-				1,759,587	1,798,994	1,839,035	1,881,536	1,919,153	1,962,903	2,009,638	2,056,385	2,102,772	2,151,757	2,202,522	2,253,187	2,304,159	2,359,848	2,418,226	2,472,925
Cost of Operation as % of Revenues (Calculation)					23.4%	23.5%	23.6%	23.6%	23.6%	23.7%	23.8%	23.9%	23.9%	24.0%	24.1%	24.1%	24.2%	24.3%	24.4%	24.5%
Operating Expenses less Depreciation	-				1,297,871	1,336,048	1,375,371	1,415,873	1,457,590	1,500,559	1,544,817	1,590,402	1,637,354	1,685,715	1,735,527	1,786,834	1,839,680	1,894,112	1,950,176	2,007,922
Operating Income	-				5,744,462	5,855,136	5,968,178	6,081,821	6,203,471	6,322,173	6,441,140	6,563,409	6,689,418	6,816,277	6,944,873	7,077,156	7,212,791	7,347,441	7,483,209	7,626,539
Nonoperating Revenues (Expenses)																				
Interest Income																				
Interest Expense					76,362	73,816	71,356	68,977	66,678	64,455	62,307	60,230	58,222	56,282	54,406	52,592	50,839	49,144	47,506	45,923
Interest Exp as % of Debt	5.26%				5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%	5.26%
Total nonoperating revenues (expenses)	-				76,362.00	73,816.00	71,356.00	68,977.00	66,678.00	64,455.00	62,307.00	60,230.00	58,222.00	56,282.00	54,406.00	52,592.00	50,839.00	49,144.00	47,506.00	45,923.00
Income (loss) before State and Federal Taxes	-				5,668,100	5,781,320	5,896,822	6,012,844	6,136,793	6,257,718	6,378,833	6,503,179	6,631,196	6,759,995	6,890,467	7,024,564	7,161,952	7,298,297	7,435,703	7,580,616
State and Federal Taxes	-				1,637,514	1,670,223	1,703,592	1,737,111	1,772,919	1,807,855	1,842,845	1,878,768	1,915,753	1,952,963	1,990,656	2,029,396	2,069,088	2,108,478	2,148,175	2,190,040
State and Federal Tax Rate	28.89%				28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income After Taxes	-				4,030,586	4,111,097	4,193,230	4,275,733	4,363,874	4,449,863	4,535,988	4,624,411	4,715,443	4,807,032	4,899,811	4,995,168	5,092,864	5,189,819	5,287,528	5,390,576
Income After Taxes plus Interest	-				4,106,948	4,184,913	4,264,586	4,344,710	4,430,552	4,514,318	4,598,295	4,684,641	4,773,665	4,863,314	4,954,217	5,047,760	5,143,703	5,238,963	5,335,034	5,436,499
Earnings before Interest, Taxes, Depreciation, & Amortization					2,931,150	2,977,636	3,024,658	3,073,262	3,119,196	3,168,807	3,220,271	3,271,856	3,323,330	3,376,393	3,430,556	3,484,717	3,539,094	3,596,221	3,654,909	3,711,462
Income (loss) before State and Federal Taxes					5,668,100	5,781,320	5,896,822	6,012,844	6,136,793	6,257,718	6,378,833	6,503,179	6,631,196	6,759,995	6,890,467	7,024,564	7,161,952	7,298,297	7,435,703	7,580,616
Book Depreciation					(461,716)	(462,946)	(463,664)	(465,663)	(461,563)	(462,344)	(464,821)	(465,983)	* (465,418)	(466,042)	(466,995)	(466,353)	(464,479)	(465,736)	(468,050)	(465,003)
Tax Depreciation					(337,534)	(352,955)	(368,593)	(371,358)	(374,142)	(376,949)	(379,776)	(382,624)	(385,493)	(388,386)	(391,298)	(394,232)	(397,190)	(400,170)	(403,175)	(406,193)
Difference Tax over Book Depreciation					124,182	109,991	95,071	94,305	87,421	85,395	85,044	83,359	79,925	77,656	75,697	72,122	67,289	65,566	64,879	58,810
Income Adjusted for Tax Depreciation					5,792,282	5,891,311	5,991,893	6,107,149	6,224,214	6,343,113	6,463,878	6,586,538	6,711,121	6,837,651	6,966,164	7,096,685	7,229,241	7,363,863	7,500,582	7,639,426
Income Tax Rate					28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%	28.89%
Income Taxes					1,673,390	1,702,000	1,731,058	1,764,355	1,798,175	1,832,525	1,867,414	1,902,851	1,938,843	1,975,397	2,012,525	2,050,232	2,088,528	2,127,420	2,166,918	2,207,030
Income After Tax					4,118,892	4,189,311	4,260,835	4,342,794	4,426,039	4,510,588	4,596,464	4,683,687	4,772,278	4,862,254	4,953,639	5,046,453	5,140,713	5,236,443	5,333,664	5,432,396
Deferred Income Taxes					35,876	31,777	27,466	27,244	25,256	24,670	24,569	24,083	23,090	22,434	21,869	20,836	19,440	18,942	18,743	16,990
Accumulated Deferred Income Taxes					(1,561,938)	(1,530,161)	(1,502,695)	(1,475,451)	(1,450,195)	(1,425,525)	(1,402,956)	(1,378,873)	(1,353,783)	(1,331,349)	(1,309,480)	(1,288,644)	(1,269,204)	(1,250,262)	(1,231,519)	(1,214,529)
Income After Taxes (Book Depreciation)					4,030,586	4,111,097	4,193,230	4,275,733	4,363,874	4,449,863	4,535,988	4,624,411	4,715,443	4,807,032	4,899,811	4,995,168	5,092,864	5,189,819	5,287,528	5,390,576
Plus Deferred Taxes					35,876	31,777	27,466	27,244	25,256	24,670	24,569	24,083	23,090	22,434	21,869	20,836	19,440	18,942	18,743	16,990
Plus Interest					76,362	73,816	71,356	68,977	66,678	64,455	62,307	60,230	58,222	56,282	54,406	52,592	50,839	49,144	47,506	45,923
After Tax Income Debt Free					4,071,072	4,153,136	4,237,120	4,317,466	4,405,296	4,489,648	4,573,726	4,660,558	4,750,575	4,840,880	4,932,348	5,026,924	5,124,263	5,220,021	5,316,291	5,419,509
Balance Statement																				
Assets																				
Current Assets																				
Current Asset Balance	267,907				2,101,134	2,143,156	2,186,020	2,229,740	2,274,335	2,319,821	2,366,218	2,413,542	2,461,813	2,511,050	2,561,271	2,612,496	2,664,746	2,718,041	2,772,402	2,827,850
CA as % of Revenues	28.00%	28.00%	28.00%	28.00%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%
Balance Statement																				
Property Plant & Equipment																				
Total PP&E																				
Begin Balance					34,781,829.00	35,033,508.00	35,287,071.00	35,542,539.00	35,799,922.00	36,059,235.00	36,320,493.00	36,583,709.00	36,848,900.00	37,116,082.00	37,385,267.00	37,656,471.00	37,929,706.00	38,204,994.00	38,482,348.00	38,761,781.00
Additions					335,571.00	338,085.00	340,623.00	343,178.00	345,751.00	348,345.00	350,957.00	353,589.00	356,240.00	358,914.00	361,605.00	364,316.00	367,050.00	369,804.00	372,577.00	375,369.00
Retirements					(83,892.00)	(84,522.00)	(85,155.00)	(85,795.00)	(86,438.00)	(87,087.00)	(87,741.00)	(88,398.00)	(89,058.00)	(89,729.00)	(90,401.00)	(91,081.00)	(91,762.00)	(92,450.00)	(93,144.00)	(93,843.00)
End Balance	17,241,425.00				35,033,508.00	35,287,071.00	35,542,539.00	35,799,922.00	36,059,235.00	36,320,493.00	36,583,709.00	36,848,900.00	37,116,082.00	37,385,267.00	37,656,471.00	37,929,706.00	38,204,994.00	38,482,348.00	38,761,781.00	39,043,307.00
End Balance Check					35,033,508.00	35,287,071.00	35,542,539.00	35,799,922.00	36,059,235.00	36,320,493.00	36,583,709.00	36,848,900.00	37,116,082.00	37,385,267.00	37,656,471.00	37,929,706.00	38,204,994.00	38,482,348.00	38,761,781.00	39,043,307.00
Book Depreciation of Property, Plant, & Equipment																				
Total Book Depreciation																				
Begin Balance					(19,730,018.23)	(20,107,870.24)	(20,486,322.28)	(20,864,859.26)	(21,244,755.47)	(21,619,908.71)	(21,995,195.12)	(22,372,303.89)	(22,749,918.25)	(23,126,307.31)	(23,502,650.38)	(23,879,274.48)	(24,254,576.80)	(24,627,323.48)	(25,000,619.73)	(25,375,576.59)
Depreciation					(461,716.01)	(462,946.04)	(463,663.98)	(465,663.21)	(461,563.24)	(462,344.41)	(464,820.77)	(465,983.36)	(465,418.06)	(466,042.07)	(466,995.10)	(466,353.32)	(464,478.68)	(465,736.25)	(468,049.86)	(465,002.93)
Retirements					83,864.00	84,494.00	85,127.00	85,767.00	86,410.00	87,058.00	87,712.00	88,369.00	89,029.00	89,699.00	90,371.00	91,051.00	91,732.00	92,420.00	93,113.00	93,812.00

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	1-5	Periods: 6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
End Balance					(20,107,870.24)	(20,486,322.28)	(20,864,859.26)	(21,244,755.47)	(21,619,908.71)	(21,995,195.12)	(22,372,303.89)	(22,749,918.25)	(23,126,307.31)	(23,502,650.38)	(23,879,274.48)	(24,254,576.80)	(24,627,323.48)	(25,000,639.73)	(25,375,576.59)	(25,746,767.52)
End Balance Check					(20,107,870.24)	(20,486,322.28)	(20,864,859.26)	(21,244,755.47)	(21,619,908.71)	(21,995,195.12)	(22,372,303.89)	(22,749,918.25)	(23,126,307.31)	(23,502,650.38)	(23,879,274.48)	(24,254,576.80)	(24,627,323.48)	(25,000,639.73)	(25,375,576.59)	(25,746,767.52)
Net Plant																				
Begin Balance					15,051,810.77	14,925,637.76	14,800,748.72	14,677,679.74	14,555,166.53	14,439,326.29	14,325,297.88	14,211,405.11	14,098,981.75	13,989,774.69	13,882,616.62	13,777,196.52	13,675,129.20	13,577,670.52	13,481,708.27	13,386,204.41
End Balance					14,925,637.76	14,800,748.72	14,677,679.74	14,555,166.53	14,439,326.29	14,325,297.88	14,211,405.11	14,098,981.75	13,989,774.69	13,882,616.62	13,777,196.52	13,675,129.20	13,577,670.52	13,481,708.27	13,386,204.41	13,296,539.44
Total Asset					17,026,771.76	16,943,904.72	16,863,699.74	16,784,906.53	16,713,661.29	16,645,118.88	16,577,623.11	16,512,523.75	16,451,587.69	16,393,666.62	16,338,467.52	16,287,625.70	16,242,416.52	16,199,749.27	16,158,606.41	16,124,389.48
Tax Depreciation of Property, Plant, & Equipment																				
Total MACRS Depreciation																				
Begin Balance																				
Depreciation					(337,533.53)	(352,954.56)	(368,593.37)	(371,357.99)	(374,142.15)	(376,948.99)	(379,776.40)	(382,624.39)	(385,492.89)	(388,386.35)	(391,298.21)	(394,231.68)	(397,190.09)	(400,170.16)	(403,170.75)	(406,192.99)
Retirements					83,892.00	84,522.00	85,155.00	85,795.00	86,438.00	87,087.00	87,741.00	88,398.00	89,058.00	89,729.00	90,401.00	91,081.00	91,762.00	92,450.00	93,144.00	93,843.00
End Balance					(253,641.53)	(268,432.56)	(283,438.37)	(285,562.99)	(287,704.15)	(289,861.99)	(292,035.40)	(294,226.39)	(296,434.89)	(298,657.35)	(300,897.21)	(303,150.68)	(305,428.09)	(307,720.16)	(310,026.75)	(312,349.99)
End Balance Check					(253,641.53)	(268,432.56)	(283,438.37)	(285,562.99)	(287,704.15)	(289,861.99)	(292,035.40)	(294,226.39)	(296,434.89)	(298,657.35)	(300,897.21)	(303,150.68)	(305,428.09)	(307,720.16)	(310,026.75)	(312,349.99)
Net Plant																				
Begin Balance					34,781,829.00	35,033,508.00	35,287,071.00	35,542,539.00	35,799,922.00	36,059,235.00	36,320,493.00	36,583,709.00	36,848,900.00	37,116,082.00	37,385,267.00	37,656,471.00	37,929,706.00	38,204,994.00	38,482,348.00	38,761,781.00
End Balance					34,779,866.47	35,018,638.44	35,259,100.63	35,514,359.01	35,771,530.85	36,030,611.01	36,291,673.60	36,554,673.61	36,819,647.11	37,086,609.65	37,355,573.79	37,626,555.12	37,899,565.91	38,174,627.84	38,451,754.25	38,730,957.01
Tax					(337,533.53)	(352,954.56)	(368,593.37)	(371,357.99)	(374,142.15)	(376,948.99)	(379,776.40)	(382,624.39)	(385,492.89)	(388,386.35)	(391,298.21)	(394,231.68)	(397,190.09)	(400,170.16)	(403,170.75)	(406,192.99)
Book					(461,716.01)	(462,946.04)	(463,663.98)	(465,663.21)	(467,563.24)	(467,364.41)	(464,820.77)	(465,983.36)	(466,418.06)	(466,042.07)	(466,995.10)	(466,353.32)	(464,478.68)	(465,736.25)	(464,049.86)	(465,002.93)
					124,182.48	109,991.48	95,070.61	94,305.22	92,579.09	90,415.42	85,044.37	83,358.97	79,925.17	77,655.72	75,696.89	72,122.64	67,288.59	65,566.09	60,879.11	58,809.94
Balance Statement																				
Liabilities																				
Current Liabilities																				
Current Liabilities	216,239				1,695,915	1,729,833	1,764,430	1,799,719	1,835,713	1,872,427	1,909,876	1,948,073	1,987,035	2,026,776	2,067,311	2,108,658	2,150,831	2,193,847	2,237,724	2,282,479
CL as % of Revenues	22.60%	22.60%		22.60%	22.60%	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%
Noncurrent Liabilities																				
Long Term Debt, Notes payable, net of current portion Beg	5,649,670.00				1,451,743.00	1,403,352.00	1,356,574.00	1,311,355.00	1,267,643.00	1,225,388.00	1,184,542.00	1,145,057.00	1,106,888.00	1,069,992.00	1,034,326.00	999,848.00	966,520.00	934,303.00	903,160.00	873,055.00
Additional Debt	-																			
Debt Repayment					(48,391)	(46,778)	(45,219)	(43,712)	(42,255)	(40,846)	(39,485)	(38,169)	(36,896)	(35,666)	(34,478)	(33,328)	(32,217)	(31,143)	(30,105)	(29,102)
Debt Repayment years	30.00				30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End					1,403,352.00	1,356,574.00	1,311,355.00	1,267,643.00	1,225,388.00	1,184,542.00	1,145,057.00	1,106,888.00	1,069,992.00	1,034,326.00	999,848.00	966,520.00	934,303.00	903,160.00	873,055.00	843,953.00
Total noncurrent liabilities																				
Deferred Tax Liabilities																				
Begin Balance					1,597,814	1,561,938	1,530,161	1,502,695	1,475,451	1,450,195	1,425,525	1,400,956	1,376,873	1,353,783	1,331,349	1,309,480	1,288,644	1,269,204	1,250,262	1,231,519
Begin Balance					(35,876)	(31,777)	(27,466)	(27,244)	(25,256)	(24,670)	(24,549)	(24,083)	(23,090)	(22,434)	(21,869)	(20,836)	(19,460)	(18,942)	(18,743)	(16,990)
Total Deferred Tax Liability					1,561,938	1,530,161	1,502,695	1,475,451	1,450,195	1,425,525	1,400,956	1,376,873	1,353,783	1,331,349	1,309,480	1,288,644	1,269,204	1,250,262	1,231,519	1,214,529
Total Liabilities					4,661,205.00	4,616,568.00	4,578,480.00	4,542,813.00	4,511,296.00	4,482,494.00	4,455,889.00	4,431,834.00	4,410,810.00	4,392,451.00	4,376,639.00	4,363,622.00	4,354,338.00	4,347,269.00	4,342,298.00	4,340,961.00
Equity																				
Proportion of Capital	67%																			
Beginning Equity Capital	11,553,755				101,268,079	105,298,665	109,409,762	113,602,992	117,878,725	122,242,598	126,692,461	131,228,649	135,852,860	140,564,303	145,375,335	150,275,146	155,270,313	160,363,178	165,552,999	170,840,524
Additions to Equity (Retained Earnings)					4,030,586	4,111,097	4,193,230	4,275,733	4,363,874	4,449,863	4,535,988	4,624,411	4,715,443	4,807,032	4,899,811	4,995,168	5,092,866	5,189,819	5,287,526	5,390,576
Deductions form Equity Dividends	0				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid In Capital					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Equity Capital					105,298,665	109,409,762	113,602,992	117,878,725	122,242,598	126,692,461	131,228,449	135,852,860	140,568,303	145,375,335	150,275,146	155,270,313	160,363,178	165,552,999	170,840,524	176,231,100
Operating Income					5,744,462	5,855,136	5,968,178	6,081,821	6,203,471	6,322,173	6,441,140	6,563,409	6,689,418	6,816,277	6,944,873	7,077,356	7,212,791	7,347,441	7,483,209	7,626,539
Return On Equity					5.46%	5.35%	5.25%	5.16%	5.07%	4.99%	4.91%	4.83%	4.76%	4.69%	4.62%	4.56%	4.50%	4.44%	4.38%	4.33%
Total Liabilities & Stockholders Equity					109,959,870	114,026,330	118,181,472	122,421,538	126,753,894	131,174,955	135,684,338	140,284,694	144,979,113	149,767,786	154,651,785	159,634,135	164,717,516	169,900,265	175,182,822	180,572,061
Assets					17,026,772	16,943,905	16,863,700	16,784,907	16,713,661	16,645,319	16,577,623	16,512,524	16,451,588	16,393,667	16,338,468	16,287,625	16,242,417	16,199,749	16,158,606	16,124,389
Liabilities & Stockholders Equity less Assets					92,933,098	97,082,425	101,317,772	105,636,631	110,040,233	114,529,636	119,106,715	123,772,170	128,527,525	133,374,119	138,313,317	143,346,510	148,475,099	153,700,516	159,024,216	164,447,672
Dividend					92,933,098	97,082,425	101,317,772	105,636,631	110,040,233	114,529,836	119,106,715	123,772,170	128,527,525	133,374,119	138,313,317	143,346,510	148,475,099	153,700,516	159,024,216	164,447,672
Final Stockholder Equity					17,026,772	16,943,905	16,863,700	16,784,907	16,713,661	16,645,319	16,577,623	16,512,524	16,451,588	16,393,667	16,338,468	16,287,625	16,242,417	16,199,749	16,158,606	16,124,389
Capital Expenditures and Changes in Working Capital																				
Capital Expenditures					335,571.00	338,085.00	340,623.00	343,178.00	345,751.00	348,345.00	350,957.00	353,589.00	356,240.00	358,914.00	361,609.00	364,326.00	367,050.00	369,804.00	372,577.00	375,369.00
Changes to Working Capital																				
Current Assets	297,967				2,101,134	2,143,156	2,186,020	2,229,740	2,274,335	2,319,821	2,366,218	2,413,542	2,461,813	2,511,050	2,561,271	2,612,496	2,664,746	2,718,041	2,772,402	2,827,850
Current Liabilities	216,239				1,695,915	1,729,833	1,764,430	1,799,719	1,835,713	1,872,427	1,909,876	1,948,073	1,987,035	2,026,776	2,067,311	2,108,658	2,150,831	2,193,847	2,237,724	2,282,479
Working Capital	81,728				405,219	413,323	421,590	430,021	438,622	447,394	456,342	465,469	474,778	484,274	493,960	503,838	513,915	524,194	534,678	545,371
Changes to Working Capital					7,946	8,104	8,267	8,431	8,601	8,772	8,948	9,127	9,309	9,496	9,686	9,878	10,077	10,279	10,484	10,693
CASH FLOW																				
Income from Operations					4,106,948	4,184,913	4,268,586	4,344,710	4,430,552	4,514,318	4,598,295	4,684,641	4,773,665	4,863,314	4,954,217	5,047,760	5,143,703	5,238,963	5,335,034	5,436,499
Non-Cash Expense (depreciation)					461,716	462,946	463,664	465,663	467,563	467,364	464,821	465,983	465,418	466,042	466,995	466,353	464,479	465,736	468,050	465,003
Capital Expenditures					335,571	338,085	340,623	343,178	345,751	348,345	350,957	353,589	356,240	358,914	361,605	364,316	367,050	369,804	372,577	375,369
Change in Working Capital					7,946	8,104	8,267	8,431	8,601	8,772	8,948	9,127	9,309	9,496	9,686	9,878	10,077	10,279	10,484	10,693
Net Cash Flows					4,225,147	4,301,670	4,379,360	4,458,764	4,537,763	4,619,545	4,701,211	4,787,908	4,873,534	4,960,946	5,049,921	5,139,919	5,231,055	5,324,616	5,420,023	5,515,440
Period					41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
					19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881
Period Present Worth Factor (PW)					0.038	0.035	0.032	0.03	0.028	0.026	0.024	0.022	0.02	0.019	0.017	0.016	0.015	0.014	0.013	0.012
PW of Cashflow					3,192,026	2,993,254	2,796,114	2,609,341	2,526,027	2,387,871	2,244,309	2,098,145	1,917,815	1,873,943	1,706,757	1,634,988	1,559,979	1,482,022	1,400,823	1,315,830

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Accumulated PW of Cashflows	17,160,123				153,825,672	156,818,925	159,605,039	162,264,380	164,790,407	167,178,278	169,422,387	171,516,532	173,454,347	175,328,290	177,035,047	178,670,035	180,230,014	181,712,036	183,112,457	184,428,687
CASH FLOW																				
Income from Operations					4,118,892	4,189,311	4,260,835	4,342,794	4,426,039	4,510,588	4,596,464	4,683,687	4,772,278	4,862,264	4,953,639	5,046,453	5,140,713	5,236,443	5,333,664	5,432,396
Depreciation					(337,534)	(352,955)	(368,593)	(371,358)	(374,142)	(376,949)	(379,776)	(382,624)	(385,493)	(388,385)	(391,298)	(394,232)	(397,190)	(400,170)	(403,171)	(406,193)
Capital Expenditures					335,571	338,085	340,623	343,178	345,751	348,345	350,957	353,589	356,240	358,914	361,605	364,316	367,050	369,804	372,577	375,369
Change in Working Capital					7,946	8,104	8,267	8,431	8,601	8,772	8,948	9,127	9,309	9,496	9,686	9,878	10,077	10,279	10,484	10,693
Net Cash Flows					4,112,909	4,196,077	4,280,538	4,362,543	4,445,829	4,530,420	4,616,335	4,703,595	4,792,222	4,882,230	4,973,646	5,066,491	5,160,776	5,256,530	5,353,774	5,452,527
Period					41.5	42.5	43.5	44.5	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5
PW Factor																				
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%	5.03%
					19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881	19.881
Period Present Worth Factor (PW)					0.038	0.035	0.032	0.03	0.028	0.026	0.024	0.022	0.02	0.019	0.017	0.016	0.015	0.014	0.013	0.012
PW of Cashflow					3,107,212	2,919,777	2,723,244	2,601,952	2,474,851	2,341,801	2,202,607	2,057,268	1,905,483	1,844,209	1,680,978	1,611,631	1,539,021	1,463,071	1,383,699	1,300,820
Accumulated PW of Cashflows	15,240,052				146,593,260	149,513,037	152,236,281	154,838,233	157,313,084	159,654,885	161,857,542	163,914,810	165,820,293	167,664,502	169,345,480	170,957,111	172,496,132	173,959,203	175,342,902	176,643,722

Rate Case Forecasts																				
Rate Base																				
Plant In Service					35,033,508.00	35,287,071.00	35,542,539.00	35,799,922.00	36,059,235.00	36,320,493.00	36,583,709.00	36,848,900.00	37,116,082.00	37,385,267.00	37,656,471.00	37,929,706.00	38,204,994.00	38,482,348.00	38,761,781.00	39,043,307.00
Accumulated Book Depreciation					(20,107,870.24)	(20,486,322.28)	(20,864,859.26)	(21,244,755.47)	(21,619,908.71)	(21,995,195.12)	(22,372,303.89)	(22,749,918.25)	(23,126,307.31)	(23,502,650.38)	(23,879,274.48)	(24,254,576.80)	(24,627,323.48)	(25,000,639.73)	(25,375,576.59)	(25,746,767.52)
Working Capital					405,219.00	413,323.00	421,590.00	430,021.00	438,622.00	447,394.00	456,342.00	465,469.00	474,778.00	484,274.00	493,960.00	503,838.00	513,915.00	524,194.00	534,678.00	545,371.00
Accumulated Deferred Income Tax					(1,561,938)	(1,530,161)	(1,502,695)	(1,475,451)	(1,450,195)	(1,425,525)	(1,400,966)	(1,376,873)	(1,353,783)	(1,331,349)	(1,309,480)	(1,288,644)	(1,269,204)	(1,250,262)	(1,231,519)	(1,214,529)
Rate Base					13,768,918.76	13,683,910.72	13,596,574.74	13,509,736.53	13,427,753.29	13,347,166.88	13,266,791.11	13,187,577.75	13,110,769.69	13,035,541.62	12,961,676.52	12,890,323.20	12,822,381.52	12,755,640.27	12,689,363.41	12,627,381.48
Authorized Return on Rate Base	6.84%				941,794.00	935,979.00	930,006.00	924,066.00	918,458.00	912,946.00	907,449.00	902,030.00	896,777.00	891,631.00	886,579.00	881,698.00	877,051.00	872,486.00	867,952.00	863,713.00
O&M Expenses					1,297,871.00	1,336,048.00	1,375,371.00	1,415,873.00	1,457,590.00	1,500,559.00	1,544,817.00	1,590,402.00	1,637,354.00	1,685,715.00	1,735,527.00	1,786,834.00	1,839,680.00	1,894,112.00	1,950,176.00	2,007,922.00
Book Depreciation					461,716.01	462,946.04	463,663.98	465,663.21	461,563.24	462,344.41	464,820.77	465,983.36	466,418.06	466,042.07	466,995.10	466,353.32	464,478.68	465,736.25	468,089.86	465,002.93
Ratemaking Interest Expense					76,362.00	73,816.00	71,356.00	68,977.00	66,678.00	64,455.00	62,307.00	60,230.00	58,222.00	56,282.00	54,406.00	52,592.00	50,839.00	49,144.00	47,506.00	45,923.00
Revenue Requirement:					2,777,743.01	2,808,789.04	2,840,396.98	2,874,579.21	2,904,289.24	2,940,304.41	2,979,393.77	3,018,645.36	3,057,771.06	3,099,670.07	3,143,507.10	3,187,477.32	3,232,048.68	3,281,478.25	3,333,683.86	3,382,560.93
O&M Expenses					1,297,871.00	1,336,048.00	1,375,371.00	1,415,873.00	1,457,590.00	1,500,559.00	1,544,817.00	1,590,402.00	1,637,354.00	1,685,715.00	1,735,527.00	1,786,834.00	1,839,680.00	1,894,112.00	1,950,176.00	2,007,922.00
Depreciation Expense					465,716.01	462,946.04	463,663.98	465,663.21	461,563.24	462,344.41	464,820.77	465,983.36	466,418.06	466,042.07	466,995.10	466,353.32	464,478.68	465,736.25	468,089.86	465,002.93
Interest					76,362.00	73,816.00	71,356.00	68,977.00	66,678.00	64,455.00	62,307.00	60,230.00	58,222.00	56,282.00	54,406.00	52,592.00	50,839.00	49,144.00	47,506.00	45,923.00
Pretax Income					941,794.00	935,979.00	930,006.00	924,066.00	918,458.00	912,946.00	907,449.00	902,030.00	896,777.00	891,631.00	886,579.00	881,698.00	877,051.00	872,486.00	867,952.00	863,713.00
State & Federal Taxes @ 28.49%					272,064.00	270,404.00	268,679.00	266,963.00	265,343.00	263,750.00	262,162.00	260,596.00	259,079.00	257,592.00	256,133.00	254,723.00	253,380.00	252,063.00	250,751.00	249,527.00
After Tax Income					669,730.00	665,575.00	661,327.00	657,103.00	653,115.00	649,196.00	645,287.00	641,434.00	637,698.00	634,039.00	630,446.00	626,975.00	623,671.00	620,425.00	617,201.00	614,186.00
Current Revenue					7,504,049.00	7,604,130.00	7,807,213.00	7,963,357.00	8,122,624.00	8,285,076.00	8,450,778.00	8,619,794.00	8,792,190.00	8,968,034.00	9,147,395.00	9,330,343.00	9,516,950.00	9,707,289.00	9,901,435.00	10,099,464.00
Revenue Requirement					3,049,827.01	3,079,193.04	3,109,075.98	3,141,542.21	3,169,632.24	3,204,054.41	3,241,555.77	3,279,241.36	3,316,850.06	3,357,262.07	3,399,640.10	3,442,200.32	3,485,428.68	3,533,539.25	3,584,434.86	3,632,087.93
Required Revenue Increase					-59%	-60%	-60%	-61%	-61%	-61%	-62%	-62%	-62%	-63%	-63%	-63%	-63%	-64%	-64%	-64%
Income from Operations					4,106,948	4,184,913	4,264,586	4,344,710	4,430,552	4,514,318	4,598,295	4,684,641	4,773,665	4,863,314	4,954,217	5,047,766	5,143,703	5,238,961	5,335,034	5,436,499
Return on Rate Base					29.83%	30.58%	31.37%	32.16%	33.00%	33.82%	34.66%	35.52%	36.41%	37.31%	38.22%	39.16%	40.12%	41.07%	42.04%	43.05%
Required Return	6.84%				6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%	6.84%
Authorized Return					941,794	935,979	930,006	924,066	918,458	912,946	907,449	902,030	896,777	891,631	886,579	881,698	877,051	872,486	867,952	863,713
After tax Net Income					4,030,386	4,111,097	4,193,230	4,275,733	4,363,874	4,449,863	4,535,988	4,624,411	4,715,643	4,807,032	4,899,811	4,995,168	5,092,864	5,189,819	5,287,528	5,390,576
Taxes	1,637,514	1,670,223	1,703,592	1,737,111	1,772,919	1,807,855	1,842,845	1,878,768	1,915,753	1,952,963	1,990,656	2,029,396	2,069,088	2,108,478	2,148,175	2,190,040				
Pre-tax Net Income	5,668,100	5,781,320	5,896,822	6,012,844	6,136,793	6,257,718	6,378,833	6,503,179	6,631,396	6,759,995	6,890,467	7,024,564	7,161,952	7,296,297	7,435,703	7,580,616				
Interest Expense	76,362	73,816	71,356	68,977	66,678	64,455	62,307	60,230	58,222	56,282	54,406	52,592	50,839	49,144	47,506	45,923				
Operating Income	5,744,462	5,855,136	5,968,178	6,081,821	6,203,471	6,322,173	6,441,140	6,563,409	6,689,618	6,816,277	6,944,873	7,077,156	7,212,791	7,347,441	7,483,209	7,626,539				
Operating Expenses	1,759,587	1,798,994	1,839,035	1,881,536	1,919,153	1,962,903	2,009,638	2,056,385	2,102,772	2,151,757	2,202,522	2,253,187	2,304,159	2,359,868	2,418,226	2,472,925				
Revenue Requirement	7,504,049	7,654,130	7,807,213	7,963,357	8,122,624	8,285,076	8,450,778	8,619,794	8,792,190	8,968,034	9,147,395	9,330,343	9,516,950	9,707,289	9,901,435	10,099,464				
Required Return	941,794	935,979	930,006	924,066	918,458	912,946	907,449	902,030	896,777	891,631	886,579	881,698	877,051	872,486	867,952	863,713				
Operating Expenses	1,759,587	1,798,994	1,839,035	1,881,536	1,919,153	1,962,903	2,009,638	2,056,385	2,102,772	2,151,757	2,202,522	2,253,187	2,304,159	2,359,868	2,418,226	2,472,925				
Revenue Requirement	2,701,381	2,734,973	2,769,041	2,805,602	2,837,611	2,875,849	2,917,087	2,958,415	2,999,549	3,043,388	3,089,101	3,134,885	3,181,210	3,232,354	3,286,178	3,336,638				
Required Rate Increase	-59.36%	-59.77%	-60.18%	-60.55%	-60.98%	-61.33%	-61.64%	-61.96%	-62.28%	-62.56%	-62.83%	-63.11%	-63.38%	-63.60%	-63.80%	-64.04%				
	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57				
Proposed Rate Increase:																				
Rate Increase Scenario:	0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57			
No Increases (Input 2)	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No Rate Increases (Input 2)	3																			
Modest Rate Increases. 6% every 3 year period starting in period 3 (Input 4)	4	6.0%	6.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%			
Modest Rate Increases. (Input 4)	5																			
Required Rate Increases: 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6	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%			
Required Rate Increases. (Input 6)	7	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%	233.4%			
	8	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%	0.0%	0.0%	6.0%			
Changes In Balance Sheet Accounts																				
Assets:																				
Change in Current Assets (Source negative / Use positive)	41,199	42,022	42,864	43,720	44,595	45,486	46,397	47,324	48,271	49,237	50,221	51,225	52,250	53,295	54,361	55,448				
Plant & Equipment																				
Additions (Source negative / Use positive)	335,571	338,085	340,623	343,178	345,751	348,345	350,957	353,589	356,240	358,914	361,605	364,316	367,050	369,804	372,577	375,369				
Liabilities																				
Change in Current Liabilities (Source Positive / Use negative)	33,253	33,918	34,597	35,289	35,994	36,714	37,449	38,197	38,962	39,741	40,535	41,347	42,173	43,016	43,877	44,755				
Long Term Debt																				
Additional Long Term Debt Source Positive / Use Negative																				
Principal Paid Long term Debt (Source positive / Use negative)	68,493	66,778	65,119	63,712	62,255	60,846	59,486	58,169	56,896	55,664	54,474	53,329	52,257	51,143	50,105	29,102				

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Equity																				
Additions to Equity (Source Positive / Use Negative)																				
Dividend (Source negative / Use Positive)																				
Funds Provided from Operations																				
Sources of Funds																				
Net Income (Use Negative / Source Positive)					4,030,586	4,111,097	4,193,230	4,275,733	4,363,874	4,449,863	4,535,988	4,624,411	4,715,443	4,807,032	4,899,811	4,995,168	5,092,864	5,189,819	5,287,528	5,390,576
Depreciation (Source positive /use negative)					461,716	462,946	463,664	465,663	461,563	462,344	464,821	465,983	465,418	466,042	466,995	466,353	464,479	465,736	468,050	465,003
Current Liabilities (Source Positive)					33,253	33,918	34,597	35,289	35,994	36,714	37,449	38,197	38,962	39,741	40,535	41,347	42,173	43,016	43,877	44,755
					4,525,555	4,607,961	4,691,491	4,776,685	4,861,431	4,948,921	5,038,258	5,128,591	5,219,823	5,312,815	5,407,341	5,502,868	5,599,516	5,698,571	5,799,455	5,900,334
Sources and Uses of Funds																				
Sources of Funds																				
Current Liabilities (Source Positive)																				
Uses of Funds																				
Current Assets. Increase (Use)					41,199	42,022	42,864	43,720	44,595	45,486	46,397	47,324	48,271	49,237	50,221	51,225	52,250	53,295	54,361	55,448
Fixed Assets. Assets. Increase (Use)					335,571	338,085	340,623	343,178	345,751	348,345	350,957	353,589	356,240	358,914	361,605	364,316	367,050	369,804	372,577	375,369
Total Uses of Funds					376,770	380,107	383,487	386,898	390,346	393,831	397,354	400,913	404,511	408,151	411,826	415,541	419,300	423,099	426,938	430,817
Funds from Financing Activities																				
Changes in Debt																				
Increase in Long Term Debt																				
Repayment of Long Term Debt					(48,391)	(46,778)	(45,219)	(43,712)	(42,255)	(40,846)	(39,485)	(38,169)	(36,896)	(35,666)	(34,478)	(33,328)	(32,217)	(31,143)	(30,105)	(29,102)
Funds fom Equity																				
Dividends Paid (Use)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Additional Paid in Capital (source)																				
Total Funds from Financing Activities					(48,391.00)	(46,778.00)	(45,219.00)	(43,712.00)	(42,255.00)	(40,846.00)	(39,485.00)	(38,169.00)	(36,896.00)	(35,666.00)	(34,478.00)	(33,328.00)	(32,217.00)	(31,143.00)	(30,105.00)	(29,102.00)
Total Funds Needed					4,100,394.00	4,181,076.00	4,262,785.00	4,346,075.00	4,428,830.00	4,514,244.00	4,601,419.00	4,689,509.00	4,778,416.00	4,868,998.00	4,961,037.00	5,053,999.00	5,147,999.00	5,244,329.00	5,342,412.00	5,440,415.00
Financing																				
Debt	33%				(1,353,130.00)	(1,379,755.00)	(1,406,719.00)	(1,434,205.00)	(1,461,514.00)	(1,489,701.00)	(1,518,468.00)	(1,547,538.00)	(1,576,877.00)	(1,606,769.00)	(1,637,142.00)	(1,667,820.00)	(1,698,840.00)	(1,730,629.00)	(1,762,996.00)	(1,795,337.00)
Equity	67%				(2,747,264.00)	(2,801,321.00)	(2,856,066.00)	(2,911,870.00)	(2,967,316.00)	(3,024,543.00)	(3,082,951.00)	(3,141,971.00)	(3,201,539.00)	(3,262,229.00)	(3,323,895.00)	(3,386,179.00)	(3,449,159.00)	(3,513,700.00)	(3,579,416.00)	(3,645,078.00)
Funds Provided by Financing					(4,100,394.00)	(4,181,076.00)	(4,262,785.00)	(4,346,075.00)	(4,428,830.00)	(4,514,244.00)	(4,601,419.00)	(4,689,509.00)	(4,778,416.00)	(4,868,998.00)	(4,961,037.00)	(5,053,999.00)	(5,147,999.00)	(5,244,329.00)	(5,342,412.00)	(5,440,415.00)

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	58	59	60
Income Statement							
Revenues							
Annual Revenue Growth rate							
Subscriber Growth Rate (Annually)		2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Periodic Subscriber Growth							
Growth	10.5%	10.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Period for Periodic Growth	5						
Rate Case Activities							
Periodic Rate Case (years)	typically 3 years						
Required Rate Increase	Calculated in DCF				-64.19%	-64.37%	-64.56%
Proposed Rate Increase	Calculated in DCF				0.0%	0.0%	0.0%
Total Revenue Adjustments	Calculated				2.0%	2.0%	2.0%
Base and Forecast	956,810				10,301,453	10,507,482	10,717,632
Operating Expenses					7%	7%	7%
Expense Level 1. Operations Labor	88,077				695,097	715,950	737,429
Expense Level 1. Operations Labor Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 2. Contract Labor	93,800				25,308	25,308	25,308
Expense Level 2. Contract Labor Rate of Change		-5.0%	-10.0%	0.0%	0.0%	0.0%	0.0%
Expense Level 3. Treatment	148,000				1,168,010	1,203,050	1,239,142
Expense Level 3. Treatment Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%
Expense Level 4. Utilities	22,680				178,986	184,356	189,887
Expense Level 4. Utilities Rate of Change		10.5%	3.0%	3.0%	3.0%	3.0%	3.0%
Property Taxes	17,241,425				-	-	-
Begin Plant					13,296,539	13,205,764	13,116,338
PT Rate % of beginning net plant	0.000%				0.000%	0.000%	0.000%
Book Depreciation (based on Beginning Year Property Plant & Equipment)	-				468,930	470,415	467,854
Total Operating Expenses	-				2,536,331	2,599,079	2,659,620
Cost of Operation as % of Revenues (Calculation)					24.6%	24.7%	24.8%
Operating Expenses less Depreciation					2,067,401	2,128,664	2,191,766
Operating Income					7,765,122	7,908,403	8,058,012
Nonoperating Revenues (Expenses)							
Interest Income							
Interest Expense					44,392	42,912	41,482
Interest Exp as % of Debt	5.26%				5.26%	5.26%	5.26%
Total nonoperating revenues (expenses)	-				44,392.00	42,912.00	41,482.00
Income (loss) before State and Federal Taxes	-				7,720,730	7,865,491	8,016,530
State and Federal Taxes	-				2,230,519	2,272,340	2,315,976
State and Federal Tax Rate	28.89%				28.89%	28.89%	28.89%
Income After Taxes	-				5,490,211	5,593,151	5,700,554
Income After Taxes plus Interest					5,534,603	5,636,063	5,742,036
Earnings before Interest, Taxes, Depreciation, & Amortization	-				3,773,014	3,834,138	3,893,914
Income (loss) before State and Federal Taxes					7,720,730	7,865,491	8,016,530
Book Depreciation					(468,930)	(470,415)	(467,854)
Tax Depreciation					(409,241)	(412,308)	(415,402)
Difference Tax over Book Depreciation					59,689	58,107	52,452
Income Adjusted for Tax Depreciation					7,780,419	7,923,598	8,068,982
Income Tax Rate					28.89%	28.89%	28.89%
Income Taxes					2,247,763	2,289,127	2,331,129
Income After Tax					5,532,656	5,634,471	5,737,853
Deferred Income Taxes					17,244	16,787	15,153
Accumulated Deferred Income Taxes					(1,197,285)	(1,180,498)	(1,165,345)
Income After Taxes (Book Depreciation)					5,490,211	5,593,151	5,700,554
Plus Deferred Taxes					17,244	16,787	15,153
Plus Interest					44,392	42,912	41,482
After Tax Income Debt Free					5,517,359	5,619,276	5,726,883
Balance Statement							
Assets							
Current Assets							
Current Asset Balance	267,907				2,884,407	2,942,095	3,000,937
CA as % of Revenues	28.00%	28.00%	28.00%	28.00%	28.0%	28.0%	28.0%
Balance Statement							
Property Plant & Equipment							
Total PP&E							
Begin Balance					39,043,307.00	39,326,946.00	39,612,712.00
Additions					378,186.00	381,020.00	383,879.00
Retirements					(94,547.00)	(95,254.00)	(95,969.00)
End Balance	17,241,425.00				39,326,946.00	39,612,712.00	39,900,622.00
End Balance Check					39,326,946.00	39,612,712.00	39,900,622.00
Book Depreciation of Property, Plant, & Equipment							
Total Book Depreciation							
Begin Balance					(25,746,767.52)	(26,121,181.74)	(26,496,373.75)
Depreciation					(468,930.22)	(470,415.01)	(467,853.93)
Retirements					94,516.00	95,223.00	95,937.00

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base		Periods:				
		1-5	6-15	16 - 19	58	59	60
End Balance					(26,121,181.74)	(26,496,373.75)	(26,868,290.68)
End Balance Check					(26,121,181.74)	(26,496,373.75)	(26,868,290.68)
Net Plant							
Begin Balance					13,296,539.48	13,205,764.26	13,116,338.25
End Balance					13,205,764.26	13,116,338.25	13,032,331.32
Total Assest					16,090,171.26	16,058,433.25	16,033,268.32
Tax Depreciation of Property, Plant, & Equipment							
Total MACRS Depreciation							
Begin Balance							
Depreciation					(409,241.25)	(412,307.88)	(415,401.61)
Retirements					94,547.00	95,254.00	95,969.00
End Balance					(314,694.25)	(317,053.88)	(319,432.61)
End Balance Check					(314,694.25)	(317,053.88)	(319,432.61)
Net Plant							
Begin Balance					39,043,307.00	39,326,946.00	39,612,712.00
End Balance					39,032,251.75	39,295,658.12	39,581,589.39
Tax					(409,241.25)	(412,307.88)	(415,401.61)
Book					(468,930.22)	(470,415.01)	(667,853.93)
					59,688.97	58,107.13	52,452.32

Balance Statement
Liabilities
Current Liabilities
Current Liabilities — 216,239
Cl. as % of Revenues — 22.60% | 22.60% | 22.60% | 22.60%

						2,328,128	2,374,691	2,422,185
						22.6%	22.6%	22.6%
Noncurrent Liabilities								
Long Term Debt, Notes payable, net of current portion Beg	5,689,670.00					843,953.00	815,821.00	788,627.00
Additional Debt								
Debt Repayment						(28,132)	(27,194)	(26,288)
Debt Repayment years	30.00					30.00	30.00	30.00
End Long Term Debt, Notes payable, net of current portion End						815,821.00	788,627.00	762,339.00
Total noncurrent liabilities								
Deferred Tax Liabilities								
Begin Balance						1,214,529	1,197,285	1,180,498
Additions to Deferred Asset						(17,244)	(16,787)	(15,153)
Total Deferred Tax Liability						1,197,285	1,180,498	1,165,345
Total Liabilities						4,341,234.00	4,343,816.00	4,349,869.00
Equity								
Proportion of Capital	67%							
Beginning Equity Capital	11,551,755					176,231,100	181,721,311	187,314,462
Additions to Equity (Retained Earnings)						5,490,211	5,593,151	5,700,554
Deductions form Equity Dividends	0					0	0	0
Additional Paid In Capital						0	0	0
Ending Equity Capital						181,721,311	187,314,462	193,015,016
Operating Income						7,765,122	7,908,403	8,058,012
Return On Equity						4.27%	4.22%	4.17%
Total Liabilities & Stockholders Equity						186,062,545	191,658,278	197,364,885
Assets						16,090,171	16,058,433	16,033,268
Liabilities & Stockholders Equity less Assets						169,972,374	175,599,845	181,331,617
Dividend						169,972,374	175,599,845	181,331,617
Final Stockholder Equity						16,090,171	16,058,433	16,033,268
Capital Expenditures and Changes in Working Capital								
Capital Expenditures						378,186.00	381,020.00	383,879.00
Changes to Working Capital								
Current Assets	267,907					2,684,407	2,942,095	3,000,937
Current Liabilities	216,239					2,328,128	2,374,691	2,422,185
Working Capital	51,668					356,279	567,404	578,752
Changes to Working Capital						10,908	11,125	11,348
CASH FLOW								
Income from Operations						5,534,603	5,636,063	5,742,036
Non Cash Expense (depreciation)						468,930	470,415	667,854
Capital Expenditures						378,186	381,020	383,879
Change in Working Capital						10,908	11,125	11,348
Net Cash Flows						5,614,439	5,714,333	5,814,663
Period						57.5	58.5	59.5
PW Factor								
Discount Rate with growth	8.21%					8.21%	8.21%	8.21%
Discount Rate without growth	5.03%					5.03%	5.03%	5.03%
						19.881	19.881	19.881
Period Present Worth Factor (PW)						0.011	0.01	0.009
PW of Cashflow						1,227,827	1,136,067	1,040,412

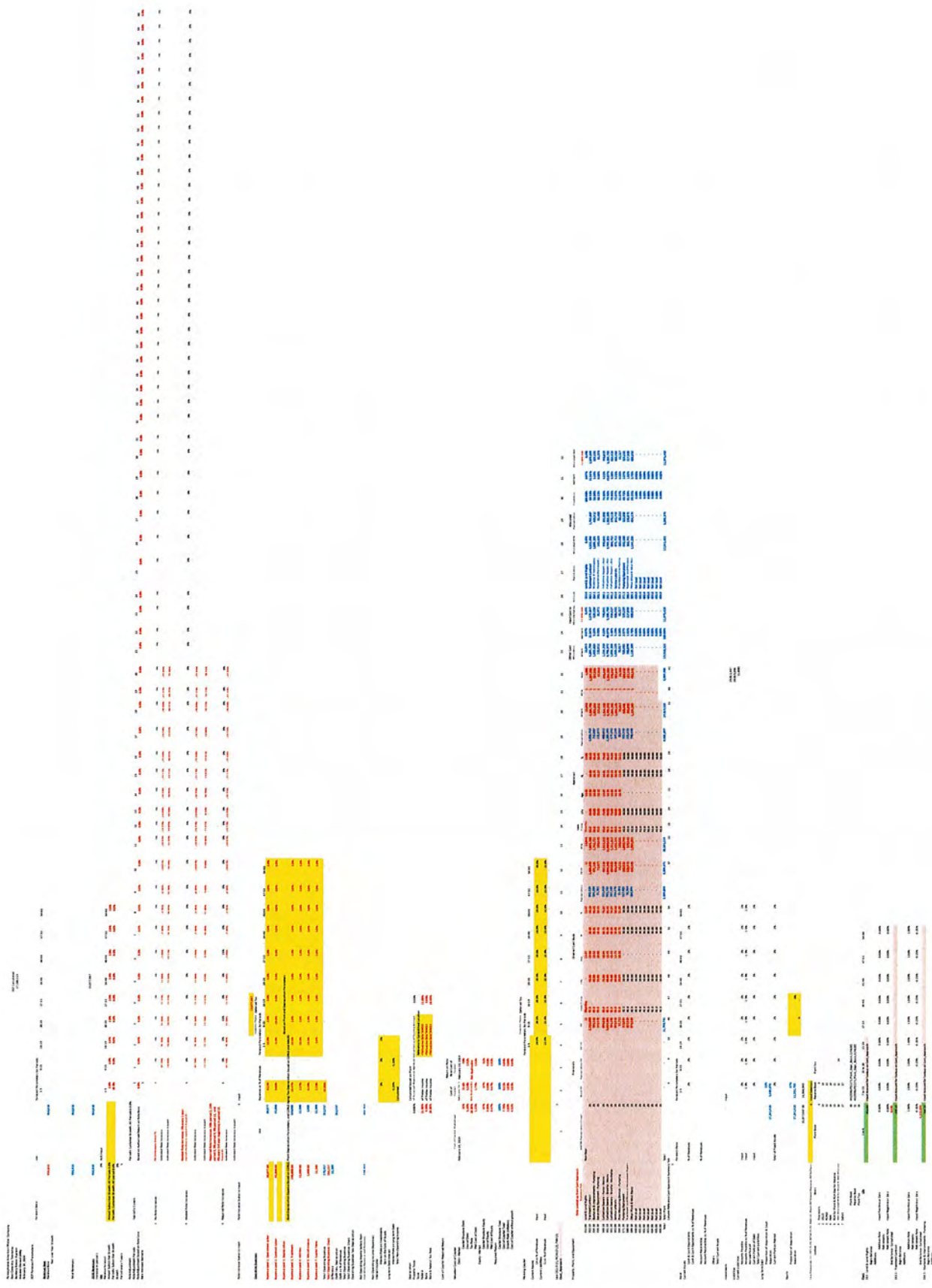
Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

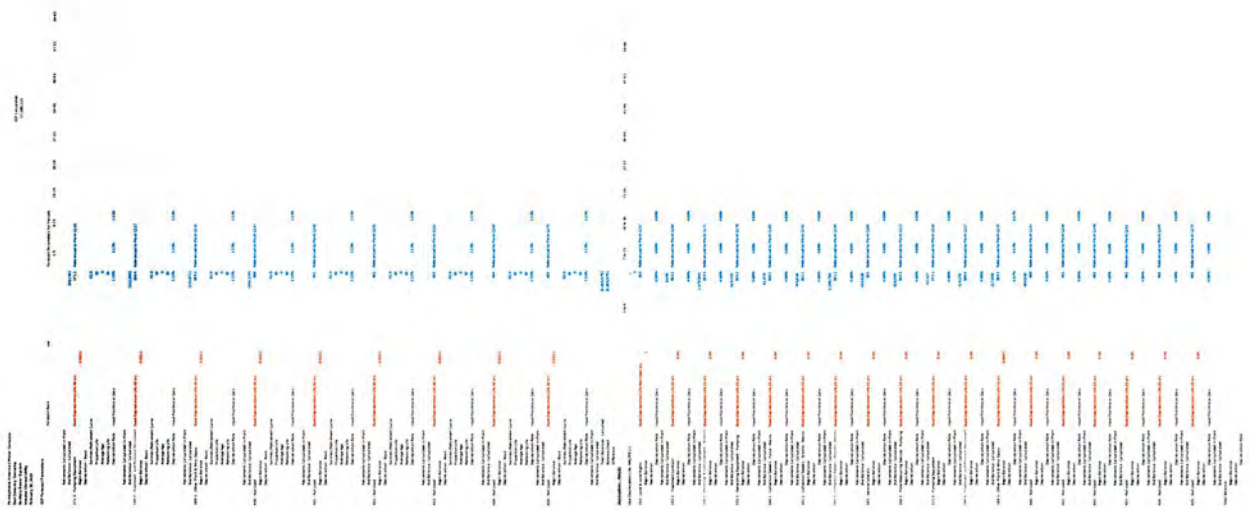
	Base	Periods: 1-5	6-15	16 - 19	58	59	60
Accumulated PW of Cashflows	17,180,123				185,656,514	186,792,581	187,832,993
CASH FLOW							
Income from Operations					5,532,656	5,634,471	5,737,853
Depreciation					(409,241)	(412,308)	(415,402)
Capital Expenditures					378,186	381,020	383,879
Change in Working Capital					10,908	11,125	11,348
Net Cash Flows					5,552,803	5,654,634	5,758,028
Period					57.5	58.5	59.5
PW Factor							
Discount Rate with growth	8.21%				8.21%	8.21%	8.21%
Discount Rate without growth	5.03%				5.03%	5.03%	5.03%
					19.881	19.881	19.881
Period Present Worth Factor (PW)					0.011	0.01	0.009
PW of Cashflow					1,214,348	1,124,198	1,030,278
Accumulated PW of Cashflows	15,760,052				177,858,070	178,982,268	180,012,546

Rate Case Forecasts							
Rate Base							
Plant In Service					39,326,946.00	39,612,712.00	39,900,622.00
Accumulated Book Depreciation					(26,121,181.74)	(26,496,373.75)	(26,858,290.68)
Working Capital					556,279.00	567,404.00	578,752.00
Accumulated Deferred Income Tax					(1,197,285)	(1,180,498)	(1,165,945)
Rate Base					12,564,758.26	12,503,244.25	12,445,738.32
Authorized Return on Rate Base	6.84%				859,429.00	855,222.00	851,289.00
O&M Expenses					2,067,401.00	2,128,664.00	2,191,766.00
Book Depreciation					468,930.22	470,415.01	467,853.93
Ratemaking Interest Expense					44,392.00	42,912.00	41,482.00
Revenue Requirement					3,440,152.22	3,497,213.01	3,552,390.93
O&M Expenses					2,067,401.00	2,128,664.00	2,191,766.00
Depreciation Expense					468,930.22	470,415.01	467,853.93
Interest					44,392.00	42,912.00	41,482.00
Pretax Income					859,429.00	855,222.00	851,289.00
State & Federal Taxes @ 28.89%					248,289.00	247,074.00	245,937.00
After Tax Income					611,140.00	608,148.00	605,352.00
Current Revenue					10,301,453.00	10,507,482.00	10,717,632.00
Revenue Requirement					3,688,441.22	3,744,287.01	3,798,327.93
Required Revenue Increase					64%	64%	65%
Income from Operations					5,536,603	5,636,063	5,742,036
Return on Rate Base					44.05%	45.08%	46.14%
Required Return	6.84%				6.84%	6.84%	6.84%
Authorized Return					859,429	855,222	851,289
After-tax Net Income					5,490,211	5,593,151	5,700,554
Taxes					2,230,519	2,272,340	2,315,975
Pre-tax Net Income					7,720,730	7,865,491	8,016,530
Interest Expense					44,392	42,912	41,482
Operating Income					7,765,122	7,908,403	8,058,012
Operating Expenses					2,536,331	2,599,079	2,659,620
Revenue Requirement					10,301,453	10,507,482	10,717,632
Required Return					859,429	855,222	851,289
Operating Expenses					2,536,331	2,599,079	2,659,620
Revenue Requirement					3,395,760	3,454,301	3,510,909
Required Rate Increase					-64.19%	-64.37%	-64.56%
					58	59	60
Proposed Rate Increase							
Rate Increase Scenario	6				0%	0%	0%
	0				58	59	60
No increases (Input 2)	2				0%	0%	0%
No Rate Increases (Input 2)	3						
Modest Rate Increases- 6% every 3 year period starting in period 3 (Input 4)	4				0.0%	0.0%	6.0%
Modest Rate Increases - (Input 4)	5						
Required Rate Increases- 35% period 3, 15% period 6, 6% period 9, 6% period 12, and 6% every 3rd year beginning in period 15 (Input 6)	6				0.0%	0.0%	0.0%
Required Rate Increases- (Input 6)	7				233.4%	233.4%	233.4%
	4				0.0%	0.0%	0.0%
Changes in Balance Sheet Accounts							
Assets							
Change in Current Assets (Source negative / Use positive)					56,557	57,688	58,842
Plant & Equipment							
Additions (Source negative / Use positive)					378,186	381,020	383,879
Liabilities							
Change in Current Liabilities (Source Positive / Use negative)					45,649	46,563	47,494
Long Term Debt							
Additional Long Term Debt Source Positive / Use Negative					-	-	-
Principal Paid Long term Debt (Source positive / Use negative)					28,132	27,194	26,288

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Potential Purchaser: Investor-Owned Utility
As of February 24, 2024

	Base	Periods: 1-5	6-15	16 - 19	58	59	60
Equity							
Additions to Equity (Source Positive / Use Negative)							
Dividend (Source negative / Use Positive)							
Funds Provided from Operations							
Sources of Funds							
Net Income (Use Negative / Source Positive)					5,490,211	5,593,151	5,700,554
Depreciation (Source positive /use negative)					468,930	470,415	467,854
Current Liabilities (Source Positive)					45,649	46,563	47,494
					6,004,790	6,110,129	6,215,902
Sources and Uses of Funds							
Sources of Funds							
Current Liabilities (Source Positive)							
Uses of Funds							
Current Assets. Increase (Use)					56,557	57,688	58,842
Fixed Assets. Assets. Increase (Use)					378,186	381,020	383,879
Total Uses of Funds					434,743	438,708	442,721
Funds from Financing Activities							
Changes in Debt							
Increase in Long Term Debt							
Repayment of Long Term Debt					(28,132)	(27,194)	(26,288)
Funds fom Equity							
Dividends Paid (Use)					0	0	0
Additional Paid in Capital (source)							
Total Funds from Financing Activities					(28,132.00)	(27,194.00)	(26,288.00)
Total Funds Needed					5,541,915.00	5,644,227.00	5,746,893.00
Financing							
Debt	33%				(1,828,832.00)	(1,862,595.00)	(1,896,475.00)
Equity	67%				(3,713,083.00)	(3,781,632.00)	(3,850,418.00)
Funds Provided by Financing					(5,541,915.00)	(5,644,227.00)	(5,746,893.00)





East Coventry Township

Sanitary Sewer Collection and Conveyance System

Appraisal Work Papers
As of February 24, 2024

Market Approach

WADS Consultants
Suite 201
8555 West Forest Home Avenue
Greenfield, Wisconsin 53228
Office Telephone: 414-529-5755
J. Weinert's Cell: 414-698-8371
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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Summary of Market Analyses

Indicators	
OCLD	15,096,169
CORLD	10,222,441
Customers	9,019,202
Cash Flows	
EBITDA Periods 1-5	13,873,550
EBITDA Periods 1-13	13,379,739
Value Line	14,592,917
Mean	12,697,336
Median	13,626,645
Conclusion	**13,161,990**

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Data

Market Sales Analysis - PP/OCLD	Simple	
All Section 1329 Acquistions		
Mean	1.9442	
Standard Deviation	0.9153	
Median	1.5139	
Water Treatment & Distribution		
Mean	1.4354	
Water Distribution		
Mean	0.00	
Wastewater Collection & Treatment		
Mean	1.7972	
Wastewater Collection		
Mean	1.8733	
Wastewater Treatment Only		
Mean	-0.07607	
WADS Conclusion	1.7972	WADS Input Cost Approach - OCLD
East ConventryTownship OCLD	8,399,671	
Market Value Indication	**15,096,169**	

Market Sales Analysis - PP/CORLD	Simple	
All Section 1329 Acquistions		
Mean	0.8168	
Standard Deviation	0.2242	
Median	0.881	
Water Treatment & Distribution		
Mean	0.853616667	
Water Distribution		
Mean	0.7686	
Wastewater Collection & Treatment		
Mean	0.8536	
Wastewater Collection		
Mean	0.8077	
Wastewater Treatment Only		
Mean	0.0459	
WADS Conclusion	0.8536	WADS Input Cost Approach - CORLD
East ConventryTownship CORLD	11,975,447	
Market Value Indication	**10,222,441**	

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Engineers Assessment	Original Cost	OCLD Depreciation	Original Cost less Depreciation (OCLD)	Purchase Price to OCLD	COR Translator	Cost New	Replacement Cost less Depreciation (CORLD)	Cost New less Depreciation (RCNLD)	Purchase Price to RCNLD
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	KLH Engineers, Inc.	108,231,570	74.0%	80,085,602	1.9854	2.986	323,139,630	48.4%	156,524,909	1.0158
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	AUS Consultants	27,146,852	68.4%	18,567,728	1.5888	2.219	60,232,051	50.8%	30,615,410	0.9636
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	PennoniAssociates, Inc.	63,480,402	72.7%	46,153,867	1.3948	1.966	124,772,705	58.6%	73,068,377	0.8810
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	AUS Consultants	8,294,930	64.9%	5,383,591	0.9287	1.817	15,073,739	61.3%	9,236,581	0.5413
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	Larson Design Group	5,294,272	66.2%	3,507,138	1.3500	2.777	14,699,682	60.5%	8,899,336	0.5320
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	Larson Design Group	4,931,649	65.6%	3,234,859	1.4731	2.859	14,097,938	56.7%	7,991,234	0.5963
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	50,250,000	Boucher & James, Inc.	19,818,218	79.6%	15,784,463	3.1835	7.342	145,511,461	34.3%	49,940,486	1.0062
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder	Dauphin	Water Treatment and Distribution	22,500,000	Herbert, Rowland & Grubic, Inc (HRG)	19,739,906	73.1%	14,433,435	1.5069	2.626	51,836,769	46.1%	23,921,473	0.9092
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	Herbert, Rowland & Grubic, Inc (HRG)	7,480,601	81.9%	6,128,876	1.40	1.424	10,652,193	80.0%	8,517,587	1.0097
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	Gannett Fleming	68,404,345	58.6%	40,057,634	2.3341	3.065	209,693,218	47.5%	99,589,819	0.9389
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	21,000,000	Carroll Engineering corporation	16,246,828	51.7%	8,407,007	2.4979	4.356	70,770,233	38.8%	27,461,356	0.7647
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	Gannett Fleming	21,023,527	57.4%	12,070,455	1.4548	2.642	55,539,558	52.2%	29,015,055	0.6052
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	PennoniAssociates, Inc.	7,666,492	67.5%	5,173,559	2.5128	5.325	40,821,536	32.8%	13,376,109	0.9719
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	PennoniAssociates, Inc.	6,843,616	78.5%	5,370,438	1.3639	2.239	15,320,978	76.1%	11,664,026	0.6280
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	PennoniAssociates, Inc.	13,389,110	68.8%	9,214,738	1.5139	2.370	31,729,237	60.7%	19,252,333	0.7246
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	PennoniAssociates, Inc.	263,682,616	72.7%	191,774,486	1.4418	3.005	792,388,731	50.4%	399,664,111	0.6918
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua Competitive 3 bidders 2 IOUs	Montgomery	Wastewater Collection	13,750,000	LTI Consultnats & AUS Consultants	15,295,347	77.0%	11,769,925	1.1682	1.686	25,786,184	71.6%	18,460,028	0.7449
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	Ebert Engineering, Inc.	32,003,924	64.5%	20,644,920	2.5672	3.030	96,986,192	53.0%	51,414,555	1.0308
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	PennoniAssociates, Inc.	43,447,309	76.9%	33,403,972	1.6444	1.979	85,964,664	67.6%	58,078,339	0.9458
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	PennoniAssociates, Inc.	19,641,520	68.9%	13,524,101	1.2940	2.540	49,898,907	60.3%	30,113,231	0.5811
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	Buchart Horn	155,875,776	62.3%	97,106,105	2.4200	3.042	474,152,569	46.1%	218,366,227	1.0762
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	Gannett Fleming	12,898,487	60.9%	7,850,687	5.2543	6.380	82,286,857	40.1%	32,994,154	1.2502
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000		19,380,636	55.6%	10,784,743	1.1127	6.972	135,118,824	33.9%	45,836,624	0.2618
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	Gateway Engineers	9,942,191	73.0%	7,260,988	2.6443	5.849	58,151,497	41.8%	24,334,695	0.7890
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	Herbert, Rowland & Grubic, Inc (HRG)	144,573,880	62.4%	90,190,859	2.5668	3.637	525,870,564	45.8%	240,895,239	0.9610
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000										
	End of Section 1329 Data																		
					Count 19			Wastewater Collection and Treatment	15					1.7972					0.8536
								Wastewater Collection	7					1.8733					0.8077

East Coventry Wastewater System Valuation as of 2-24-2024 - Created 10-11-2024

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Wenert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Engineer's Assessment	Original Cost	OCLD Depreciation	Original Cost less Depreciation (OCLD)	Purchase Price to OCLD	COR Translator	Cost New	Replacement Cost less Depreciation (CORLD)	Cost New less Depreciation (RCNLD)	Purchase Price to RCNLD
								Water Treatment and Distribution	3					1.4354					0.7686
								Water Distribution All section 1329	1										
								Mean	26					1.9442					0.8168
								Standard Deviation						0.9153					0.2242
								Median						1.5139					0.8810
																EBITDA P1			
																EBITDA P1-5			
Notes:					1			Final Purchase Price reflects the agreed upon purchase price after											

Market Comparables 4-1-2024

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

Market Sales Analysis - PP/Customer

	Simple
All Section 1329 Acquistions	
Mean	8,557
Standard Deviation	3,997
Median	8,315
Water Treatment and Distribution	
Mean	6,157
Water Distribution	
Mean	3,992
Wastewater Collection & Treatment	
Mean	10,410
Wastewater Collection	
Mean	6,268
Watewater Treatment Only	
Mean	4,142

Financial Basis[1]

Financial Markets	Market Value per Share to Book Value per Share	
Market to Book (equity)	3.21	
Market to Book (equity and debt)	2.09	
Use (equity and debt)	2.09	WADS Input

Conclusion

East ConventryTownship Customers	866	WADS Input	East ConventryTownship OCLD	6,999,001	Cost Approach - OCLD
Wastewater Collection & Treatment	10,410	WADS Input			
Collection and Treatement Customers Market Value Indication	**9,015,060**		**Market Value Indication**	**14,592,917**	
Treatement Only Market Value Indication					
Treatment Only PP/customer	4,142	WADS Input			
Treatment Only Customers	-	WADS Input			
Market Value Indication Treatment Only	-				
Total Market Value Indication	**9,019,202**				

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Number of Total Customers	Relationship to the passage of Section 1329	Average Purchase Price per Customer	AUS Market Value per Customer
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	21,953	Post	7,242.75	7,243
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	2,106	Post	14,007.60	14,008
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	5,434	Post	11,846.41	11,846
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	1,248	Post	4,006.41	4,006
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	1,186	Post	3,992.24	3,992
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	1,451	Post	3,284.08	3,284
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	50,250,000	10,500	Post	4,785.71	4,786
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder	Dauphin	Water Treatment and Distribution	22,500,000	2,325	Post	9,354.84	9,355
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	998	Post	8,617.23	8,617
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	9,000	Post	10,388.89	10,389
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	21,000,000	4,950	Post	4,242.42	4,242
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	2,006	Post	8,753.74	8,754
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	1,596	Post	8,145.36	8,145
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	1,459	Post	5,020.56	5,021
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	1,644	Post	8,485.40	8,485
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	16,473	Pending	16,785.04	16,785
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	1,428	Post	9,628.85	9,629
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	11,151	Post	4,752.94	4,753

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Number of Total Customers	Relationship to the passage of Section 1329	Average Purchase Price per Customer	AUS Market Value per Customer
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	3,918	Post	14,019.91	14,020
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	2,294	Post	7,628.60	7,629
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	15,851	Post	14,825.56	14,826
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	3,958	Pending	10,421.93	10,422
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	2,930	Post	4,095.56	4,096
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	3,976	Pending	4,828.97	4,829
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	15,000	Post	15,433.33	15,433
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000	2,281	Post	7,891.28	7,891
	End of Section 1329 Data												
					Count 19			Wastewater Collection and Treatment	15			10,410	10,410
								Wastewater Collection	7			6,268	6,267
								Water Treatment and Distribution	3			6,157	6,157
								Water Distribution	1			3,992	3,992
								All section 1329 Mean	26			8,557	8,557
								Standard Deviation				3,997	3,997
								Median				8,315	8,315

Notes:

1 Final Purchase Price reflects the agreed upon purchase price achiene acquistion application

Appendix A-5.1

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
As of February 24, 2024

Comparable Sales Approach

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

	Simple	
All Section 1329 Acquistions		
Mean	16.95	
Standard Deviation	5.91	
Median	16.94	
Conclusion	16.95	WADS Input
Water Treatment and Distribution		
Mean	14.94	
Water Distribution		
Mean	20.24	
Wastewater Collection & Treatment		
Mean	16.69	
Wastewater Collection		
Mean	17.88	
Watewater Treatment Only		
Mean	(1.19)	

Conclusion

East Coventry Cash Flows	831,408	Income Approach
Wastewater Collection & Treatment	16.69	
Market Value Indication	**13,873,550**	

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

	Simple	
All Section 1329 Acquistions		
Mean	12.04	
Standard Deviation	3.59	
Median	11.98	
Conclusion	12.04	WADS Input
Water Treatment and Distribution		
Mean	10.50	
Water Distribution		
Mean	13.59	
Wastewater Collection & Treatment		
Mean	11.93	
Wastewater Collection		
Mean	12.70	
Watewater Treatment Only		
Mean	(0.77)	

Conclusion

East Coventry Cash Flows	1,121,619	Income Approach
Wastewater Collection & Treatment	11.93	
Market Value Indication	**13,379,739**	

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Period 1	Purchase Price to EBITDA Period 1	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-5	Purchase Price to EBITDA Average Periods 1-5	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-13	Purchase Price to EBITDA Average Periods 1-13
1	A-2017-2606103	9/1/2016	PA American Water	City of McKeesport	AUS for PAWC		Allegheny	Wastewater Collection and Treatment	156,000,000	5,247,843.00	29.7265	7,409,096.00	21.0552	11,958,224.00	13.0454
2	A-2016-2580061	8/1/2016	Aqua PA	New Garden Twp. SA	AUS for Seller		Chester	Wastewater Collection and Treatment	29,500,000	1,409,768.00	20.9254	1,717,347.00	17.1777	2,625,115.00	11.2376
3	A-2017-2605434	11/16/2016	Aqua PA	Limerick Township			Montgomery	Wastewater Collection and Treatment	75,100,000	2,154,798.00	34.8525	3,542,124.20	21.2020	5,212,045.23	14.4089
4	A-2018-3001582	12/10/2017	Aqua PA	East Bradford Township	AUS for Seller		Chester	Wastewater Collection and Treatment	5,000,000	100,053.00	49.9735	283,367.00	17.6450	632,892.00	7.9002
5	A-2018-3003519	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Water Distribution	4,734,800	58,541.50	80.8794	233,922.00	20.2409	348,408.96	13.5898
6	A-2018-3003517	4/20/2018	SUEZ	Mahoning		Competitive 2 bidders	Carbon	Wastewater Collection	4,765,200	58,541.50	81.3987	233,922.00	20.3709	348,408.96	13.6770
7	A-2019-3008491	6/1/2018	Aqua PA	Cheltenham	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	50,250,000	5,270,576.00	9.5341	4,754,020.00	10.5700	4,326,210.00	11.6152
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder	Dauphin	Water Treatment and Distribution	22,500,000	1,568,999.00	14.3404	2,278,514.00	9.8749	3,893,757.00	5.7785
9	A-2018-3002437	1/1/2017	PA American Water	Sadsbury	AUS for PAWC		Chester	Wastewater Collection	9,250,000	580,238.00	15.9417	714,645.00	12.9435	895,128.00	10.3337
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		Berks	Wastewater Collection and Treatment	96,000,000	7,121,227.00	13.4808	7,279,978.00	13.1869	8,011,315.00	11.9831
11	A-2019-3009052	10/29/2018	Aqua PA	East Norriton	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	21,000,000	925,477.00	22.6910	1,265,269.00	16.5973	2,011,465.00	10.4402
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	680,463.00	25.8060	1,039,593.00	16.8912	1,446,948.00	12.1359
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	404,071.00	32.1726	600,765.00	21.6391	1,209,765.00	10.7459
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	217,969.00	33.6057	398,458.00	18.3834	817,993.00	8.9548
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	193,013.00	72.2749	392,972.00	35.4987	844,046.00	16.5275
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	25,621,637.00	10.7917	25,883,282.00	10.6826	28,960,161.85	9.5476
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	Competitive 2 bidders PAWC & Aqua	Montgomery	Wastewater Collection	13,750,000	768,794.00	17.8852	845,182.00	16.2687	932,042.00	14.7526
18	A-2021-3024267	9/17/2020	Aqua PA	Lower Makefield	AUS for Seller	Competitive 3 bidders 2 IOUs AQUA & PAWC & 1 Muni	Bucks	Wastewater Collection and Treatment	53,000,000	2,472,701.00	21.4341	2,839,988.00	18.6621	3,432,340.00	15.4414
19	A-2021-3026132	1/8/2021	Aqua PA	East Whiteland Township	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	14,465,272.00	3.7974	15,872,367.00	3.4607	18,521,227.00	2.9658
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		Chester	Wastewater Collection and Treatment	17,500,000	723,189.00	24.1984	892,978.00	19.5973	1,168,600.00	14.9752

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	Type of Purchase Process	County	Type of Facility	Initial Purchase Price	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Period 1	Purchase Price to EBITDA Period 1	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-5	Purchase Price to EBITDA Average Periods 1-5	Earnings before Interest, Taxes, and Depreciation and Amortization (EBITDA) Average Periods 1-13	Purchase Price to EBITDA Average Periods 1-13
21	A-2021-3024681	4/6/2021	PA American Water	City of York	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	12,149,592.00	19.3422	13,874,600.00	16.9374	18,001,021.00	13.0548
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	706,202.00	58.4110	1,848,649.20	22.3136	2,092,981.46	19.7087
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	502,680.00	23.8720	724,217.00	16.5696	715,085.06	16.7812
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	1,303,713.00	14.7272	1,488,494.60	12.8989	1,661,649.46	11.5548
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	13,603,503.00	17.0177	17,584,863.20	13.1647	23,491,122.15	9.8548
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000						
	End of Section 1329 Data														
					Count 19			Wastewater Collection and Treatment	15				16.6868		11.9289
								Wastewater Collection	7				17.8783		12.7001
								Water Treatment and Distribution	3				14.9426		10.5048
								Water Distribution	1				20.2409		13.5898
								All section 1329 Mean	26				16.9533		12.0404
								Standard Deviation					5.9108		3.5888
								Median					16.9374		11.9831

Notes:

1 Final Purchase Price reflects the agreed upon purchase price achie

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	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	AUS for PAWC		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	AUS for Seller		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	AUS for Seller		Chester	Wastewater Collection and 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	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	50,250,000	50,250,000	10,500	Post
8	A-2019-3006880	11/14/2018	PA American Water	Steelton	AUS for PAWC	Competitive 4 bidder	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	AUS for PAWC		Chester	Wastewater Collection	9,250,000	8,600,000	998	Post
10	A-2018-3004933	5/28/2018	PA American Water	Exeter	AUS for PAWC		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	AUS for Seller	Competitive 3 bidder	Montgomery	Wastewater Collection	21,000,000	21,000,000	4,950	Post
12	A-2019-3014248	9/30/2018	PA American	Kane	AUS for PAWC		McKean	Wastewater Collection and Treatment	17,560,000	17,560,000	2,006	Post
13	A-2020-3019634	12/10/2019	PA American	Royersford	AUS for PAWC		Montgomery	Wastewater Collection and Treatment	13,000,000	13,000,000	1,596	Post
14	A-2020-3019859	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Water Treatment and Distribution	7,325,000	7,325,000	1,459	Post
15	A-2020-3014248	12/17/2019	PA American	Valley	AUS for PAWC		Chester	Wastewater Collection	13,950,000	13,950,000	1,644	Post
16	A-2019-3015173	12/31/2019	Aqua PA	Delaware County Regional Water Quality Authority (DELCORA)			Delaware	Wastewater Collection and Treatment	276,500,000	276,500,000	16,473	Pending
17	A-2020-3021460	4/28/2020	PA American Water	Upper Pottsgrove	AUS for PAWC	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	AUS for Seller	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	AUS for Seller		Chester	Wastewater Collection and Treatment	54,930,000	54,930,000	3,918	Post

Water and Wastewater System Sales

Comparable Sales Approach

Market Sales Data post Section 1329

RowID	Pennsylvania Public Utility Commission Case	Approximate Date	Buyer	Seller	AUS Consultants (AUS) or Weinert Appraisal and Depreciation Services, LLC (WAD)	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
20	A-2021-3027268	1/20/2021	Aqua PA	Willistown Township	AUS for Seller		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	AUS for PAWC		York	Wastewater Collection and Treatment	235,000,000	235,000,000	15,851	Post
22	A-2022-3033138		Aqua PA	City of Beaver Falls				Wastewater Collection and Treatment	41,250,000	41,250,000	3,958	Pending
23	A-2022-3034143	7/8/2022	Aqua PA	Municipal Authority of the Borough of Shenandoah				Water Treatment and Distribution	12,000,000	12,000,000	2,930	Post
24	A-2021-3024058	1/1/2023	PA American Water	Borough of Brentwood	WAD for PAWC			Wastewater Collection	19,200,000	19,200,000	3,976	Pending
25	A-2022-3037047	10/11/2022	PA American Water	Butler Area Sewer Authority	WAD for PAWC			Wastewater Collection and Treatment	231,500,000	231,500,000	15,000	Post
26	A-2023-3041695		Aqua PA	Greenville sewage Authority				Wastewater Collection and Treatment	18,000,000	18,000,000	2,281	Post
	End of Section 1329 Data											
					Count 19			Wastewater Collection and Treatment	**15**			
								Wastewater Collection	**7**			
								Water Treatment and Distribution	**3**			
								Water Distribution	**1**			
								All section 1329 Mean	26			
								Standard Deviation				
								Median				

Notes:

1 Final Purchase Price reflects the agreed upon purchase price achieved to settled the acquistion application

Water and Wastewater General Information
Appraisal Work Papers

Value Line Investment Surveys & Selected Yields
Water Industry
Market and Financial Ratios

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Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

Comparable Sales Approach

Financial Basis[1]

	Industry Averages	American & Aqua Averages	American States Water	American Water	Essential Utilities	California Water	Middlesex Water	SJW Corp	
Price per Share			93.72	153.02	47.57	61.78	86.05	81.02	
Book value per share			19.8	42.8	20.8	23.45	22.55	36.55	
Market to Book Equity Ratio			4.73	3.58	2.29	2.63	3.82	2.22	
Minimum	2.22	2.29							
Mean	3.21	2.935		3.58	2.29				
Standard Deviation	0.91	0.645							
Weighted Market to Debt Ratio	3.18		19,375.29	141,991.01	43,542.01	11,878.99	6,977.75	8,689.35	232,454.40
Median	3.105	2.935							
Maximum	4.73	3.58							
Debt (Total) $s millions			685.7	11,839.0	6,536.8	1,129.7	308.8	1,458.0	
Outstanding Shares (millions)			36.39	181.83	262.29	54.82	17.64	30.32	
Debt per share			18.84	65.11	24.92	20.61	17.51	48.1	
Equity (Total) $s millions			3,410.55	27,823.29	12,477.18	3,387.03	1,517.84	2,456.12	
Total Capital (Debt + Equity)			4,096.25	39,662.29	19,013.98	4,516.73	1,826.64	3,914.12	73,030.01
			0.06	0.54	0.26	0.06	0.03	0.05	1.00
Market Value per Share (Equity+Debt)			112.56	218.13	72.49	82.39	103.56	129.12	
Book Value per Share (Equity+Debt)			38.64	107.91	45.72	44.06	40.06	84.65	
Market to Book (Total Capital) Ratio			2.91	2.02	1.59	1.87	2.59	1.53	
Minimum	1.53	1.59							
Mean	2.09	1.805		2.02	1.59				
Standard Deviation	0.51	0.215							
Weighted Market to Book (Debt&Equity) Ratio	1.94		11,920.10	80,117.83	30,232.22	8,446.28	4,730.99	5,988.61	141,436.03
Variance to Wtd Mean	0.1189		0.97	0.08	(0.35)	(0.07)	0.65	(0.41)	
Median	1.945	1.805							
Maximum	2.91	2.02							

1. Value Line Investment Survey January 10, 2020
2. Value Line dropped Connecticut Water in its January 10, 2020 publication

Bulletin No. 199

1912 to January1, 2024

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

Trends of Construction Costs

COMPILED & PUBLISHED BY
Whitman, Requardt & Associates, LLP
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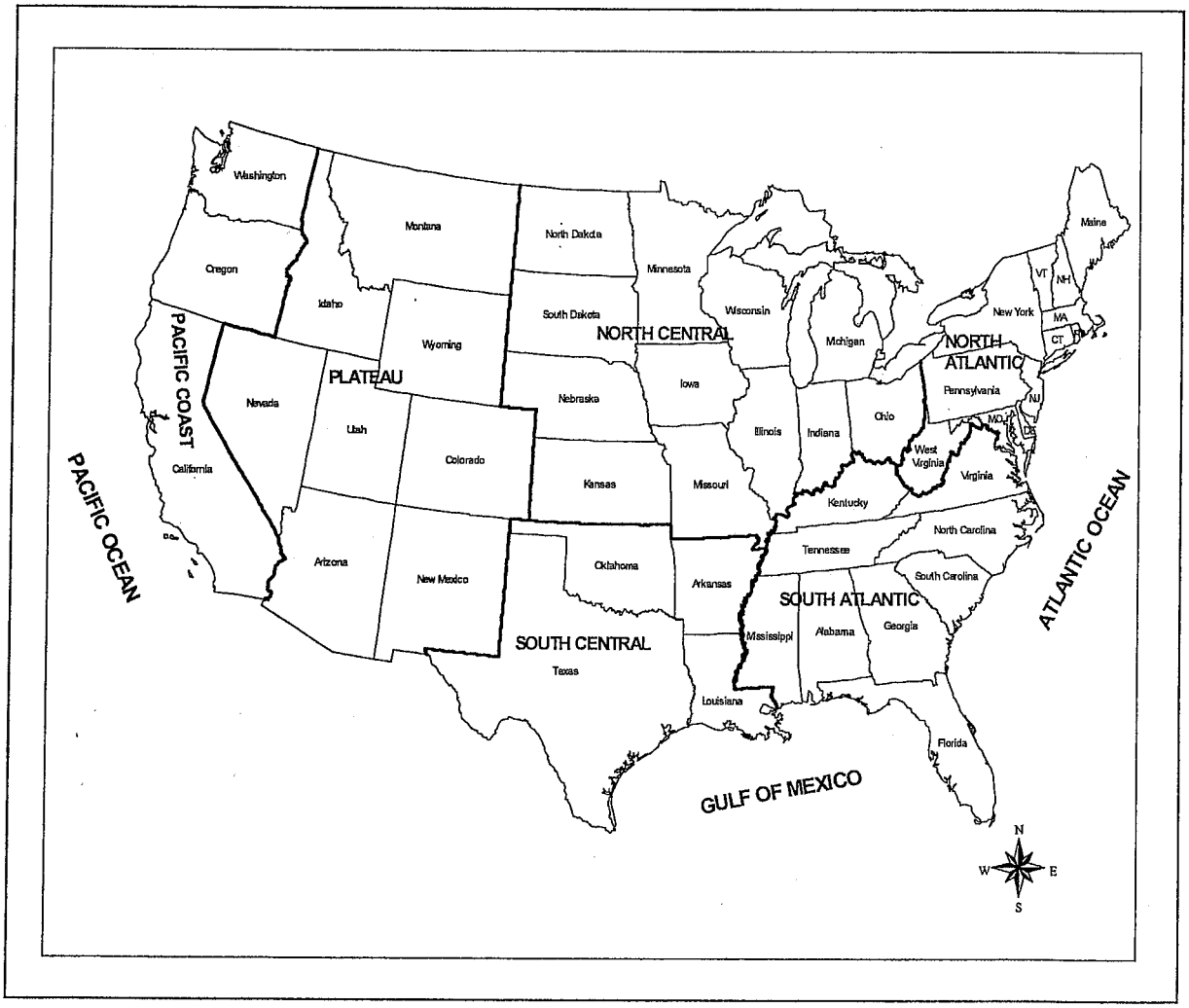
TRENDS OF PUBLIC UTILITY CONSTRUCTION COSTS

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. 199

During the twelve-month period ending January 1, 2024, the average index of all geographical regions for Total Gas Plant increased 1.0%, and the comparable index for Electric Plant-All Steam Generation increased 9.8%.

May 2024
Whitman, Requardt and Associates, LLP

Cost Trends Of

Water Utility Construction

COST TREND TABLES
1912 to January 1, 2024

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
1	**Source of Supply Plant**															
2	Collecting & Impounding Res.	305	7	7	7	7	9	13	15	15	17	16	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	18
9	Electric Pumping Equipment	311	-	-	15	15	17	20	22	24	24	23	21	22	23	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	18
16	Large Treatment Plant Equip.	320	9	9	9	9	11	14	16	17	20	19	18	18	20	20
17	Small Treatment Plant Equip.	320	10	10	10	10	13	17	19	19	22	20	20	20	21	20
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	4	4	4	12	15	17	19	20	15	13	12	13	13	13
24	Elevated Steel Tanks	330	4	4	4	11	14	16	18	19	16	13	11	12	11	10
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	21
35	Cast Iron Mains	331	9	10	9	9	12	18	20	22	25	24	22	23	24	23
36	Cement-Asbestos Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	Steel Mains	331	6	7	6	7	8	11	13	13	14	15	14	14	14	15
38	PVC Mains	331	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	Services Installed	333	6	6	5	6	6	9	10	11	12	13	12	12	13	13
40	Meters	334	23	23	23	23	26	29	35	37	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	23
47	Clarifier Equipment-Installed		-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	Filter Gallery Piping-Installed		8	8	8	8	10	14	16	18	20	18	17	18	19	19
49																
50																
51																
52																
53																
54																
55																
56																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
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																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
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	NARUC	COST INDEX NUMBERS													
			1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
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																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS													
			1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
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	NARUC	COST INDEX NUMBERS													
			1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
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																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	COST INDEX NUMBERS									2005		2006		2007	
			1996	1997	1998	1999	2000	2001	2002	2003	2004	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1
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)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	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																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	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																

COST TRENDS OF WATER UTILITY CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	NARUC	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	676	730	765									
3																
4																
5																
6																
7	**Pumping Plant**															
8	Structures & Improvements	304	881	905	912	953	974									
9	Electric Pumping Equipment	311	1593	1787	1801	1841	1983									
10																
11																
12																
13																
14	**Water Treatment Plant**															
15	Structures & Improvements	304	881	905	912	953	974									
16	Large Treatment Plant Equip.	320	1012	1065	1122	1138	1207									
17	Small Treatment Plant Equip.	320	1188	1259	1329	1349	1441									
18																
19																
20																
21																
22	**Transmission Plant**															
23	Steel Reservoirs	330	1113	1218	1219	1237	1232									
24	Elevated Steel Tanks	330	1656	1813	1814	1840	1833									
25	Concrete Reservoirs	330	-	-	-	-	-									
26																
27	Cast Iron Mains	331	1065	1132	1220	1240	1357									
28	Steel Mains	331	1046	1057	1270	1282	1296									
29	Concrete Cylinder Mains	331	724	751	776	806	831									
30																
31																
32																
33	**Distribution Plant**															
34	Mains-Average All Types	331	984	1021	1080	1087	1165									
35	Cast Iron Mains	331	1048	1101	1170	1185	1308									
36	Cement-Asbestos Mains	331	1007	1036	1167	1179	1185									
37	Steel Mains	331	881	898	918	910	950									
38	PVC Mains	331	503	505	594	595	581									
39	Services Installed	333	782	797	840	851	875									
40	Meters	334	803	826	973	973	1074									
41	Meter Installations	334	895	898	943	944	964									
42	Hydrants Installed	335	1283	1373	1429	1429	1474									
43																
44																
45	**Miscellaneous Items**															
46	Flocculating Equipment-Installed		2850	3009	3171	3197	3394									
47	Clarifier Equipment-Installed		1860	1999	2164	2199	2394									
48	Filter Gallery Piping-Installed		988	1023	1090	1090	1190									
49																
50																
51																
52																
53																
54																
55																
56																

Cost Trends Of

Building Construction

COST TREND TABLES
1912 to January 1, 2024

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
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																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
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	Lumber 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																	

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
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																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
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																	

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	CONSTRUCTION, MATERIAL, AND LABOR	COST INDEX NUMBERS															
		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
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																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 Jan. 1	2005 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																

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COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	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																	

Line	CONSTRUCTION, MATERIAL, AND LABOR	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

COST TRENDS OF BUILDING CONSTRUCTION

NORTH ATLANTIC REGION (1973=100)

Line	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	712	770	788											
3	Brick Building Construction	850	848	934	968	859											
4	Structural Steel Erected	946	886	726	837	852											
5	Reinf. Concrete (Ready-Mix)	707	730	707	723	738											
6	Reinf. Concrete (Plant-Mix)	664	706	651	686	702											
7																	
8	**Building Material**																
9	Ready-Mix Concrete	554	632	597	631	642											
10	Lumber for Reinf. Concrete	405	579	347	445	433											
11	Steel Bars for Reinf. Concrete	781	767	578	631	553											
12	Common Brick	1198	1198	2053	2053	1226											
13	Concrete Block	553	633	654	755	752											
14																	
15	**Labor**																
16	Building Trades Labor	779	779	798	798	825											
17	Heavy Constr. Trades Labor	778	778	795	795	825											
18	Labor for Reinf. Concrete	762	762	779	779	808											
19	Common Labor	801	801	814	814	852											
20	Electricians	848	848	872	872	905											
21	Pipefitters	843	843	860	860	897											
22	Plumbers	813	813	837	837	858											
23																	

Line	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																	

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
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															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
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-Electrric	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															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953
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-Electrric	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															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
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-Electrric	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	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															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
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															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS													
		1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
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-Electrric	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															
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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	CONSTRUCTION AND EQUIPMENT	COST INDEX NUMBERS														
											2005		2006		2007	
		1996	1997	1998	1999	2000	2001	2002	2003	2004	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 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-Electrric	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																

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	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-Electrric	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															

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UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	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															

M

UTILITY PLANT MATERIALS

ALL REGIONS (1973=100)

Line	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	921	954	965									
2	Coal & Ash Handling Equipment	774	814	842	839	862									
3	Pumps	1821	2046	2070	2152	2328									
4	Steam Pipe	649	701	720	672	708									
5	Cranes	1494	1757	1910	1910	1974									
6	Regulators	547	612	669	664	632									
7	Switchboards	6250	7005	8408	8819	9245									
8	Power Transformers	1032	1101	1122	1132	1147									
9	Oil Switches	571	630	668	684	693									
10	Motors	1065	1188	1176	1118	1185									
11	Line Transformers	1293	1405	1980	2041	2404									
12	Meters-Electrric	375	375	559	559	568									
13	Treated Pine Poles	766	757	769	782	807									
14	Standard Cross Arms	564	564	584	609	691									
15	Standard Galv. Steel Guy Wire	610	769	769	769	989									
16	Fibre Conduit	627	627	1246	1246	1216									
17	Plastic Conduit	708	708	1038	1038	985									
18	Mercury Luminaires w/Standard	1154	1267	1367	1463	1599									
19	Power Wire & Control Cable	382	411	408	402	418									
20	Overhead Conductor-Transmission	605	605	1304	1304	1470									
21	Underground Conductor-Transmission	1902	1864	2334	2541	2650									
22	Overhead Conductor-Distribution	628	630	1369	1369	1497									
23	Underground Conductor-Distribution	816	695	1146	1215	1258									
24	Service Cable	540	546	1207	1208	1225									
25	Condensers & Tubes	785	835	772	823	809									
26	Turbo-Generators	859	799	672	813	819									
27															
28	Gas Compressors	853	952	989	1034	1051									
29	Gas Transmission Line Pipe	1185	1227	1132	988	983									
30	Steel Distribution Pipe	2304	2276	3248	3189	3154									
31	Plastic Pipe	603	603	767	767	727									
32	Meters-Gas	529	539	580	591	635									
33	House Regulators	650	650	769	769	900									
34															
35	Cast Iron Pipe	876	948	990	990	1347									
36	Cast Iron Fittings	3004	3279	3858	3858	3974									
37	Ductile Iron Pipe	781	781	781	781	781									
38	Chemical Feeders-Small	2503	2774	2892	2975	3305									
39	Chemical Feeders-Large	1307	1452	1528	1592	1769									
40	Gate Valves	1260	1365	1758	1758	1867									
41	Meter Yokes	2193	2193	2369	2369	2369									
42	Corporation Stops	1068	1068	1153	1153	1153									
43	Curb Stops	1152	1152	1244	1244	1244									
44	Hydrants	2219	2454	2522	2522	2596									
45	Meters-Water	803	826	973	973	1074									
46															
47															
48															
49															
50	Construction Equipment	683	721	743	776	799									
51															
52															
53															
54															
55															
56															

BULLETIN NO. 200

1912 to July 1, 2024

THE

HANDY-WHITMAN INDEX

Of

Public Utility Construction Costs©

TRENDS OF CONSTRUCTION COSTS

Preliminaries

Compiled and Published by

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HANDY-WHITMAN INDEX OF PUBLIC UTILITY CONSTRUCTION COSTS

PRELIMINARY NUMBERS BULLETIN 200

WATER INDEXES 7/1/24

LINE	REGION 1	REGION 2	REGION 3	REGION 4	REGION 5	REGION 6
2	785	712	772	685	739	813
8	985	872	956	854	961	1025
9	2027	2027	2027	2027	2027	2027
15	985	872	956	854	961	1025
16	1218	1158	1199	1152	1178	1291
17	1457	1424	1455	1430	1451	1543
23	1281	1281	1281	1281	1281	1281
24	1907	1907	1907	1907	1907	1907
27	1345	1346	1345	1368	1375	1416
28	1305	1238	1250	1307	1249	1311
29	839	785	809	779	793	856
34	1160	1166	1173	1125	1149	1217
35	1298	1405	1398	1366	1384	1419
36	1188	1020	1062	989	1027	1038
37	951	848	895	835	851	970
38	582	525	555	517	526	568
39	887	752	846	750	764	887
40	1074	1074	1074	1074	1074	1074
41	967	837	898	843	855	977
42	1474	1428	1421	1429	1426	1513
46	3554	3575	3558	3639	3596	3674
47	2432	2296	2424	2338	2419	2500
48	1180	1015	1145	1088	1170	1293

HANDY-WHITMAN INDEX OF PUBLIC UTILITY CONSTRUCTION COSTS

PRELIMINARY NUMBERS BULLETIN 200

BUILDING INDEXES 7/1/24

LINE	REGION 1	REGION 2	REGION 3	REGION 4	REGION 5	REGION 6
2	786	642	751	651	694	808
3	858	762	865	812	895	864
4	852	777	819	768	785	828
5	744	669	738	558	631	815
6	695	569	689	561	620	767
9	705	1104	955	678	906	963
10	347	460	536	554	568	625
11	536	552	520	538	538	550
12	1226	2045	1562	1949	2604	1068
13	807	772	607	993	570	578
16	825	545	722	538	582	843
17	825	601	728	558	576	828
18	808	582	726	522	567	822
19	852	629	731	531	569	819
20	905	565	755	572	602	960
21	897	621	767	588	660	903
22	858	587	730	582	659	918

HANDY-WHITMAN INDEX OF PUBLIC UTILITY CONSTRUCTION COSTS

PRELIMINARY NUMBERS BULLETIN 200

MATERIAL INDEXES 7/1/24

LINE	INDEX
1	994
2	887
3	2349
4	706
5	1979
6	636
7	9707
8	1150
9	728
10	1281
11	2471
12	568
13	810
14	699
15	989
16	1216
17	985
18	1725
19	431
20	1470
21	2664
22	1514
23	1258
24	1276
25	799
26	833
28	1085
29	979
30	3175
31	727
32	635
33	900
35	1294
36	3974
37	781
38	3317
39	1769
40	1867
41	2369
42	1153
43	1244
44	2596
45	1074
50	806

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AUS Telephone Plant Index

Cost Trend Tables from 1946 to July 1, 2024

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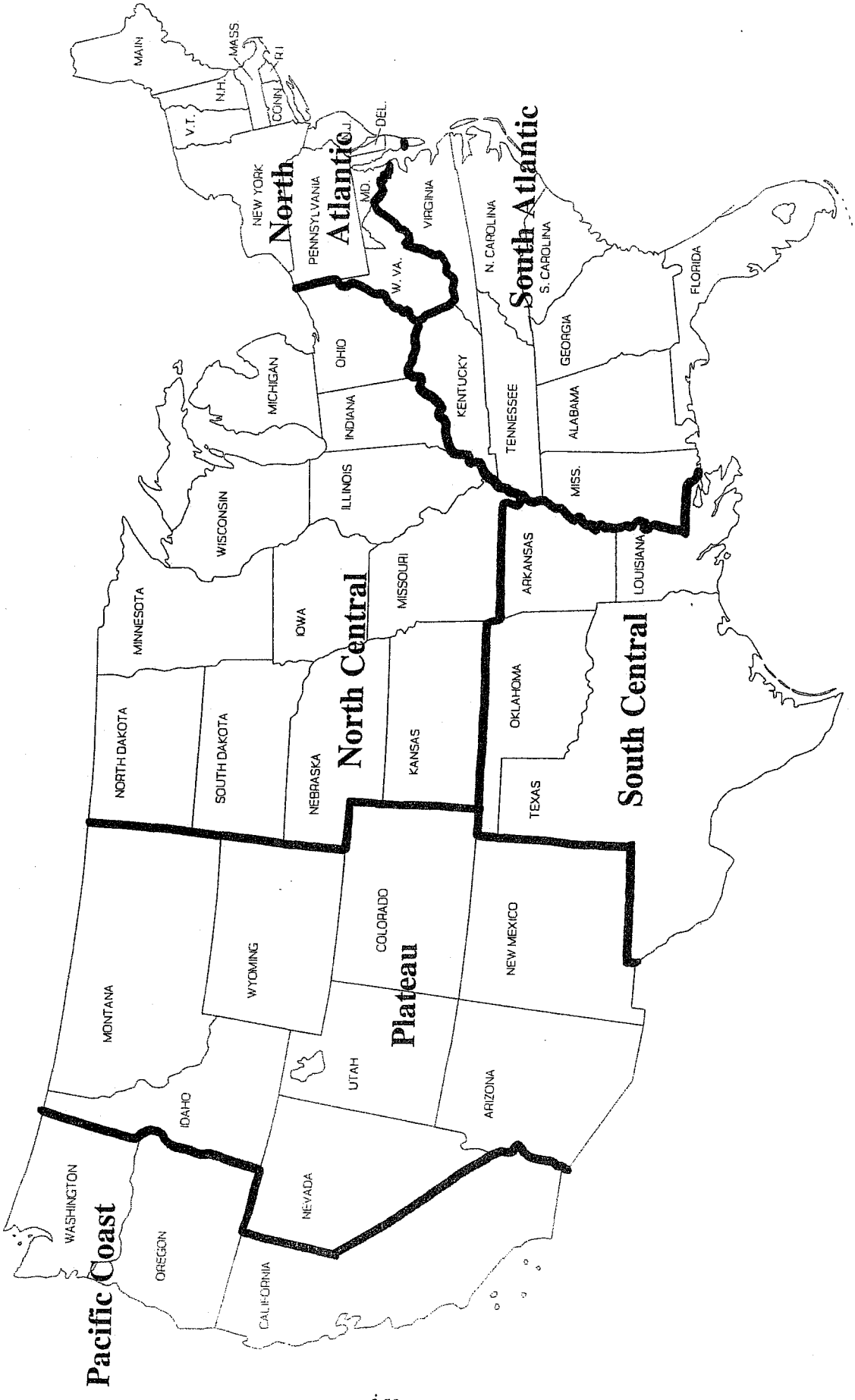
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SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
North Central
South Central
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISS.
ALABAMA
GEORGIA
FLORIDA
S. CAROLINA
N. CAROLINA
VIRGINIA
W. VA.
PENNSYLVANIA
NEW YORK
MD.
DEL.
N.J.
North Atlantic
South Atlantic
MAIN
N.H.
V.T.
MASS.
R.I.
CONN.

FOREWORD

The AUS Telephone Plant Index, which follows this foreword was first introduced in 1977 by Associated Utility Services, Inc., and published as part of the Handy-Whitman Index of Public Utility Construction Costs through 1989. In 1990 AUS Consultants, the successor company to Associated Utility Services, Inc., decided to publish the Telephone Plant Index under the name C.A. Turner Utility Reports publication division. In 2005 the index changed its name from C.A. Turner Telephone Plant Index to AUS Telephone Plant Index.

The 1990 AUS Telephone Plant Index (TPI) was the first nationally available TPI based on the Federal Communication Commission (FCC) Uniform System of Accounts (USOA) Part 32. The prior published TPI, also prepared by AUS staff, was based on the earlier USOA Part 31 Standards.

Telephone Plant Index Description

The TPI consists of a separate cost index series for each of six geographic regions shown on the map at page iv. These regions are designated: North Atlantic, South Atlantic, North Central, South Central, Plateau, and Pacific Coast. The regional designation are the same as those used in the prior issues of the cost index and are based on similarity of characteristics among the contiguous 48 states.

Each cost index series within a region consists of one index labeled "Total Plant Account" and up to 31 individual cost index series for the individual plant account identified in the left hand columns.

The Base Year for each cost index is 1973=100. Some plant accounts will not show an index number of 100 at year 1973 due to a subsequent adjustment for FCC Part 31 to Part 32, changes explained later in this foreword. In a few accounts the item described in the account was not included in the index series until after 1973 and the base year is considered the first year of entry.

The index for most plant accounts begins with a single entry in year 1946 and continues with a single number for each year through 1973. Beginning in 1974 there are two index numbers for each year; one for January 1 and one for July 1. These numbers represent the prevailing wages and material prices and weightings at that point in time.

Index History

An index is a tool for identifying the relative price change of an item, or group of items over an identified period of time. Price indexes have been in use for many years for a variety of reasons. One example is an index developed in the eighteenth century by an Italian named Carli to determine the effect of the discovery of America upon the level of prices in Italy of three commodities between the years 1500 and 1750. In the current century, numerous organizations, including the United States Bureau of Statistic, have developed a variety of indexes ranging from the cost of basic commodities to manufactured goods and building construction cost.

Interest in telephone utility cost indexes has varied over time depending on the need to develop reproduction cost values for utility properties. Previous uses of cost indexes included such things as the determination trended original cost in fair value rate jurisdictions and current cost pricing for FASB-33 financial accounting disclosures. Due to changes in rate regulation proceedings and financial disclosure requirements, the need in these two specific areas has declined. Other areas in which reproduction cost indexes were utilized included insurance valuations, property tax valuations, retirement accounting and cost forecasting, etc.

Most recently, interest in cost indexes for the telecommunication industry has increased due to the possible implementation of price cap regulation. This form of regulation incorporates the use of changes in price levels by regulators to set rates. Under one proposal, customer tariff prices are adjusted to give consideration to productivity improvements, therefore, the development of the construction cost indexes will have an indirect bearing on the level of the company revenue requirements.

Index Design

The telephone plant index was designed as a product which could be utilized by any of the various telephone operating companies to develop the reproduction cost of the company's property at the selected test year date. Due to the variation of many design construction specifics from one company to another, it is impossible to produce an index which will exactly mirror the construction cost changes for each company. In circumstances where companies desire a more specific reproduction cost of their property, a custom index should be prepared or, alternately, the company's property should be inventoried and unit priced. Such unit cost work efforts, of course, will be significantly more expensive and time consuming to complete.

As indicated, the telephone plant index is a standard index which is published on a semi-annual basis. The yearly average index is calculated via a 1-2-1 weighting process which is the sum of 25% of the January index, 50 of the July index, and 25% of the succeeding year's January index.

In general terms, the telephone plant index was constructed around the FCC Part 32 system of accounts to aid companies in ease of application of the published index. Each embedded property account was reviewed to determine the components which comprise the large segment of the property investment in each account. In this manner, the resulting telephone plant index was a reasonable proxy for determining the reproduction cost of the embedded investment of the independent telephone industry.

With the exception of the General Support Asset Group, the FCC Part 32 based indexes were adjusted for all index years 1987 and prior to compensate for the change in overhead capitalization policies effective with the new regulations. That is, under FCC Part 31 regulation, a greater level of overheads were previously incorporated in the plant in service investments contained on the company's books and records. The adjusted indexes for the years 1946 through 1987, when applied to the company's original costs, will produce the applicable reproduction cost under FCC Part 32 accounting treatment. The index adjustment for Part 31 to Part 32 accounting results in the plant accounts not having an index number of 100 at the 1973 base year.

The AUS Telephone Plant Index was designed around thirty-six component indexes representing the basic components of material and labor which make up the construction of the various telephone plant accounts. The components include such items as Buildings, Switching Equipment, Circuit Equipment, Poles, Cable, Wire Vehicles, Tools, Furniture, Installer Labor and Lineman Labor, etc. The components were composited together into account level indexes based upon material and labor weights derived from a study of independent telephone construction cost experience.

Introduction of new technologies into a reproduction cost index required the review of composite weight included in development of the account level index to reflex the new mix of property.

The goal of the telephone plant index was to produce a product which when utilized together with each companies' books and records would produce a reproduction cost value.

The AUS Telephone Plant Index does not reflect replacement cost inasmuch as it was designed to produce the reproduction cost (the cost in today's dollars to reproduce the company's embedded plant in service).

Index Functions

The AUS Telephone Plant Index series was initially prepared to address a very specific function. That is, it was designed to enable companies to produce trended original cost values to the historical original cost of plant in service on the companies' books and records. This trended original cost is a general representation of the cost to reconstruct the property in question at the price level of the selected period. If a company desires a more specific estimate of reconstruction, the property specific indexes can be developed giving consideration to the actual history of the company's wages and material cost in comparison to the labor and material costs. For an even more specific cost estimated to rebuild the plant in serve, engineering estimated can be completed based upon the property inventory and the current unit costs for constructing the various plant categories.

In summary, the index was designed to be applied on a vintage and account level basis to determine the reproduction cost of local distribution companies' plant in service, as of the selected price level.

A tool can be utilized correctly only within the boundaries for which the product was originally designed. Uses above and beyond the scope of the original design may or may not produce reliable results. That is, the use of a generalized index to prepare a reproduction cost will provide general results within the range of reasonableness. If more specific or exact results are required, alternative methods or procedures (i.e., custom indexes or specific detail pricing) should be employed.

An effort has been made to carefully construct an index which produces a reasonable proxy of reproduction cost for the telephone plant or local distribution companies giving consideration to the fact that there are variances in material and labor costs, as well as, construction methods and practices from one company to another. Nevertheless, we believe that there is sufficient similarity in the cost trends to make the AUS Telephone Plant Index a useful tool when carefully applied to a company's historical cost base.

North Atlantic

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBER																LINE NO
			1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	
1	Total Plant.....		85	89	91	91	92	95	96	96	94	94	97	97	96	96	97	96	1
2																			2
3																			3
4	Motor Vehicles.....	2112	57	57	63	67	67	70	74	74	74	77	81	84	87	89	88	87	4
5	Aircraft.....	2113	56	56	62	66	66	69	73	73	73	75	80	83	86	88	86	86	5
6	Special Purpose Vehicles.....	2114	30	34	38	41	42	46	47	48	49	51	56	60	62	65	66	67	6
7	Gargare Work Equipment.....	2115	36	38	42	44	46	51	51	52	53	56	61	65	67	69	70	70	7
8	Other Work Equipment.....	2116	50	50	52	54	55	59	59	61	62	64	67	70	71	74	75	77	9
9																			10
10																			11
11	Buildings.....	2121	24	28	32	34	35	37	38	39	41	42	46	49	50	52	53	52	12
12	Furniture.....	2122	43	43	46	47	50	56	56	57	57	60	64	68	70	70	71	71	12
13	Office Equipment.....	2123	67	67	69	69	70	75	74	76	77	79	82	85	87	88	88	89	13
14	General Purpose Computer.....	2124	67	67	69	69	70	75	74	76	77	79	82	85	87	88	88	89	14
15																			15
16																			16
17	Analog Electronic Switching.....	2211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
18	Ditgital Electronic Switching.....	2212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
19																			19
20																			20
21	Electro Mechanical Switching....	2215	36	48	49	57	62	64	67	66	64	65	68	70	69	72	70	72	21
22																			22
23	Operator Systems.....	2220	37	50	51	59	64	67	69	68	66	67	70	72	71	73	71	74	23
24																			24
25																			25
26																			26
27	Radio System-Analog.....	22311	51	57	62	63	63	66	64	60	58	58	49	49	46	47	36	36	27
28	Radio System-Digital.....	22312	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
29	Circuit Equipment-Analog.....	22321	347	392	417	411	410	423	410	401	348	311	319	317	303	299	312	297	29
30	Circuit Equipment-Digital.....	22322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
31																			31
32	Public Telephone Term Eq.....	2351	148	151	145	145	148	154	143	144	146	158	159	164	164	164	165	165	32
33																			33
34																			34
35	Poles.....	2411	33	37	39	41	42	45	47	49	51	50	54	58	59	59	60	61	35
36	Aerial Cable-Metallic.....	24211	44	47	49	49	51	58	61	64	64	68	74	72	70	71	72	70	36
37	Aerial Cable-Fiber.....	24212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38	Underground Cable-Metallic.....	24221	48	52	54	53	55	64	67	71	69	75	82	78	75	76	78	75	38
39	Underground Cable-Fiber.....	24222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40	Buried Cable-Metallic.....	24231	50	54	56	55	57	66	70	74	72	78	85	81	77	78	80	76	40
41	Buried Cable-Fiber.....	24232	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
42	Submarine Cable-Metallic.....	24241	43	45	48	48	50	56	59	62	61	65	71	69	68	69	71	70	42
43	Submarine Cable-Fiber.....	24241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
44	Intra Building Cable-Metallic....	24261	43	47	49	48	50	58	61	64	63	68	74	71	69	70	72	70	44
45	Intra Building Cable-Fiber.....	24262	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
46	Aerial Wire.....	2431	33	36	38	38	40	45	47	50	50	55	58	57	57	59	61	62	46
47	Conduit Systems.....	2441	54	55	57	59	60	63	64	64	65	65	67	69	71	72	73	74	47
48																			48
49	Aerial Cable-FTTP (Distribution).	24213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	Underground Cable-FTTP (Dist.)	24223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	Submarine Cable-FTTP (Dist.)....	24243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	Intra Building Cable-FTTP (Dist.)	24263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53

SCHEDULE NO. T-1

Appendix A-5.1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	COST INDEX NUMBER																							LINE NO
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974 Jan. 1	1974 Jul. 1	1975 Jan. 1	1975 Jul. 1	1976 Jan. 1	1976 Jul. 1	1977 Jan. 1	1977 Jul. 1	1978 Jan. 1	1978 Jul. 1	1979 Jan. 1	1979 Jul. 1	
1	95	94	94	94	95	96	96	97	101	101	102	105	108	113	116	116	117	120	122	123	125	128	131	135	1
2																									2
3																									3
4	87	86	86	85	85	86	88	89	92	97	99	100	102	105	116	116	123	124	131	132	140	143	149	155	4
5	85	85	84	84	84	84	86	88	91	96	99	100	102	109	119	123	128	131	136	140	146	151	157	163	5
6	67	68	70	72	74	77	81	85	89	93	96	100	103	114	130	141	147	151	158	162	171	177	187	195	6
7	71	71	72	73	76	79	82	85	90	94	96	100	114	118	134	139	143	147	153	159	165	172	180	189	7
8	78	79	79	79	81	85	88	93	98	100	100	100	100	111	118	122	119	122	124	130	131	137	141	147	8
9																									9
10																									10
11	53	54	56	57	59	61	64	68	74	84	91	100	107	119	125	128	126	131	132	136	140	148	154	163	11
12	71	71	72	72	73	77	80	83	89	91	93	100	103	114	130	128	129	135	136	144	149	155	160	171	12
13	89	90	90	90	91	92	93	93	96	97	99	100	101	105	109	111	110	112	111	113	114	118	119	123	13
14	89	90	90	90	91	92	93	93	96	97	99	100	100	100	102	103	100	100	98	90	90	90	90	90	14
15																									15
16																									16
17	0	0	0	0	0	0	0	0	0	0	0	104	103	106	110	111	111	113	113	113	115	119	122	125	17
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105	105	100	95	95	95	96	96	18
19																									19
20																									20
21	71	76	78	75	72	71	75	81	84	88	98	104	106	110	115	120	124	127	132	136	140	145	151	156	21
22																									22
23	73	77	79	76	72	71	76	81	85	89	98	104	106	108	111	114	117	119	121	122	125	128	132	136	23
24																									24
25																									25
26																									26
27	46	49	52	60	58	63	62	66	78	97	102	104	102	102	102	102	97	98	103	104	106	106	103	103	27
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
29	273	234	228	214	224	210	173	159	163	128	108	104	105	108	111	112	111	111	115	118	118	119	120	122	29
30	0	0	0	0	0	0	0	0	0	0	0	104	104	104	105	105	110	116	121	126	126	127	123	120	30
31																									31
32	165	165	166	130	122	123	120	118	108	107	108	107	106	107	110	109	109	111	112	114	116	119	123	127	32
33																									33
34																									34
35	62	63	65	66	68	71	76	79	83	88	97	107	119	131	144	157	158	160	164	169	176	183	196	208	35
36	70	70	70	73	77	81	84	88	96	97	100	107	114	125	129	126	130	135	140	144	148	152	158	170	36
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38	74	73	72	75	80	84	87	91	100	99	100	107	114	127	130	125	129	134	138	143	145	149	155	168	38
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40	76	74	73	77	81	85	88	91	101	99	100	107	114	128	131	124	128	133	138	142	144	147	153	167	40
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
42	70	70	71	73	77	81	84	88	95	96	101	107	113	123	128	126	131	136	141	145	150	154	160	171	42
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
44	70	70	70	73	77	81	84	88	96	96	100	107	114	125	129	126	130	136	140	145	148	152	158	170	44
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
46	63	65	66	70	73	75	78	84	91	93	100	107	114	125	130	131	134	139	142	146	145	150	158	172	46
47	74	77	78	79	82	84	84	87	89	94	102	107	111	117	127	130	135	139	144	150	159	163	169	180	47
48																									48
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS																LINE NO
			1980		1981		1982		1983		1984		1985		1986		1987		
			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	Total Plant.....		140	146	146	149	150	152	156	159	156	154	156	158	156	154	154	155	1
2																			2
3																			3
4	Motor Vehicles.....	2112	162	167	178	186	195	195	201	199	203	204	206	210	215	215	227	220	4
5	Aircraft.....	2113	170	180	195	205	215	217	224	223	227	228	230	234	238	237	233	231	5
6	Special Purpose Vehicles.....	2114	206	220	231	245	254	263	266	270	271	274	274	277	278	281	283	287	6
7	Gargare Work Equipment.....	2115	200	213	223	234	241	248	250	251	253	257	260	263	264	267	268	270	7
8	Other Work Equipment.....	2116	153	165	170	181	183	189	189	189	189	190	192	197	199	202	204	205	8
9																			9
10																			10
11	Buildings.....	2121	176	183	188	193	192	198	200	206	210	218	223	224	228	234	234	239	11
12	Furniture.....	2122	174	182	187	199	210	213	215	222	224	229	232	238	242	245	248	252	12
13	Office Equipment.....	2123	125	130	132	136	137	140	140	143	142	142	140	142	143	143	143	146	13
14	General Purpose Computer.....	2124	90	90	90	90	87	83	76	69	59	48	48	48	48	47	47	47	14
15																			15
16																			16
17	Analog Electronic Switching.....	2211	130	140	149	163	168	175	183	188	193	199	202	204	205	208	210	210	17
18	Ditgital Electronic Switching.....	2212	96	96	97	97	94	90	84	77	67	57	57	57	57	56	56	56	18
19																			19
20																			20
21	Electro Mechanical Switching....	2215	167	188	199	213	219	226	232	248	268	277	282	281	283	286	287	287	21
22																			22
23	Operator Systems.....	2220	146	157	166	176	180	185	191	197	204	211	213	215	216	218	219	219	23
24																			24
25																			25
26																			26
27	Radio System-Analog.....	22311	100	100	101	102	90	91	94	94	79	80	80	81	77	78	82	82	27
28	Radio System-Digital.....	22312	0	0	0	0	0	0	115	115	115	117	119	121	122	124	126	124	28
29	Circuit Equipment-Analog.....	22321	125	130	129	128	130	132	121	154	153	152	153	152	147	144	145	146	29
30	Circuit Equipment-Digital.....	22322	114	107	100	93	93	94	95	96	89	82	80	78	68	59	49	39	30
31																			31
32	Public Telephone Term Eq.....	2351	132	141	145	150	158	167	190	196	201	206	210	212	213	217	219	218	32
33																			33
34																			34
35	Poles.....	2411	220	232	240	249	254	259	263	268	272	273	280	283	287	292	295	297	35
36	Aerial Cable-Metallic.....	24211	182	193	191	197	202	204	208	213	211	209	219	231	227	223	225	228	36
37	Aerial Cable-Fiber.....	24212	0	0	0	0	0	0	136	138	132	127	119	111	108	105	108	110	37
38	Underground Cable-Metallic.....	24221	181	192	187	191	195	196	199	203	197	193	204	217	212	205	206	209	38
39	Underground Cable-Fiber.....	24222	0	0	0	0	0	0	130	131	125	119	110	101	98	94	97	100	39
40	Buried Cable-Metallic.....	24231	180	192	186	189	192	193	195	199	192	187	198	212	205	198	198	201	40
41	Buried Cable-Fiber.....	24232	0	0	0	0	0	0	129	131	124	118	109	100	97	93	96	98	41
42	Submarine Cable-Metallic.....	24241	181	192	193	199	205	209	214	219	219	218	227	238	237	235	238	240	42
43	Submarine Cable-Fiber.....	24241	0	0	0	0	0	0	147	149	145	141	134	128	126	124	127	130	43
44	Intra Building Cable-Metallic....	24261	182	193	191	197	202	205	209	214	211	210	220	231	228	224	226	230	44
45	Intra Building Cable-Fiber.....	24262	0	0	0	0	0	0	136	138	132	127	119	111	108	105	108	111	45
46	Aerial Wire.....	2431	182	191	198	206	210	214	219	225	232	239	243	248	250	252	253	253	46
47	Conduit Systems.....	2441	188	196	203	211	219	220	228	240	246	253	257	262	267	271	276	278	47
48																			48
49	Aerial Cable-FTTP (Distribution).	24213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	Underground Cable-FTTP (Dist.)	24223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	Submarine Cable-FTTP (Dist.)....	24243	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	Intra Building Cable-FTTP (Dist.)	24263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53

SCHEDULE NO. T-1

Appendix A-5.1

AUS TELEPHONE PLANT INDEX

NORTH ATLANTIC REGION 1973-100

LINE NO	COST INDEX NUMBERS																						LINE NO
	1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		
	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	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	
1	150	153	158	165	164	165	167	165	165	165	167	168	169	170	174	178	182	182	184	185	186	184	184	181	1
2																									2
3																									3
4	221	222	231	229	236	232	244	241	254	251	258	261	267	271	275	270	279	276	277	271	270	263	273	266	4
5	234	234	234	240	246	254	261	271	274	284	285	291	297	300	304	312	318	322	326	328	327	328	329	330	5
6	289	293	298	309	312	319	325	328	333	337	343	348	348	351	353	360	362	368	370	374	377	382	383	388	6
7	273	279	286	294	298	305	309	316	318	322	324	328	332	336	338	345	349	354	356	359	361	364	366	368	7
8	206	210	215	218	221	228	230	234	235	240	240	243	244	250	250	254	254	258	258	260	260	262	263	265	8
9																									9
10																									10
11	242	254	257	268	268	272	272	274	270	279	283	290	295	306	310	310	311	312	323	329	331	338	341	343	11
12	255	263	269	274	278	284	287	290	291	294	296	299	302	309	309	315	320	322	326	328	330	330	330	333	12
13	147	149	151	153	154	154	152	153	153	156	154	155	155	155	154	156	155	156	155	157	156	157	156	157	13
14	45	43	37	31	30	29	26	24	23	21	21	21	21	21	21	20	17	15	14	14	14	14	13	13	14
15																									15
16																									16
17	204	207	210	212	214	211	212	214	213	213	213	216	215	216	213	212	211	204	204	200	196	194	193	192	17
18	52	50	45	40	39	38	36	33	32	31	31	31	32	32	32	31	28	27	26	26	26	26	25	25	18
19																									19
20																									20
21	278	284	289	291	291	292	296	302	303	304	309	317	316	324	329	327	334	333	336	339	331	336	338	342	21
22																									22
23	213	216	217	218	218	218	220	223	224	224	227	231	231	236	238	236	239	240	239	239	234	237	237	239	23
24																									24
25																									25
26																									26
27	80	80	81	81	81	82	81	82	84	85	86	87	87	87	89	89	91	91	91	93	94	95	95	96	27
28	117	117	117	118	118	118	116	116	117	118	119	120	119	120	120	121	121	122	123	125	125	123	123	124	28
29	140	141	142	144	145	144	145	146	147	147	147	149	150	150	152	149	149	146	146	145	143	143	142	143	29
30	36	35	35	35	35	34	34	34	37	38	39	39	39	39	37	37	37	38	35	36	36	36	36	35	30
31																									31
32	205	209	212	214	216	213	213	215	214	214	213	216	215	216	213	212	211	204	204	200	196	195	194	192	32
33																									33
34																									34
35	278	285	291	295	300	304	310	315	319	327	331	338	352	365	368	369	379	385	400	402	406	413	418	421	35
36	226	237	257	275	273	277	282	277	279	275	281	282	283	282	294	310	319	323	325	328	333	324	322	314	36
37	94	87	85	89	89	89	90	90	89	90	89	89	88	87	88	89	90	91	91	92	93	94	94	95	37
38	210	221	244	265	261	265	270	261	263	256	262	260	260	257	270	289	299	304	305	308	312	299	297	285	38
39	84	75	73	77	76	76	77	77	76	76	75	74	73	72	72	73	74	75	75	76	76	77	77	77	39
40	204	215	240	262	257	261	265	256	257	249	256	253	252	249	262	283	293	298	298	301	306	291	288	275	40
41	82	73	71	75	74	74	75	75	74	74	73	72	71	69	70	71	72	73	73	73	74	74	75	75	41
42	235	244	260	274	274	277	283	278	282	279	285	286	287	288	298	310	319	324	324	327	332	325	325	319	42
43	114	107	106	111	111	111	113	113	113	114	113	114	113	113	114	115	118	119	119	120	121	122	123	123	43
44	227	238	257	275	273	277	282	277	279	275	281	282	282	282	293	309	318	323	324	328	333	324	322	314	44
45	95	87	85	90	89	89	90	91	90	90	89	89	88	87	88	89	91	92	92	93	94	94	95	95	45
46	249	261	270	278	279	283	290	291	293	298	302	305	307	312	320	324	329	332	334	337	341	344	342	342	46
47	269	277	301	309	311	309	316	308	307	310	314	320	325	331	336	340	345	347	350	353	355	358	362	366	47
48																									48
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53

LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS																LINE NO
			2000		2001		2002		2003		2004		2005		2006		2007		
			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	Total Plant.....		182	185	188	190	191	193	194	197	201	206	210	213	227	244	244	249	1
2																			2
3																			3
4	Motor Vehicles.....	2112	275	269	276	266	270	263	264	257	268	266	272	261	262	258	264	257	4
5	Aircraft.....	2113	334	343	351	359	362	364	369	377	387	393	408	417	424	438	447	450	5
6	Special Purpose Vehicles.....	2114	388	392	392	392	392	398	400	404	404	413	428	445	449	462	465	472	6
7	Gargare Work Equipment.....	2115	369	372	373	377	376	376	377	378	379	387	393	403	408	416	422	430	7
8	Other Work Equipment.....	2116	266	267	268	273	271	272	271	273	273	275	276	278	278	275	278	279	8
9																			9
10																			10
11	Buildings.....	2121	353	359	364	374	377	384	385	385	407	412	425	431	441	443	457	472	11
12	Furniture.....	2122	335	337	338	341	341	341	344	346	346	350	360	368	372	376	380	386	12
13	Office Equipment.....	2123	156	157	157	158	159	158	158	157	159	160	158	162	161	161	160	161	13
14	General Purpose Computer.....	2124	12	11	9	9	7	7	6	4.8	3.4	3.4	3.3	3.3	3.0	2.8	2.6	2.7	14
15																			15
16																			16
17	Analog Electronic Switching.....	2211	193	193	193	190	189	190	189	190	189	190	190	189	187	193	196	186	17
18	Ditgital Electronic Switching.....	2212	25	24	22	23	23	23	21	22	22	22	22	22	22	22	23	23	18
19																			19
20																			20
21	Electro Mechanical Switching....	2215	344	348	350	358	366	376	379	386	391	395	403	405	414	421	430	432	21
22																			22
23	Operator Systems.....	2220	241	242	243	247	251	257	258	261	264	266	271	272	276	282	287	287	23
24																			24
25																			25
26																			26
27	Radio System-Analog.....	22311	96	96	96	95	95	95	95	95	95	96	95	95	94	97	98	94	27
28	Radio System-Digital.....	22312	125	125	126	127	128	127	125	125	125	126	127	127	128	129	130	130	28
29	Circuit Equipment-Analog.....	22321	143	144	144	142	143	143	143	144	143	145	145	145	144	148	150	144	29
30	Circuit Equipment-Digital.....	22322	36	36	36	37	37	38	38	39	38	38	39	39	39	40	40	41	30
31																			31
32	Public Telephone Term Eq.....	2351	193	193	193	191	190	190	190	191	190	191	190	189	187	193	195	186	32
33																			33
34																			34
35	Poles.....	2411	421	429	434	446	451	459	463	472	477	490	495	503	502	521	526	529	35
36	Aerial Cable-Metallic.....	24211	313	322	328	333	335	338	340	349	357	371	379	386	430	486	477	492	36
37	Aerial Cable-Fiber.....	24212	96	98	100	102	104	105	105	108	110	112	114	116	118	119	121	122	37
38	Underground Cable-Metallic.....	24221	281	289	295	299	298	299	299	307	314	326	334	340	394	461	448	466	38
39	Underground Cable-Fiber.....	24222	78	80	82	83	84	86	85	87	89	91	92	94	95	96	98	98	39
40	Buried Cable-Metallic.....	24231	271	278	284	287	285	289	286	293	300	312	320	326	383	456	441	460	40
41	Buried Cable-Fiber.....	24232	76	77	79	80	81	83	82	84	85	87	89	90	91	92	93	94	41
42	Submarine Cable-Metallic.....	24241	320	327	334	338	341	343	346	353	362	372	379	384	417	459	454	466	42
43	Submarine Cable-Fiber.....	24241	125	127	130	132	134	136	136	138	141	144	146	148	149	150	153	154	43
44	Intra Building Cable-Metallic....	24261	313	322	328	333	335	338	340	349	357	370	378	385	429	483	474	489	44
45	Intra Building Cable-Fiber.....	24262	97	99	101	103	104	106	106	108	110	113	115	117	118	120	121	122	45
46	Aerial Wire.....	2431	348	355	362	368	372	377	381	391	399	412	419	427	446	466	465	472	46
47	Conduit Systems.....	2441	375	380	391	395	403	412	418	422	432	442	453	458	474	478	495	493	47
48																			48
49	Aerial Cable-FTTP (Distribution).	24213	0	0	0	0	0	0	0	0	0	100	97	95	92	89	88	87	49
50	Underground Cable-FTTP (Dist.)	24223	0	0	0	0	0	0	0	0	0	100	99	98	98	97	96	96	50
51	Buried Cable-FTTP (Distribution)	24233	0	0	0	0	0	0	0	0	0	100	102	105	104	103	103	102	51
52	Submarine Cable-FTTP (Dist.)....	24243	0	0	0	0	0	0	0	0	0	100	99	98	98	97	96	96	52
53	Intra Building Cable-FTTP (Dist.)	24263	0	0	0	0	0	0	0	0	0	100	100	100	100	100	101	103	53

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LINE NO	COST INDEX NUMBERS																						LINE NO
	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		
	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	Jan. 1	Jul. 1	Jan. 1	Jul. 1	Jan. 1	Jul. 1	
1	251	256	245	248	258	260	279	282	282	282	285	283	284	285	289	287	283	282	288	290	298	304	1
2																							2
3																							3
4	263	257	272	273	274	269	272	273	280	279	286	282	291	287	291	295	299	298	305	301	307	304	4
5	461	471	495	480	485	490	497	502	514	520	523	528	532	537	541	543	543	547	548	553	557	562	5
6	476	485	499	504	503	503	507	518	529	541	548	555	557	564	566	570	572	576	577	581	583	578	6
7	435	445	457	457	456	458	462	474	479	485	489	494	497	503	505	509	510	513	514	519	522	533	7
8	281	286	290	286	286	288	288	290	291	294	295	296	304	307	309	315	318	322	322	324	327	330	8
9																							9
10																							10
11	492	497	506	494	506	507	521	518	530	532	542	539	550	552	585	580	586	589	604	608	633	647	11
12	389	402	417	415	418	420	415	429	433	437	433	437	439	450	449	454	454	455	457	461	464	482	12
13	162	171	184	171	169	169	170	171	173	173	164	165	166	166	171	172	172	172	173	171	171	169	13
14	2.7	2.6	2.6	2.1	2.01	1.98	1.97	1.49	0.82	0.66	0.67	0.50	0.57	0.60	0.55	0.63	0.64	0.65	0.73	0.71	0.67	0.64	14
15																							15
16																							16
17	180	179	178	178	177	177	174	175	174	174	174	175	176	176	176	176	177	177	177	179	177	179	17
18	24	24	25	25	25	25	25	25	26	26	26	27	27	27	27	28	28	28	28	29	29	29	18
19																							19
20																							20
21	439	445	456	458	460	469	474	481	486	478	484	491	497	495	499	499	496	497	502	502	509	506	21
22																							22
23	288	292	297	299	300	305	307	311	313	309	312	317	320	319	322	322	320	321	324	325	328	327	23
24																							24
25																							25
26																							26
27	91	90	90	90	89	89	88	89	88	88	88	88	89	89	89	89	89	89	89	90	90	90	27
28	131	132	134	134	135	137	138	138	137	138	138	138	138	138	139	140	140	140	140	141	141	142	28
29	140	139	139	139	138	138	137	138	137	137	137	138	139	139	140	140	141	141	141	142	142	143	29
30	41	41	41	41	40	40	40	41	41	42	42	42	43	43	44	44	44	45	45	45	46	46	30
31																							31
32	180	179	177	178	177	177	174	175	173	174	173	174	175	175	176	176	177	177	177	179	177	179	32
33																							33
34																							34
35	537	547	554	563	570	578	576	587	594	600	603	607	605	616	620	621	629	633	634	652	643	652	35
36	494	507	461	473	506	509	573	582	577	576	582	572	573	573	578	570	555	551	566	568	590	604	36
37	123	124	126	127	128	130	131	133	135	136	137	138	140	142	143	144	146	148	149	151	153	155	37
38	465	481	421	435	475	476	555	562	554	552	556	544	542	540	544	533	513	506	523	524	548	563	38
39	100	100	102	103	103	105	106	108	109	110	111	112	113	114	116	116	118	119	120	122	123	125	39
40	459	475	410	425	467	467	553	560	550	547	552	538	536	533	537	524	501	493	511	511	537	552	40
41	95	96	97	98	99	100	101	103	104	105	106	107	108	109	111	111	113	114	115	116	118	120	41
42	468	479	447	458	484	486	535	541	539	540	545	539	541	542	547	544	534	532	546	548	566	578	42
43	155	157	159	161	163	164	166	168	170	172	173	174	177	179	181	183	185	187	189	191	194	196	43
44	491	504	459	471	504	507	570	578	573	573	578	569	569	570	575	567	553	549	564	566	588	602	44
45	124	125	127	128	129	131	132	134	135	137	138	139	141	142	144	145	147	148	150	152	154	156	45
46	475	488	469	478	496	501	519	528	525	527	531	530	533	538	543	543	540	541	551	556	569	580	46
47	502	507	525	530	516	521	526	532	545	550	549	552	559	565	571	577	581	586	591	596	611	618	47
48																							48
49	82	77	75	73	65	58	55	53	52	50	50	50	50	50	50	49	50	49	49	50	49	50	49
50	94	92	89	87	83	80	75	70	66	62	58	54	54	54	53	53	54	54	54	55	54.3	55.3	50
51	92	82	78	74	71	68	66	63	61	59	57	54	54	55	54	54	54	53	53	54	52.7	53.7	51
52	94	92	89	87	83	80	75	70	66	62	58	54	54	54	53	53	54	54	54	55	54.3	55.3	52
53	104	105	90	75	68	61	54	47	43	39	39	39	39	39	38	38	39	44	44	44	43.7	44.7	53

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LINE NO	PLANT IN SERVICE DESCRIPTION	FCC Acct	COST INDEX NUMBERS														LINE NO
			2019		2020		2021		2022		2023		2024		2025		
			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	Total Plant.....		304	305	308	308	320	343	361	373	386	386	383	397			1
2																	2
3																	3
4	Motor Vehicles.....	2112	309	305	308	304	310	314	318	326	332	332	334	334			4
5	Aircraft.....	2113	567	574	575	581	583	586	592	613	622	640	654	665			5
6	Special Purpose Vehicles.....	2114	602	612	616	623	623	650	685	721	746	779	801	810			6
7	Gargare Work Equipment.....	2115	541	550	550	555	558	578	609	657	676	701	709	727			7
8	Other Work Equipment.....	2116	333	335	336	340	343	356	378	400	417	447	459	459			8
9																	9
10																	10
11	Buildings.....	2121	647	643	664	662	692	735	850	848	934	968	859	859			11
12	Furniture.....	2122	491	497	503	509	513	556	577	629	654	657	661	675			12
13	Office Equipment.....	2123	170	172	171	170	169	171	173	175	175	179	181	184			13
14	General Purpose Computer.....	2124	0.60	0.60	0.51	0.51	0.34	0.34	0.28	0.28	0.28	0.28	0.11	0.11			14
15																	15
16																	16
17	Analog Electronic Switching.....	2211	179	179	181	180	180	182	185	189	193	193	196	197			17
18	Ditgital Electronic Switching.....	2212	29	29	30	30	30	30	31	31	32	32	33	33			18
19																	19
20																	20
21	Electro Mechanical Switching....	2215	513	517	518	527	529	534	538	550	573	582	591	598			21
22																	22
23	Operator Systems.....	2220	331	334	335	340	341	344	347	354	368	373	378	383			23
24																	24
25																	25
26																	26
27	Radio System-Analog.....	22311	90	90	91	91	91	92	93	96	98	98	99	100			27
28	Radio System-Digital.....	22312	143	144	146	147	147	148	150	152	155	156	159	161			28
29	Circuit Equipment-Analog.....	22321	143	144	145	145	145	146	149	153	156	156	159	159			29
30	Circuit Equipment-Digital.....	22322	47	47	48	48	49	49	50	51	53	53	55	55			30
31																	31
32	Public Telephone Term Eq.....	2351	179	179	181	181	181	182	185	190	192	193	196	197			32
33																	33
34																	34
35	Poles.....	2411	660	671	699	709	695	703	721	765	786	803	823	826			35
36	Aerial Cable-Metallic.....	24211	601	603	605	603	637	700	730	759	771	756	767	813			36
37	Aerial Cable-Fiber.....	24212	157	158	160	162	164	165	168	172	175	178	182	184			37
38	Underground Cable-Metallic.....	24221	558	557	558	553	593	671	704	735	745	724	731	787			38
39	Underground Cable-Fiber.....	24222	126	127	129	130	132	133	135	138	141	144	146	148			39
40	Buried Cable-Metallic.....	24231	545	544	544	538	581	664	699	733	742	718	725	784			40
41	Buried Cable-Fiber.....	24232	121	122	123	125	126	127	129	132	135	137	140	141			41
42	Submarine Cable-Metallic.....	24241	578	580	583	583	610	659	682	705	715	707	716	754			42
43	Submarine Cable-Fiber.....	24241	198	200	203	205	207	209	212	217	221	224	228	231			43
44	Intra Building Cable-Metallic....	24261	599	601	603	601	635	697	726	754	765	752	762	808			44
45	Intra Building Cable-Fiber.....	24262	158	159	161	163	165	166	169	173	176	179	183	185			45
46	Aerial Wire.....	2431	582	587	591	595	613	644	662	681	693	692	706	730			46
47	Conduit Systems.....	2441	626	631	642	648	663	669	690	702	755	764	771	779			47
48																	48
49	Aerial Cable-FTTP (Distribution).	24213	50.5	50.0	50.0	50.0	49.0	50.0	52.0	53.5	55.0	56.0	58.5	59.5			49
50	Underground Cable-FTTP (Dist.)	24223	55.8	55.1	55.1	55.1	54.1	55.1	57.1	59.1	61.1	62.4	65.2	66.4			50
51	Buried Cable-FTTP (Distribution)	24233	54.2	53.7	53.7	53.7	53.0	54.0	56.0	57.7	60.0	61.0	63.5	64.5			51
52	Submarine Cable-FTTP (Dist.)....	24243	55.8	55.1	55.1	55.1	54.1	55.1	57.1	59.1	61.1	62.4	65.2	66.4			52
53	Intra Building Cable-FTTP (Dist.)	24263	45.2	44.7	44.7	44.7	44.0	44.7	46.2	47.7	50.0	51.0	53.5	54.5			53

Source	Table	Period or Month	Actual or Estimate	Year	USBLS Consumers Price Index Ref:CUUR000SA0,CUUS0000SA0 Line 1	USBLS Producer Price Index Communications Equipment Ref: pcu3342 Line 2	USBLS Technical Labor Ref: ecu11122I & CIU20154 Line 3	USBLS PPI Motors & Generators Ref: PCU335312335312 Line 4	USBLS PPI Alarm Systems Ref: PCU334290334290 Line 5	Constant cost Line 6
USBLS	USBLS	Average	Actual	1912	10	7	6	9.7	8.7	100
USBLS	USBLS	Average	Actual	1913	10	7	6	9.7	8.7	100
USBLS	USBLS	Average	Actual	1914	10	7	6	9.7	8.7	100
USBLS	USBLS	Average	Actual	1915	10	8	6	9.7	8.7	100
USBLS	USBLS	Average	Actual	1916	11	10	7	10.7	9.6	100
USBLS	USBLS	Average	Actual	1917	13	11	8	12.7	11.4	100
USBLS	USBLS	Average	Actual	1918	15	12	9	14.6	13.1	100
USBLS	USBLS	Average	Actual	1919	17	14	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1920	20	13	12	19.4	17.4	100
USBLS	USBLS	Average	Actual	1921	18	12	11	17.5	15.7	100
USBLS	USBLS	Average	Actual	1922	17	12	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1923	17	12	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1924	17	13	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1925	18	13	11	17.5	15.7	100
USBLS	USBLS	Average	Actual	1926	18	12	11	17.5	15.7	100
USBLS	USBLS	Average	Actual	1927	17	12	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1928	17	12	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1929	17	12	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1930	17	11	10	16.5	14.8	100
USBLS	USBLS	Average	Actual	1931	15	10	9	14.6	13.1	100
USBLS	USBLS	Average	Actual	1932	14	9	8	13.6	12.2	100
USBLS	USBLS	Average	Actual	1933	13	9	7	12.6	11.3	100
USBLS	USBLS	Average	Actual	1934	13	10	7	12.6	11.3	100
USBLS	USBLS	Average	Actual	1935	14	10	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1936	14	10	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1937	14	10	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1938	14	10	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1939	14	10	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1940	14	11	7	13.6	12.2	100
USBLS	USBLS	Average	Actual	1941	15	12	8	14.6	13.1	100
USBLS	USBLS	Average	Actual	1942	16	13	9	15.6	14	100
USBLS	USBLS	Average	Actual	1943	17	14	10	16.6	14.9	100
USBLS	USBLS	Average	Actual	1944	18	14	11	17.6	15.8	100
USBLS	USBLS	Average	Actual	1945	18	16	11	17.6	15.8	100
USBLS	USBLS	Average	Actual	1946	20	18	12	19.5	17.5	100
USBLS	USBLS	Average	Actual	1947	22	20	13	21.4	19.2	100
USBLS	USBLS	Average	Actual	1948	24	20	14	23.3	20.9	100
USBLS	USBLS	Average	Actual	1949	24	20	14	23.3	20.9	100
USBLS	USBLS	Average	Actual	1950	24	22	14	23.3	20.9	100
USBLS	USBLS	Average	Actual	1951	26	23	15	25.2	22.6	100
USBLS	USBLS	Average	Actual	1952	27	23	16	26.2	23.5	100
USBLS	USBLS	Average	Actual	1953	27	23	16	26.2	23.5	100
USBLS	USBLS	Average	Actual	1954	27	23	16	26.2	23.5	100
USBLS	USBLS	Average	Actual	1955	27	23	16	26.2	23.5	100
USBLS	USBLS	Average	Actual	1956	27	24	16	26.2	23.5	100
USBLS	USBLS	Average	Actual	1957	28	25	17	27.2	24.4	100
USBLS	USBLS	Average	Actual	1958	29	25	18	28.2	25.3	100
USBLS	USBLS	Average	Actual	1959	29	26	18	28.2	25.3	100
USBLS	USBLS	Average	Actual	1960	30	26	19	29.2	26.2	100
USBLS	USBLS	Average	Actual	1961	30	26	19	29.2	26.2	100
USBLS	USBLS	Average	Actual	1962	30	27	19	29.2	26.2	100
USBLS	USBLS	Average	Actual	1963	31	27	20	30.2	27.1	100
USBLS	USBLS	Average	Actual	1964	31	28	20	30.2	27.1	100
USBLS	USBLS	Average	Actual	1965	32	28	21	31.2	28	100
USBLS	USBLS	Average	Actual	1966	32	29	21	31.2	28	100
USBLS	USBLS	Average	Actual	1967	33	31	22	32.2	28.9	100
USBLS	USBLS	Average	Actual	1968	35	33	23	34.1	30.6	100
USBLS	USBLS	Average	Actual	1969	37	35	24	36	32.4	100
USBLS	USBLS	Average	Actual	1970	39	37	25	37.9	34.2	100
USBLS	USBLS	Average	Actual	1971	41	38	26	39.8	36	100
USBLS	USBLS	Average	Actual	1972	42	40	27	40.8	36.9	100
USBLS	USBLS	Average	Actual	1973	44	44	28	42.7	38.7	100
USBLS	USBLS	Average	Actual	1974	49	49	31	47.6	43.1	100
USBLS	USBLS	Average	Actual	1975	54	52	34	52.5	47.5	100
USBLS	USBLS	Average	Actual	1976	57	56	36	55.4	50.1	100
USBLS	USBLS	Average	Actual	1977	61	60	38	59.3	53.6	100
USBLS	USBLS	Average	Actual	1978	65	67	40	63.2	57.1	100
USBLS	USBLS	Average	Actual	1979	73	75	45	71	64.1	100
USBLS	USBLS	Average	Actual	1980	82	83	50	79.7	72	100
USBLS	USBLS	Average	Actual	1981	91	89	55	88.5	79.9	100
USBLS	USBLS	Average	Actual	1982	97	92	59	94.3	85.2	100
USBLS	USBLS	Average	Actual	1983	100	96	61	97.2	87.8	100
USBLS	USBLS	Average	Actual	1984	104	100	63	101.1	91.3	100
USBLS	USBLS	Average	Actual	1985	108	102	65	105	94.8	100

Appendix A-5.1

Source	Table	Period or Month	Actual or Estimate	Year	USBLS Consumers Price Index Ref:CUUR000SA0,CUUS0000SA0 Line 1	USBLS Producer Price Index Communications Equipment Ref: pcu3342 Line 2	USBLS Technical Labor Ref: ecu11122I & CIU20154 Line 3	USBLS PPI Motors & Generators Ref: PCU335312 335312 Line 4	USBLS PPI Alarm Systems Ref: PCU33429 03342901 Line 5	Constant cost Line 6
USBLS	USBLS	Average	Actual	1986	110	104	66	106.9	96.6	100
USBLS	USBLS	Average	Actual	1987	114	104	69	110.8	100.1	100
USBLS	USBLS	Average	Actual	1988	118	106	72	116.4	101.6	100
USBLS	USBLS	Average	Actual	1989	124	108	76	123.3	104.3	100
USBLS	USBLS	Average	Actual	1990	131	109	80	127.5	103.4	100
USBLS	USBLS	Average	Actual	1991	136	110	84	129.7	101.9	100
USBLS	USBLS	Average	Actual	1992	140	112	88	131.5	102.2	100
USBLS	USBLS	Average	Actual	1993	145	113	92	133.5	103.2	100
USBLS	USBLS	Average	Actual	1994	148	114	95	134.2	104.2	100
USBLS	USBLS	Average	Actual	1995	152	115	97	137.5	106.5	100
USBLS	USBLS	Average	Actual	1996	157	116	100	139.1	108.3	100
USBLS	USBLS	Average	Actual	1997	161	115	102	138.6	109.4	100
USBLS	USBLS	Average	Actual	1998	163	113	106	139.8	111.3	100
USBLS	USBLS	Average	Actual	1999	167	110	109	139.9	109.4	100
USBLS	USBLS	Average	Actual	2000	172	109	114	140.4	108.4	100
USBLS	USBLS	Average	Actual	2001	177	105	119	141.6	109	100
USBLS	USBLS	Average	Actual	2002	180	102	123	142	110.4	100
USBLS	USBLS	Average	Actual	2003	184	98	127	142.4	110.8	100
USBLS	USBLS	Average	Actual	2004	189	97	132	145.8	109.8	100
USBLS	USBLS	Average	Actual	2005	195	97	135	154.4	110.6	100
USBLS	USBLS	Average	Actual	2006	202	96	139	161.8	113.1	100
USBLS	USBLS	Average	Actual	2007	207	97	146	169.6	113.8	100
USBLS	USBLS	Average	Actual	2008	215	97	152	177.7	116	100
USBLS	USBLS	Average	Actual	2009	215	97	155	181.8	116.8	100
USBLS	USBLS	Average	Actual	2010	218	96	157	185.4	117.8	100
USBLS	USBLS	Average	Actual	2011	225	96	161	196.5	118.4	100
USBLS	USBLS	Average	Actual	2012	230	95	164	201.2	119.9	100
USBLS	USBLS	Average	Actual	2013	233	96	162	203.2	121.5	100
USBLS	USBLS	Average	Actual	2014	237	96	165	206.1	122.2	100
USBLS	USBLS	Average	Actual	2015	237	95.1	168	206.4	400.5	100
USBLS	USBLS	Average	Actual	2016	240.2	93.8	171.8	204.8	401.2	100
USBLS	USBLS	Average	Actual	2017	245.1	93.2	175.1	207.3	123.4	100
USBLS	USBLS	Average	Actual	2018	250.9	93.3	178.8	211.8	121	100
USBLS	USBLS	Average	Actual	2019	255.7	93.7	182.7	215.9	121.4	100
USBLS	USBLS	Average	Actual	2020	259.5	94.5	186.5	216.4	122	100
USBLS	USBLS	1	Actual	2021	261.582	93.5	188.8	216.3	122.9	100
USBLS	USBLS	7	Actual	2021	273.003	94.108	192.2	224.778	129.111	100
USBLS	USBLS	1	Actual	2022	281.148	96.311	196.8	248.522	131.646	100
USBLS	USBLS	7	Actual	2022	296.28	98.99	201.00	264.57	137.87	100.00
USBLS	USBLS	1	Actual	2023	299.17	101.38	206.00	274.11	150.48	100.00
USBLS	USBLS	7	Actual	2023	305.69	102.29	210.20	282.46	153.04	100.00
USBLS	USBLS	1	Actual	2024	308.42	103.36	214.40	286.07	155.60	100.00
USBLS	USBLS	7	Actual	2024	314.54	104.82	219.00	289.97	160.59	100.00
USBLS	USBLS	1	Estimate	2025	321.05	106.08	223.02	298.85	165.20	100.00
USBLS	USBLS	7	Estimate	2025	328.19	107.41	227.24	308.62	170.39	100.00

	1				2	3	2015.00	2015.50	2016.00	2016.50	2017.00	2017.50	2018.00	2018.50	2019.00	2019.50	2020.00	2020.50
							4	5	6	7	8	9	10	11	12	13	14	15
Lookup	Source	Table	Line				Actual 1/1/2015	Actual 7/1/2015	Actual 1/1/2016	Actual 7/1/2016	Actual 1/1/2017	Actual 7/1/2017	Actual 1/1/2018	Actual 7/1/2018	Actual 1/1/2019	Actual 7/1/2019	Actual 1/1/2020	Actual 7/1/2020
USBLS1	USBLS	USBLS	1	USBLS Consumers Price Index Ref:CUUR000SA0,CUUS0000SA0			233.707	238.65	236.92	240.63	242.84	244.79	247.87	**252.01**	251.71	256.57	257.97	259.1
USBLS2	USBLS	USBLS	2	USBLS Producer Price Index Communications Equipment Ref: pcu3342			95.8	238.65	95.5	95.3	94.1	93.9	93.3	**93**	93.3	93.1	93.7	93.8
USBLS3	USBLS	USBLS	3	USBLS Technical Labor Ref: ecu11122I & CIU20154			167.2	168.3	169.9	171.2	172.7	174.5	176.8	178.8	180.7	182.6	184.9	186.2
USBLS4	USBLS	USBLS	4	USBLS PPI Motors & Generators Ref: PCU335312335312			206.9	206.3	204.1	204.7	205.7	206.7	210	**211**	215.1	215.5	217.6	215.8
USBLS5	USBLS	USBLS	5	USBLS PPI Alarm Systems Ref: PCU3342903342901			122.4	122.4	122.4	122.4	122.4	122.6	120.7	**121**	121.2	121.4	121.6	121.8
USBLS6	USBLS	USBLS	6	Constant cost			100	100	100	100	100	100	100	100	100	100	100	100

Estimates or Preliminaries

US BLS

	1				2	3	2021.00 16	2021.50 17	2022.00 18	2022.50 19	2023.00 20	2023.50 21	2024.00 22	2024.50 23	2025.00 24	2025.50 25	2026.00 26	24
Lookup	Source	Table	Line				Actual 1/1/2021	Actual 7/1/2021	Actual 1/1/2022	Actual 7/1/2022	Actual 1/1/2023	Actual 7/1/2023	Actual 1/1/2024	Actual 7/1/2024	Estimate 1/1/2025	Estimate 7/1/2025	Estimated 1/1/2026	LINE
USBLS1	USBLS	USBLS	1	USBLS Consumers Price Index Ref:CUUR000SA0,CUUS00005A0			261.58	273	281.15	296.28	299.17	305.69	308.42	314.54	**321.05**	**328.19**	**336.07**	1
USBLS2	USBLS	USBLS	2	USBLS Producer Price Index Communications Equipment Ref: pcu3342			93.5	94.108	96.311	98.99	101.38	102.29	103.36	104.82	**106.08**	**107.41**	**108.88**	2
USBLS3	USBLS	USBLS	3	USBLS Technical Labor Ref: ecu11122I & CIU20154			188.8	192.2	196.8	201	206	210.2	214.4	219	**223.02**	**227.24**	**231.81**	3
USBLS4	USBLS	USBLS	4	USBLS PPI Motors & Generators Ref: PCU335312335312			216.3	224.78	248.52	264.57	274.11	282.46	286.07	289.97	**298.85**	**308.62**	**319.98**	4
USBLS5	USBLS	USBLS	5	USBLS PPI Alarm Systems Ref: PCU3342903342901			122.9	129.11	131.65	137.87	150.48	153.04	155.60	160.59	**165.20**	**170.39**	**176.25**	5
USBLS6	USBLS	USBLS	6	Constant cost			100	100	100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	6

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 it normal service life using the following formula:

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

or

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

Where: Remaining Life = f(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 base on the difference between the property's normal service life and its functional service life. The following formula was used to calculate the obsolescence:

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

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

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, WADS 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. WADS Consultants has reviewed the studies which are summarized in the following table:

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	SO	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	52.5	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 deprecation of the property:

Pennsylvania American Water Company
East Coventry Township
Sanitary Sewer System
Investor-Owned Utility
February 24, 2024

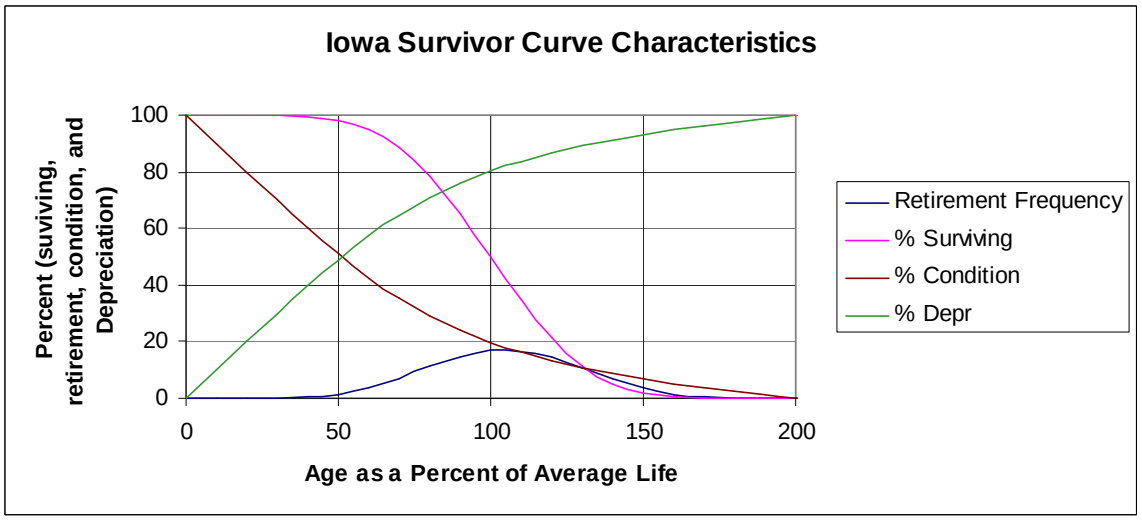
Summary of Account Costing and Depreciation Parameters Used in the Depreciation Original Cost and the Depreciated Replacement Cost New Studies

(1)	(2)	(4)		(5)	(6)	
		(4a)	(4b)		(6a)	(6b)
Account Number	Description	Iowa Survivor / Retirement Curve	Normal Service Life	Economic Obsolescence	Tax Depreciation	
			years	% of CORLD	Table	Life
353.00	Land & Land Rights	ZNonDep	0.00	0.00%	Non-Depr	0.00
353.10	Treatment Contract	R2.0	45.00	0.00%	MACRS	25.00
354.30	Stuctures & Improvements - Pumping	R4.0	45.00	0.00%	MACRS	25.00
355.30	Generating Equipment - Pumping	R3.0	35.00	0.00%	MACRS	25.00
360.10	Collection Sewers - Force - Mains	R3.0	75.00	0.00%	MACRS	25.00
361.10	Collection Sewers - Gravity - Mains	R2.5	80.00	0.00%	MACRS	25.00
361.20	Collection Sewers - Gravity - Manholes	S2.0	75.00	0.00%	MACRS	25.00
363.00	Service Laterals	R3.0	50.00	0.00%	MACRS	25.00
364.30	Flow Measuring Devices - Pumping	S2.0	30.00	0.00%	MACRS	25.00
371.40	Pumping Equipment - Treatment	R3.0	35.00	0.00%	MACRS	25.00
380.40	Treatment and Disposal Equipment Chemical Feed Systems	R2.0	45.00	0.00%	MACRS	25.00
389.30	Other Plant & Misc Equip	R3.0	45.00	0.00%	MACRS	25.00

As the above table demonstrates the depreciation lives selected for the WADS 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, say1985) 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.

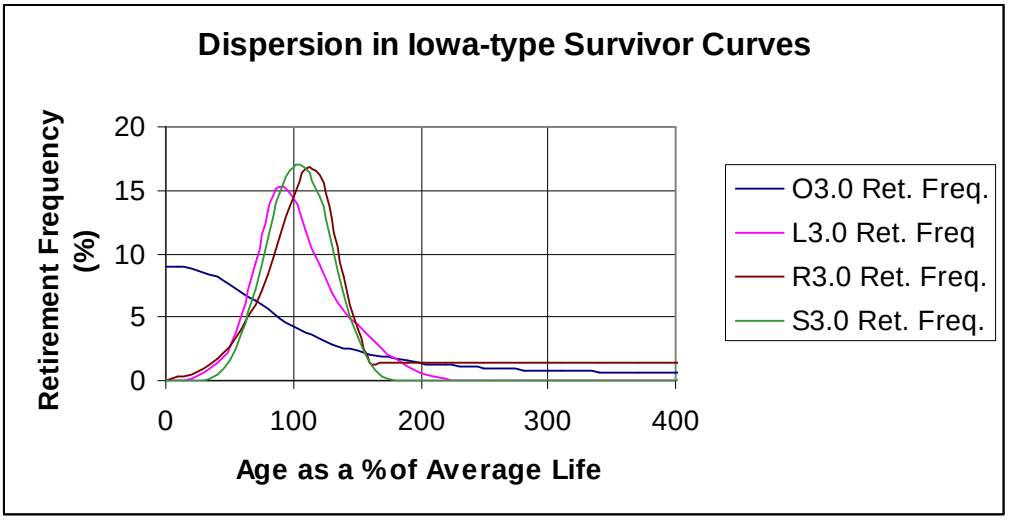


The above figure depicts a typical Iowa-type survivor curve, an S3.0 Iowa-type survivor curve. In this case the survivor curve has been generalized to a service life of 100% of the property's average life, in this generalized form the survivor curve statistics can be utilized with any individual service 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 distributes 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 depict

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:



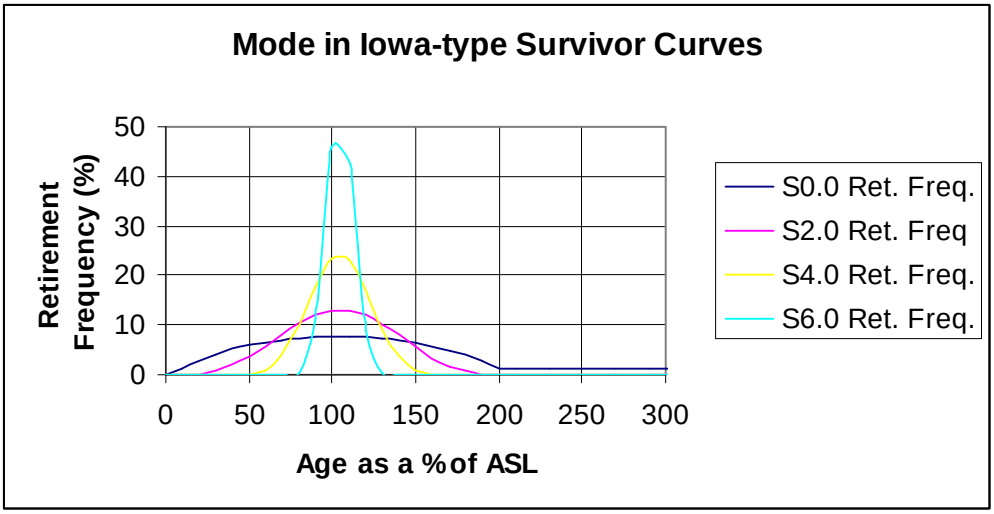
Symmetrically moded (S-type Iowa Survivor Curves) (green) – The S-type Iowa Survivor Curve is one wherein the property's retirements are symmetrically distributed about the mode. Mode in statistics is defined as the highest frequency, in this case retirement frequency. Thus an S-type Iowa curve is like 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.

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 it 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 determine 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 entire life, while high peakedness numbers, 5 and 6 represent retirement patterns where the majority or all the retirement 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 Iowa curves was over looked 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.

Iowa-type survivor curves are parametric, as opposed to formalistic, in that they were derived from empirical survival/retirement data which Winfrey collected. There are Iowa curve equations are presented in Bulletin 125; however in most cases users reference standardized Iowa Survivor Curve tables. The Iowa-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.

It should be apparent that Iowa-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 Iowa-type Survivor Curves

As was discussed earlier, most users of the Iowa-type survivor curves use standardized tables of Iowa 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 Iowa-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	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	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 Iowa Survivor curves contained and represent a R3.0 25 year Iowa curve and life table. The standardized Iowa Curves are located in tab database. In order to reference the proper line of the Iowa 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 Iowa Survivor curve (Iowa Curve column), combining these two criteria the Iowa Lookup column will get the user to the proper Iowa Curve data.

In the above calculation the Iowa-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

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 Winfrey

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

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Iowa State University, Ames, Iowa

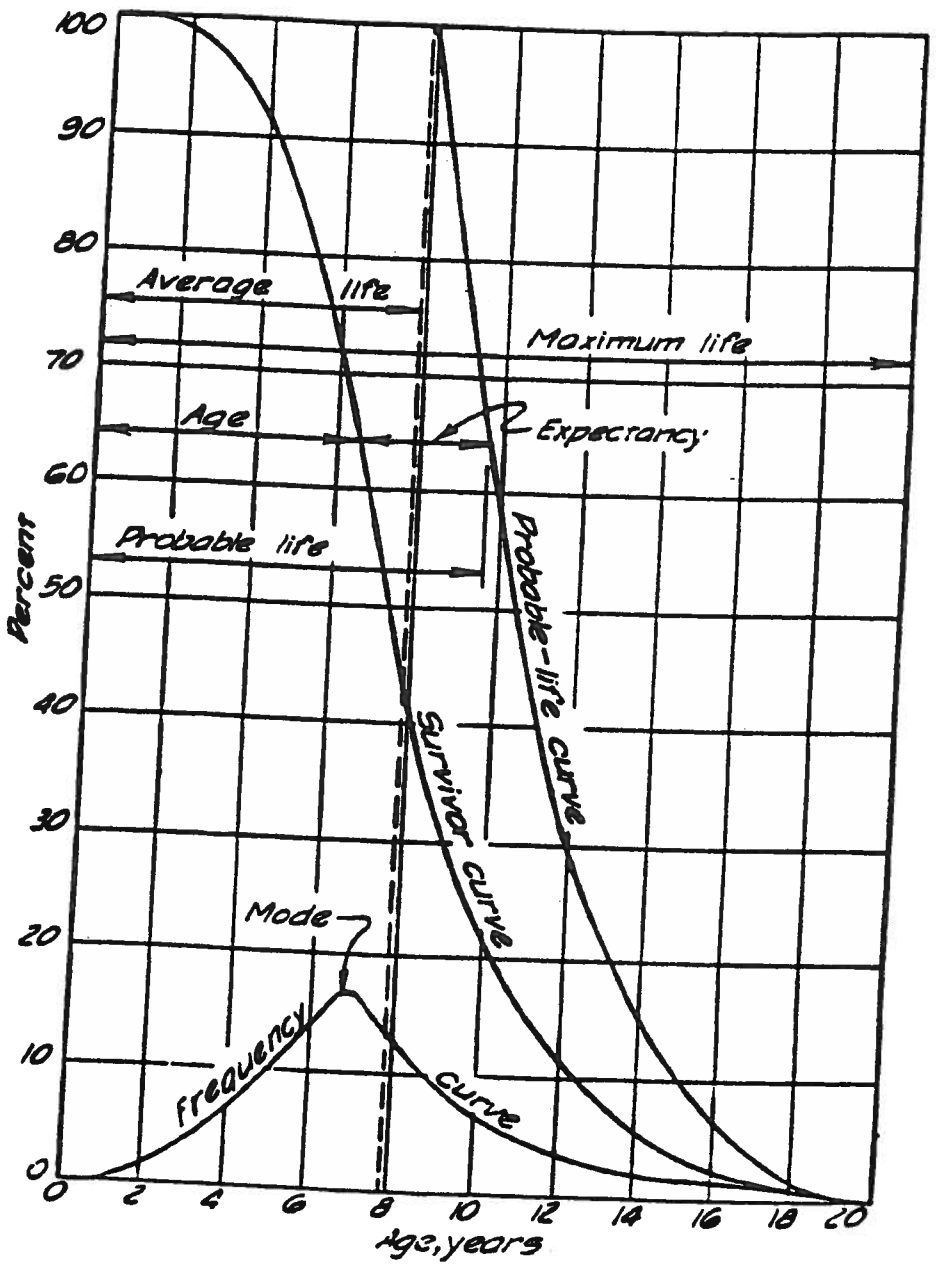


FIG. 1.—A typical survivor curve and its derived curves.

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, ton-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

CHART NO. 9

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

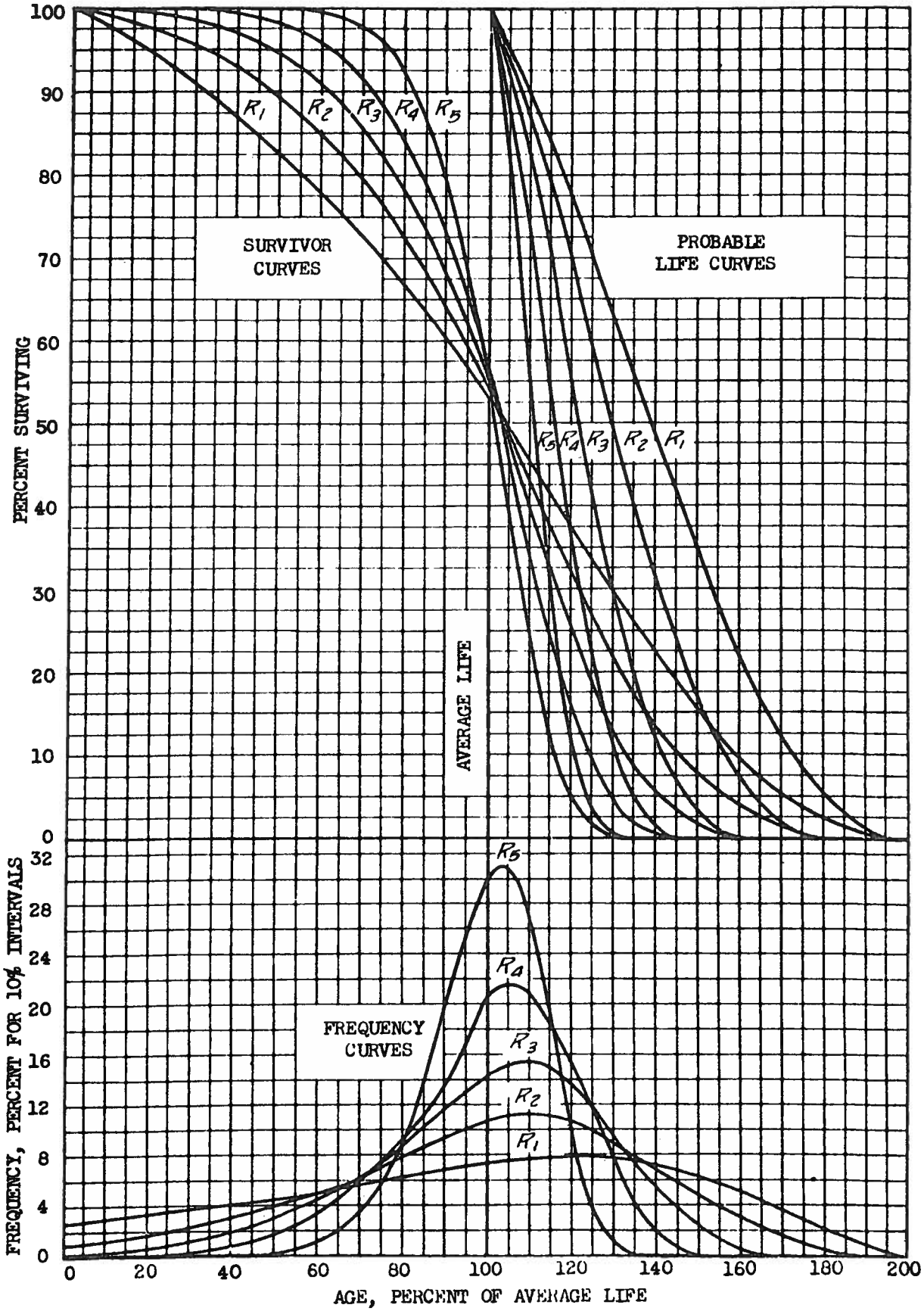


CHART NO. 8

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

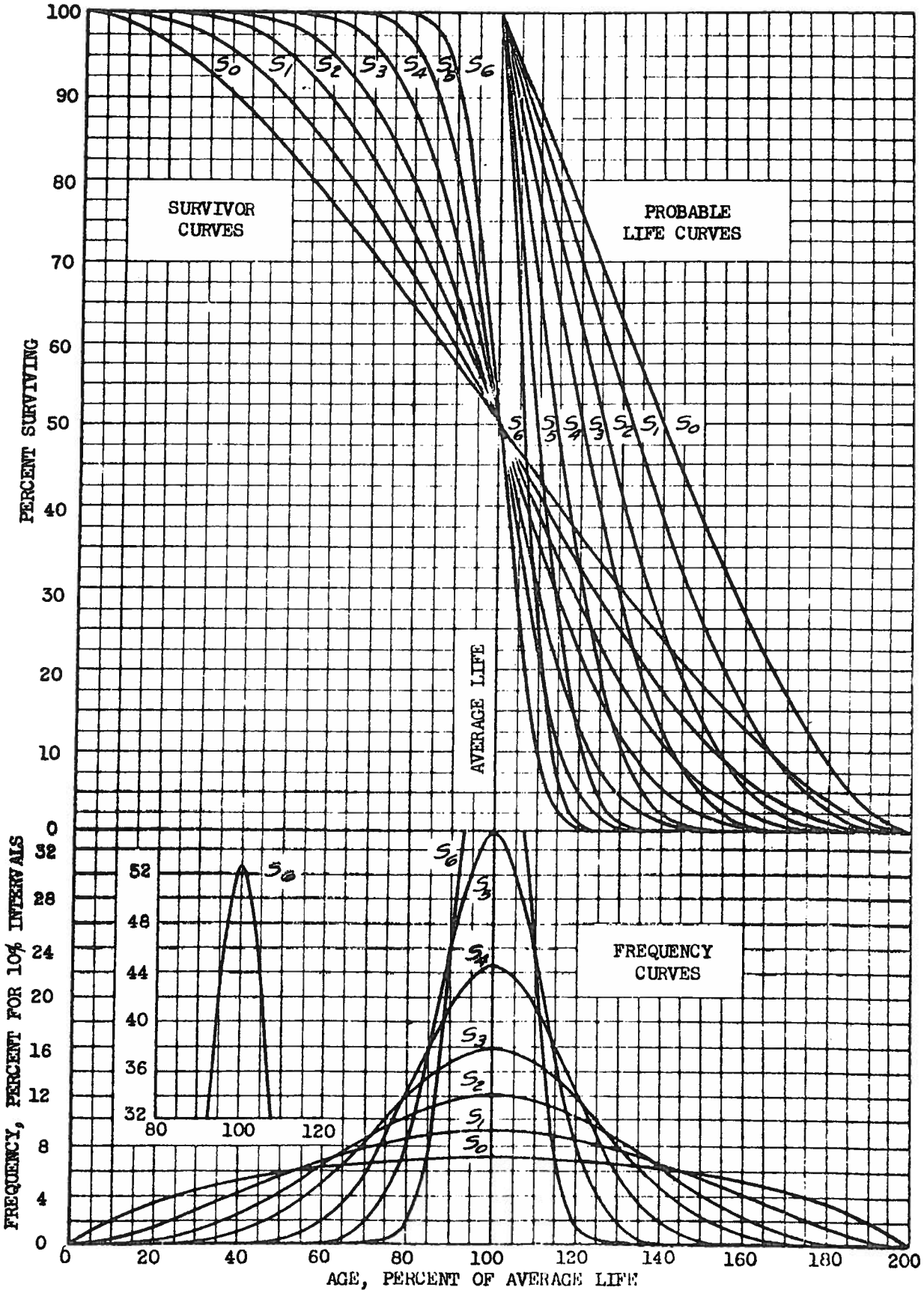


CHART NO. 7

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

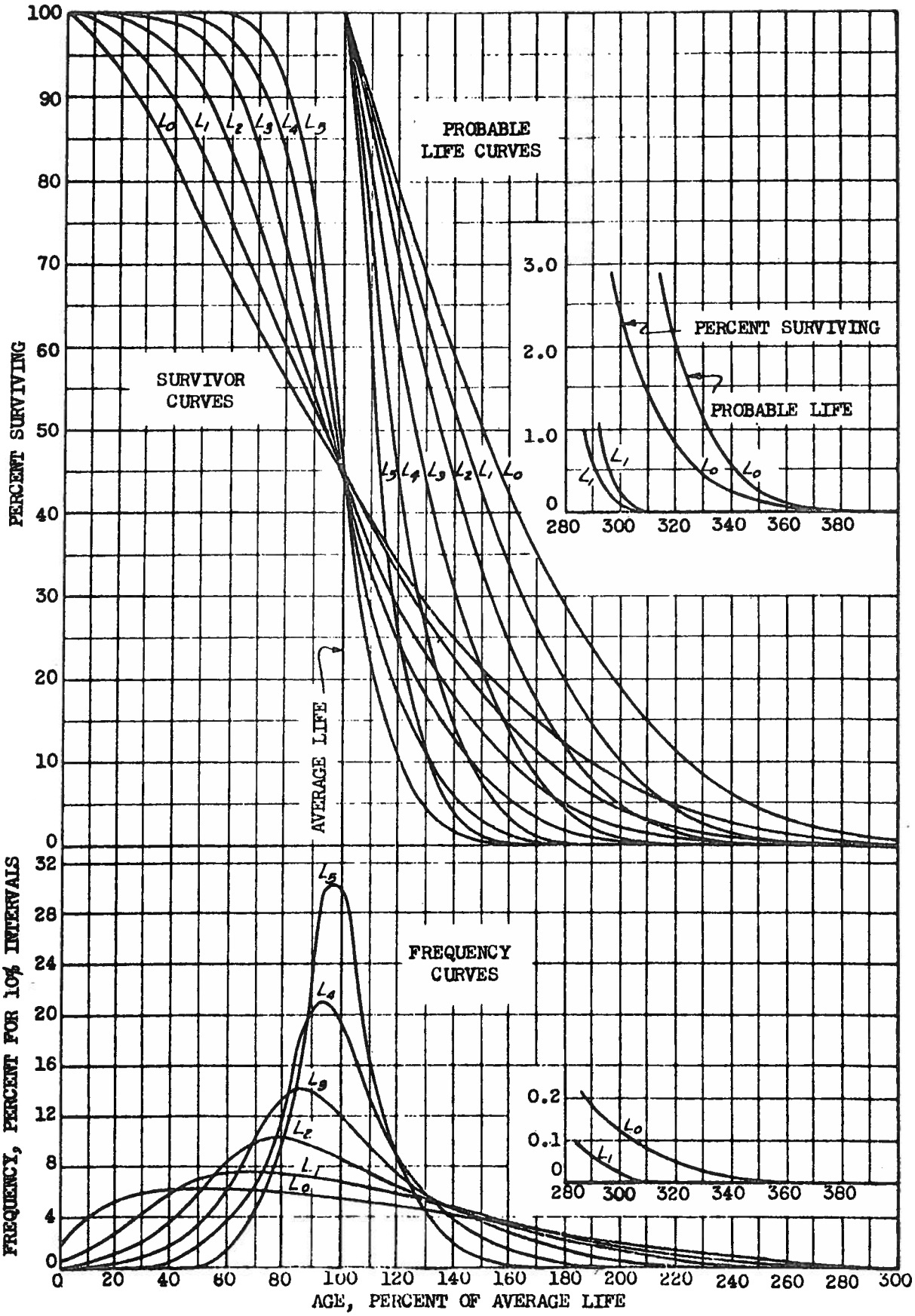
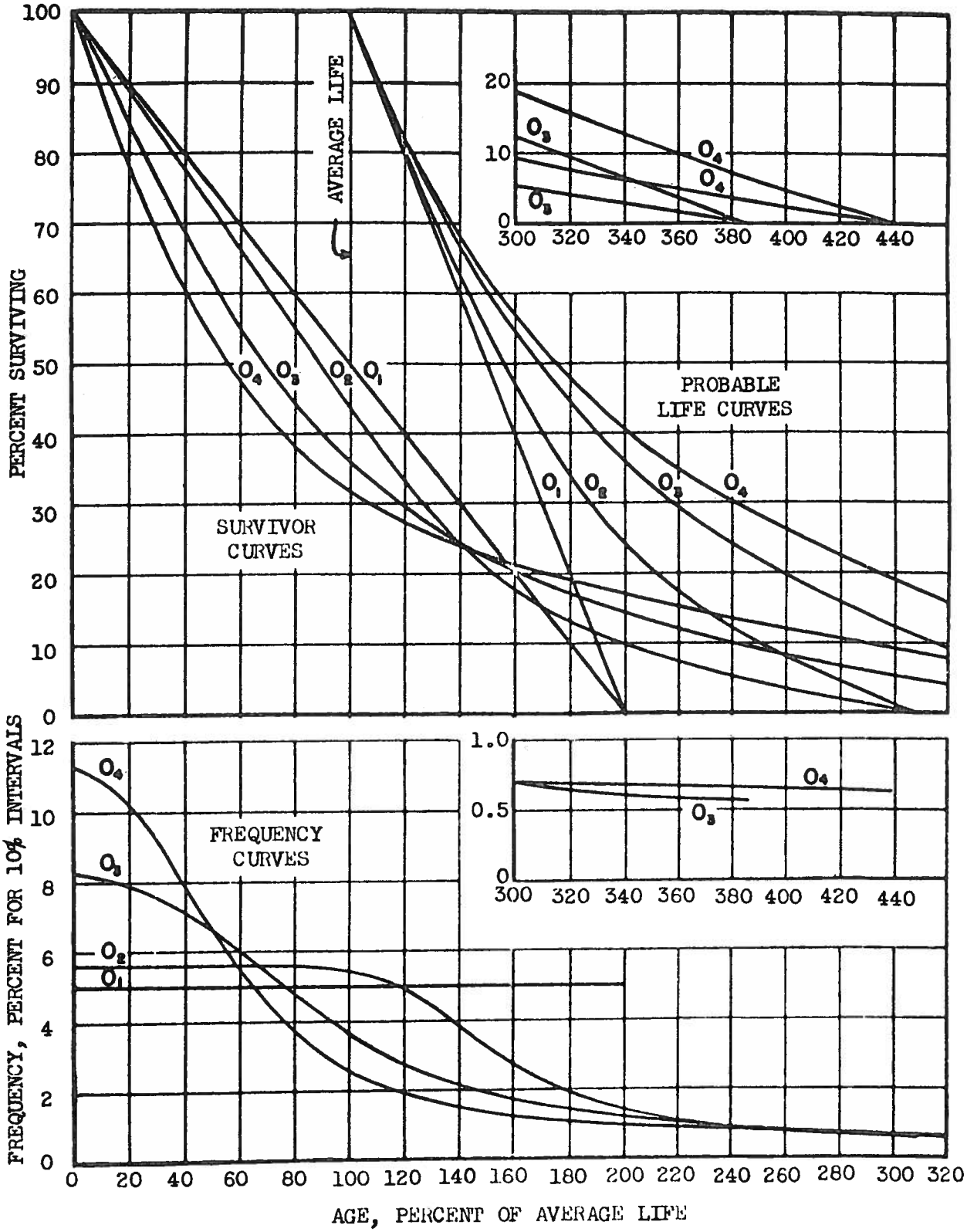


CHART NO. 10

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



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	2	3	4	5	6	7
Lookup	Curve	Age %	% Ret	% Surv	% Cond	% 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

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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 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % 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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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
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

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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 Lookup	2 Curve	3 Age %	4 % Ret	5 % Surv	6 % Cond	7 % 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

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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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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
R4.0090	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

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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
R4.0135	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

database

S:\Depreciation\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	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

VOLUME 11

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:

Gannett Fleming

Excellence Delivered ***As Promised***

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

Gannett Fleming

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

John J. Spanos

JOHN J. SPANOS
President

JJS:mle

066548.100

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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

	DEPRCIABLE 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 DECMEBER 31, 2021 (6)
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				1,289,607.60		41,310.00		120,487,362.70
304.30	PURIFICATION BUILDINGS	289,983,841.49				169,605.01		230,375.00		289,583,861.48
304.36	WASTE HANDLING AND TREATMENT STRUCTURES	11,668,886.83								11,668,886.83
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				60,000.00		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				3,575.00				135,669,088.72
306.00	LAKE, RIVER AND OTHER INTAKES	18,257,338.08				41,551.00				18,215,787.08
307.00	WELLS AND SPRINGS	10,694,793.00				71,610.27				10,623,182.73
310.00	POWER GENERATION EQUIPMENT	19,954,396.50				118,273.00		26,561.00		19,809,562.50
311.20	PUMPING EQUIPMENT - ELECTRIC PUMPING EQUIPMENT	25,829,705.97				1,954,569.05		116,716.00		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	6,787,710.63								6,787,710.63
320.10	PURIFICATION SYSTEM - LARGE STRUCTURES	278,019,906.37				27,162.27		627,852.00		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				42,367.00				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				2,905,114.51				114,750,102.23

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

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

	DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2021	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2021
	(1)	(2)	(3)	(4)	(5)	(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	COMMUNICATOIN EQUIPMENT - EQUIPMENT	3,459,420.00				3,459,420.00
346.10	COMMUNICATOIN EQUIPMENT - NON-TELEPHONE	6,770,729.39				6,770,729.39
346.19	COMMUNICATOIN EQUIPMENT - REMOTE CONTROL AND INSTRUMENTATION	2,790,901.75				2,790,901.75
346.20	COMMUNICATOIN 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	SURVIVOR CURVE		NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(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 PUMING STRUCTURES								
	LARGE STRUCTURES	70-R2.5	*	69,567,251.92	9,280,689	60,286,563	1,787,063	2.57	33.7
	OTHER STRUCTURES	55-R3		50,920,110.78	9,270,044	41,650,067	1,298,796	2.55	32.1
	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								
	LARGE STRUCTURES	60-R2.5	*	248,267,049.87	78,898,085	169,368,965	5,619,625	2.26	30.1
	OTHER STRUCTURES	60-R3		41,316,811.61	12,978,751	28,338,061	730,378	1.77	38.8
	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	2,338	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								
	LARGE STRUCTURES	50-R1.5	*	31,024,747.89	5,523,525	25,501,224	970,539	3.13	26.3
	OTHER STRUCTURES	50-R3		12,907,724.55	3,482,369	9,425,356	295,081	2.29	31.9
	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	SURVIVOR CURVE		NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)
304.62	STORES, SHOP AND GARAGE BUILDINGS								
	LARGE STRUCTURES	55-S0.5	*	48,973,108.70	11,428,586	37,544,523	1,323,667	2.70	28.4
	OTHER STRUCTURES	45-R3		6,138,205.16	3,952,462	2,185,743	82,351	1.34	26.5
	TOTAL ACCOUNT 304.62			55,111,313.86	15,381,048	39,730,266	1,406,018	2.55	28.3
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	35-S0.5		4,132,815.74	2,198,599	1,934,217	86,804	2.10	22.3
	TOTAL ACCOUNT 304			569,350,742.07	151,776,676	417,574,069	13,479,606	2.37	31.0
305.00	COLLECTING AND IMPOUNDING RESERVOIRS								
	LARGE RESERVOIRS	125-R2	*	128,044,777.60	18,481,585	109,563,192	1,809,335	1.41	60.6
	OTHER RESERVOIRS	75-R3		7,624,311.12	2,729,327	4,894,984	215,147	2.82	22.8
	TOTAL ACCOUNT 305			135,669,088.72	21,210,912	114,458,176	2,024,482	1.49	56.5
306.00	LAKE, RIVER AND OTHER INTAKES								
	LARGE INTAKES	55-S1	*	14,029,064.70	4,448,923	9,580,142	336,818	2.40	28.4
	OTHER INTAKES	50-S0.5		4,186,722.38	1,524,770	2,661,952	110,315	2.63	24.1
	TOTAL ACCOUNT 306			18,215,787.08	5,973,693	12,242,094	447,133	2.45	27.4
307.00	WELLS AND SPRINGS	55-S0		10,623,182.73	3,343,133	7,280,050	246,499	2.32	29.5
310.00	POWER GENERATION EQUIPMENT	43-S1		19,809,562.50	5,157,558	14,652,004	541,291	2.73	27.1
	PUMPING EQUIPMENT								
311.20	ELECTRIC	42-S0		23,758,420.92	4,483,984	19,274,437	769,961	3.24	25.0
311.50	OTHER	42-S0		2,389,457.83	559,308	1,830,150	74,670	3.12	24.5
311.52	SOURCE OF SUPPLY	42-S0		14,212,241.21	2,191,102	12,021,139	477,564	3.36	25.2
311.53	WATER TREATMENT	42-S0		46,865,937.19	18,885,547	27,980,390	1,331,345	2.84	21.0
311.54	TRANSMISSION AND DISTRIBUTION	42-S0		6,787,710.63	2,125,816	4,661,895	197,458	2.91	23.6
	TOTAL ACCOUNT 311			94,013,767.78	28,245,757	65,768,011	2,850,998	3.03	23.1
	PURIFICATION SYSTEM								
320.10	LARGE STRUCTURES								
	LARGE STRUCTURES	60-S0.5	*	255,675,564.06	73,452,571	182,222,993	7,332,914	2.87	24.9
	OTHER STRUCTURES	55-R3		21,689,328.04	3,259,936	18,429,392	451,433	2.08	40.8
	TOTAL ACCOUNT 320.1			277,364,892.10	76,712,507	200,652,385	7,784,347	2.81	25.8
320.18	LARGE STRUCTURES PAINT	10-SQ		103,245.73	103,246	0	0	-	-
320.19	LARGE STRUCTURES PAINT	10-SQ		3,522,542.77	3,513,661	8,882	2,537	0.07	3.5
320.20	CHEMICAL TREATMENT	36-R0.5		84,703,323.42	32,767,124	51,936,199	2,724,881	3.22	19.1
320.29	CHEMICAL TREATMENT PAINT	FULLY ACCRUED		8,167.87	8,168	0	0	-	-
320.30	GRANULAR ACTIVATED CARBON	7-L2		8,601,165.21	6,864,049	1,737,116	577,102	6.71	3.0
320.37	WASTE HANDLING AND TREATMENT - EQUIPMENT	30-R3		14,969,798.93	10,336,097	4,633,702	255,895	1.71	18.1
	TOTAL ACCOUNT 320			389,273,136.03	130,304,852	258,968,284	11,344,762	2.91	22.8

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	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(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	TRANSPORATION 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	10,439,225.68	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	COMUNICATION 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

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	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2021	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(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.

Appendix A-5.1

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

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

Account	BOOK RESERVE BALANCE AS OF 12/31/2020		PROJECTED DEPRECIATION ACCRUALS		PROJECTED RETIREMENTS		PROJECTED COST OF REMOVAL		PROJECTED SALVAGE		ACQUISITIONS		PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021
(1)	(2)	+	(3)	-	(4)	-	(5)	+	(6)	+	(7)	=	(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								7,494,569
304.15	7,899,182		1,048,120		390,721		285,226		11,722				8,283,077
304.20	16,349,816		2,976,022		674,004		121,321		20,220				18,550,733
304.30	88,458,520		6,134,387		2,425,064		315,258		24,251				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						9,005,894
304.62	13,999,901		1,402,722		23,709		3,319		5,453				15,381,048
304.63	2,130,689		84,121		14,220		2,844		853				2,198,599
305.00	18,943,519		2,267,393										21,210,912
306.00	5,508,799		464,894										5,973,693
307.00	3,088,287		259,686		4,840								3,343,133
310.00	4,866,142		517,290		179,265		46,609						5,157,558
311.20	3,771,805		1,021,432		264,319		44,934						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

Appendix A-5.1

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER OPERATIONS EXCLUDING STEELTON

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

Account	BOOK RESERVE BALANCE AS OF 12/31/2020	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(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								22,983,972
331.00	302,790,062		45,553,978		10,787,314		9,924,329						327,632,397
333.00	144,244,631		11,456,303		1,654,334		744,450						153,302,150
334.00	74,409,987		12,124,741		663,090		86,202		6,631				85,792,067
335.00	20,020,642		2,278,774		620,991		223,557						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										1,655,168
346.00	407,979		212,013		143,869								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
WATER OPERATIONS EXCLUDING STEELTON

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

ACCOUNT (1)	NET ORIGINALCOST AS OF 12/31/2020 (2)	NET ORIGINALCOST 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
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
304.39	119,362.95	119,362.95	2.79	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
311.52	12,617,080.84	14,212,241.21	3.35	445,658		445,658
311.53	42,848,060.38	46,865,937.19	2.80	1,212,264		1,212,264
311.54	6,787,710.63	6,787,710.63	3.01	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
320.19	3,522,542.77	3,522,542.77	0.07	2,538		2,538
320.20	80,858,527.99	84,703,323.42	3.26	2,678,001		2,678,001
320.29	8,167.87	8,167.87	0.00	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
330.20	15,192,040.47	18,929,725.89	2.09	345,686		345,686
330.30	818,672.56	818,672.56	2.05	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	NET ORIGINALCOST AS OF 12/31/2020	NET ORIGINALCOST AS OF 12/31/2021	ACCRUAL RATE	AVERAGE ACCRUALS	AMORTIZATION OF NET SALVAGE	PROJECTED DEPRECIATION ACCRUALS
(1)	(2)	(3)	(4)	(5)*	(6)	(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	2017 GROSS SALVAGE	2017 COST OF REMOVAL	2018 GROSS SALVAGE	2018 COST OF REMOVAL	2019 GROSS SALVAGE	2019 COST OF REMOVAL	PROJECTED 2020 GROSS SALVAGE	PROJECTED 2020 COST OF REMOVAL	PROJECTED 2021 GROSS SALVAGE	PROJECTED 2021 COST OF REMOVAL	NET SALVAGE	SALVAGE ACCRUAL
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)*	(13)=(12)/5
303.14				2,459.00		3,062.78					(2,459.00)	(492)
303.20		2,459.00		(2,459.00)							0.00	0
303.99											(3,062.78)	(613)
304.15		68,090.61	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			1,864,549.94	1,304,656.48		9,724.00		5,013.00	473,249.97	94,650
304.62		10,015.90	729.22	6,567.28	192,159.79	54,481.40	9,550.00	5,813.00	5,453.00	3,319.00	127,695.43	25,539
304.63		2,051.43		3,068.49	25,209.50	8,030.27	1,607.00	5,357.00	853.00	2,844.00	6,318.31	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		618.42		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		46,609.00	(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	23.00	90,807.00					(127,897.00)	(25,579)
330.00		645,827.57	162.78	2,820,506.21		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	8,480.00	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	50,503.00	16,835.00	48,674.00	16,225.00	(378,248.49)	(75,650)
342.00				245.80		9,682.12					(9,927.92)	(1,986)
343.00		8,345.37		7,924.48	48,579.17	57,836.24					(25,526.92)	(5,105)
344.00		1,202.11		4,823.99		14,919.23					(20,945.33)	(4,189)
345.00		98.42		860.13	12,288.18	15,876.66					(4,547.03)	(909)
346.00		646.24	132.58	30,002.27		87,193.50					(117,709.43)	(23,542)
347.00		12,915.37		20,027.66	8,306.50	73,665.55					(98,302.08)	(19,660)
348.00				(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	117,804.00	13,401,143.00	(90,752,736.95)	(18,150,547)

ummation of Columns (2) through (11).

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:

Gannett Fleming

Excellence Delivered ***As Promised***

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

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania

Gannett Fleming

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

John J. Spanos

JOHN J. SPANOS
President

JJS:mle

066548.100

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PART I. RESULTS OF STUDY

PENNSYLVANIA-AMERICAN WATER COMPANY

WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY 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.

Appendix A-5.1

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2022

DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2022	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2022
(1)	(2)	(3)	(4)	(5)	(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	168,706.08				168,706.08
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 SADSBURY 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	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2022	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
	DEPRECIABLE PLANT							
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	1,372,711.27	97,323	1,275,388	38,320	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	356,424.84	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	107,830	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					
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		1,592,020.09					
	TOTAL NONDEPRECIABLE PLANT		**2,992,203.14**					
	AMORTIZATION OF NET SALVAGE					**897,190**		
	TOTAL UTILITY PLANT		**357,383,902.70**	**74,312,248**	**280,079,451**	**9,964,217**		

PENNSYLVANIA-AMERICAN WATER COMPANY
WASTEWATER SSS OPERATIONS EXCLUDING SADSBURY AND EXETER

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2022, OF BOOK RESERVE AS OF DECEMBER 31, 2021

ACCOUNT	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2021	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2022
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(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						998,400
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 SADSBURY AND EXETER

TABLE 4. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED DECEMBER 31, 2022

ACCOUNT	NET ORIGINAL COST AS OF 12/31/2021	NET ORIGINAL COST AS OF 12/31/2022	ACCRUAL RATE	DEPRECIATION ACCRUALS	AMORTIZATION OF NET SALVAGE	PROJECTED DEPRECIATION ACCRUALS
(1)	(2)	(3)	(4)	(5)*	(6)	(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 SADSBURY AND EXETER

TABLE 5. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

ACCOUNT	2018			2019			PROJECTED 2020			PROJECTED 2021			PROJECTED 2022				
	GROSS SALVAGE	-	COST OF REMOVAL	+	GROSS SALVAGE	-	COST OF REMOVAL	+	GROSS SALVAGE	-	COST OF REMOVAL	+	GROSS SALVAGE	-	COST OF REMOVAL	=	NET SALVAGE	SALVAGE ACCRUAL
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		(12)*	(13)=(12)/5
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				2,386		(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														(14,269)	(2,854)
360.10			85,350				245,202				41,420				54,123				64,294		(490,390)	(98,078)
361.10			345,943				1,038,559				170,104				222,272				225,705		(2,002,583)	(400,517)
361.20							109,567		440		132,346		452		135,702		457		137,220		(513,485)	(102,697)
363.00			48,455				150,830				130,023				122,465				123,835		(575,608)	(115,122)
364.00							240														(240)	(48)
371.00			(18,885)				141,438				37,534								2,463		(162,550)	(32,510)
380.00			12,304				214,843				11,073				65,469				4,070		(307,759)	(61,552)
382.00			981																		(981)	(196)
389.10			(3,678)				5,682														(2,003)	(401)
390.00			94																		(94)	(19)
391.00			9,708				6,029				5,013				4,669				4,770		(30,189)	(6,038)
393.00							1,931														(1,931)	(386)
394.00			118				5,593				1,012								86		(6,809)	(1,362)
395.00							2,048				157				146				149		(2,500)	(500)
396.00							1,898				21,079				293				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

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

VOLUME 11

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:

Excellence Delivered ***As Promised***

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

Gannett Fleming

*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

John J. Spanos

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

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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

	DEPRCIABLE 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 DECMEBER 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	274,324,357.32
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

Appendix A-5.1

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 1. DEVELOPMENT OF NET ORIGINAL COST AS OF DECEMBER 31, 2018

	DEPRCIABLE GROUP	ORIGINAL COST AS OF DECEMBER 31, 2018	- CUSTOMER ADVANCES	- CONTRIBUTIONS IN AID OF CONSTRUCTION	- EXCLUDED PROPERTY	= NET ORIGINAL COST AS OF DECMEBER 31, 2018
	(1)	(2)	(3)	(4)	(5)	(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		61.00		26,095,301.58
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		4,085.00		17,031,033.69
348.00	OTHER TANGIBLE EQUIPMENT	735,410.29				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.		1,762,423.06					
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 PUMING STRUCTURES								
	LARGE STRUCTURES	70-R2.5	*	64,671,856.38	7,894,471	56,777,385	1,515,893	2.34	37.5
	OTHER STRUCTURES	55-R3		41,317,433.32	9,408,085	31,909,348	1,013,195	2.45	31.5
	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								
	LARGE STRUCTURES	60-R2.5	*	221,661,139.93	71,976,298	149,684,840	4,739,588	2.14	31.6
	OTHER STRUCTURES	55-R3		52,663,217.39	17,798,107	34,865,110	965,350	1.83	36.1
	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								
	LARGE STRUCTURES	50-R1.5	*	33,043,308.29	2,227,308	30,816,000	1,588,814	4.81	19.4
	OTHER OTHER STRUCTURES	45-R3		6,903,844.33	1,760,585	5,143,259	252,918	3.66	20.3
	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								
	LARGE STRUCTURES	75-R2	*	46,534,320.53	5,760,761	40,773,559	1,216,856	2.61	33.5
	OTHER OTHER STRUCTURES	45-R3		8,687,390.61	2,972,865	5,714,526	197,657	2.28	28.9
	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	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
304.63	MISCELLANEOUS STRUCTURES AND IMPROVEMENTS	50-R2.5	4,933,374.39	688,106	4,245,268	118,887	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							
	LARGE RESERVOIRS	125-R2.5 *	127,795,628.42	12,895,938	114,899,691	1,855,378	1.45	61.9
	OTHER RESERVOIRS	75-R3	6,558,563.48	1,994,257	4,564,306	211,899	3.23	21.5
	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							
	LARGE RESERVOIRS	65-S1.5 *	14,550,654.76	4,232,561	10,318,093	281,627	1.94	36.6
	OTHER RESERVOIRS	60-S1	5,413,664.59	1,518,542	3,895,123	114,947	2.12	33.9
	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							
311.20	ELECTRIC PUMPING EQUIPMENT	50-R1	19,211,002.14	2,866,110	16,344,892	607,142	3.16	26.9
311.50	OTHER	50-R1	1,634,152.00	442,578	1,191,574	38,877	2.38	30.6
311.52	SOURCE OF SUPPLY	50-R1	8,509,617.14	1,490,308	7,019,309	230,180	2.70	30.5
311.53	WATER TREATMENT	50-R1	47,732,222.90	24,443,262	23,288,961	844,364	1.77	27.6
311.54	TRANSMISSION AND DISTRIBUTION	50-R1	8,693,988.14	2,116,640	6,577,348	228,997	2.63	28.7
	TOTAL ACCOUNT 311		85,780,982.32	31,358,898	54,422,084	1,949,560	2.27	27.9
	PURIFICATION SYSTEM							
320.10	PURIFICATION STRUCTURES							
	LARGE STRUCTURES	70-R2 *	184,705,299.72	68,522,614	116,182,684	3,855,315	2.09	30.1
	OTHER OTHER STRUCTURES	55-R3	17,657,644.79	6,494,933	11,162,712	326,633	1.85	34.2
	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	6.5
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	8,693,834.87	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	65-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	17,636,401.77	1,995,151	15,641,251	351,909	2.00	44.4
330.20	GROUND LEVEL FACILITIES	65-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	15,980	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	6.5
330.59	DISTRIBUTION RESERVOIRS AND STANDPIPES - PAINTING	10-SQ	36,418,707.41	23,152,151	13,266,556	1,947,156	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

	DEPRECIABLE GROUP	SURVIVOR CURVE	NET ORIGINAL COST AS OF DECEMBER 31, 2018	BOOK RESERVE	FUTURE ACCRUALS	ANNUAL ACCRUAL AMOUNT	ANNUAL ACCRUAL RATE, PERCENT	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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	138,762,554	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	103,228,152.27	21,864,870	81,363,282	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	7,051,454	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	TRANSPORATION 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	3,523,998	1,359,335	437,513	8.96	3.1
	OTHER	6-L3	5,895,986.16	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	25,808	6.45	8.7
343.00	TOOLS AND WORK EQUIPMENT	20-SQ	26,095,301.58	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	54,619	2.12	3.9
346.00	COMUNICATION 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.

Appendix A-5.1

Appendix A-5.1

PENNSYLVANIA-AMERICAN WATER COMPANY

TABLE 3. BRINGFORWARD TO DECEMBER 31, 2018, OF BOOK RESERVE AS OF DECEMBER 31, 2017

Account	BOOK RESERVE BALANCE AS OF 12/31/2017	+	PROJECTED DEPRECIATION ACCRUALS	-	PROJECTED RETIREMENTS	-	PROJECTED COST OF REMOVAL	+	PROJECTED SALVAGE	+	ACQUISITIONS AND ADJUSTMENTS	=	PROJECTED BOOK RESERVE BALANCE AS OF 12/31/2018
(1)	(2)		(3)		(4)		(5)		(6)		(7)		(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**

Appendix A-5.1

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	1.18	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	EXPERIENCED AND ESTIMATED NET SALVAGE					5 - YEAR AMORT.
	2014	2015	2016	2017	2018	
(1)	(2)	(3)	(4)	(5)	(5)	(7)
	0	0	26	0	0	(5)
303.35	(4)	0	0	0	0	1
304.15	(46,636)	(46,243)	(70,089)	0	0	32,594
304.20	(53,488)	(56,757)	(26,237)	0	(3,500)	27,996
304.30	319,920	(476,945)	(191,035)	(19,080)	(93,825)	92,193
304.61	(65,824)	0	(70,936)	0	(658,910)	159,134
304.62	(80,107)	(3,615)	(48,019)	(14,400)	(63,093)	41,847
304.63	0	(59,776)	(11,676)	(8,250)	0	15,940
305.00	(317,805)	(46,348)	(84,116)	(59,314)	(169,000)	135,316
306.00	(2,002)	(324)	(6,542)	0	0	1,773
307.00	(13,938)	(16,118)	(1,054)	0	0	6,222
310.00	0	(8,915)	(45,776)	0	0	10,938
311.00	(162,341)	(159,509)	(103,119)	0	(400)	85,074
320.00	(93,583)	(182,337)	(101,953)	(91,944)	(108,196)	115,603
320.30	(27,730)	(78,144)	(16,457)	0	(500)	24,566
320.37	(6,734)	0	(192,597)	0	0	39,866
330.00	(631,746)	(1,024,942)	(1,370,181)	(475,306)	(278,070)	756,049
331.00	(3,496,437)	(7,578,550)	(11,564,326)	(4,703,868)	(4,123,922)	6,293,421
333.00	(446,624)	(606,667)	(987,614)	(1,239,963)	(1,243,387)	904,851
334.00	(764,036)	(1,258,131)	(770,084)	(1,414,519)	(1,622,381)	1,165,830
335.00	(146,091)	81,394	(276,615)	(244,260)	(250,898)	167,294
340.00	1,941	(20,871)	(41,508)	0	0	12,088
341.00	(1,555)	(13,623)	(1,158)	(11,060)	(13,855)	8,250
342.00	0	(630)	0	0	0	126
343.00	(9,640)	(19,321)	(18,941)	0	0	9,580
344.00	(983)	(3,939)	(5,015)	0	0	1,987
345.00	(201)	(3,680)	(472)	0	0	871
346.00	(1,029)	(7,472)	(777)	0	0	1,856
347.00	(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

Appendix A-5.1

PART II. DETAILED DEPRECIATION CALCULATIONS

VOLUME 12

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

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

Prepared by:

Gannett Fleming

Excellence Delivered As Promised

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

Gannett Fleming

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

John J. Spanos

JOHN J. SPANOS
Sr. Vice President

JJS:mlw

062027.100

Gannett Fleming Valuation and Rate Consultants, LLC
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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

DEPRCIABLE 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 DECMEBER 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
361.10 COLLECTION SEWERS - GRAVITY MAINS	73,305,655.63	143,423.53	9,166,636.12		63,995,595.98
361.20 MANHOLES	13,045,669.35		4,387,312.76		8,658,356.59
363.00 SERVICES	15,575,965.95	70,197.45	3,737,893.58		11,767,874.92
364.00 FLOW MEASURING DEVICES	533,521.59		14,726.81		518,794.78
365.00 FLOW MEASURING INSTALLATIONS	20,918.30				20,918.30
370.00 RECEIVING WELLS	103,531.95				103,531.95
371.00 PUMPING EQUIPMENT	7,114,659.39		66,626.22		7,048,033.17
380.00 TREATMENT EQUIPMENT	52,675,840.17		2,200,080.47		50,475,759.70
381.00 PLANT SEWERS	6,450,916.81		30,192.33		6,420,724.48
382.00 OUTFALL SEWER LINES	674,274.67				674,274.67
389.10 OTHER PLANT AND MISCELLANEOUS EQUIPMENT	273,149.74				273,149.74
390.00 OFFICE FURNITURE AND EQUIPMENT	199,675.37				199,675.37
391.00 TRANSPORTATION EQUIPMENT	440,469.70				440,469.70
392.00 STORES EQUIPMENT	64,249.97				64,249.97
393.00 TOOLS, SHOP AND GARAGE EQUIPMENT	536,841.71				536,841.71
394.00 LABORATORY EQUIPMENT	342,757.97				342,757.97
395.00 POWER OPERATED EQUIPMENT	532,736.59		10,000.00		522,736.59
396.00 COMMUNICATION EQUIPMENT	1,522,349.38				1,522,349.38
397.00 MISCELLANEOUS EQUIPMENT	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**

Appendix A-5.1

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	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(6)/(3)	(8)
	DEPRECIABLE PLANT							
354.20	STRUCTURES AND IMPROVEMENTS - COLLECTION	45-R3	479,296.86	49,350	429,947	11,001	2.30	39.1
354.30	STRUCTURES AND IMPROVEMENTS - SPP	50-R2.5	15,434,763.20	4,146,488	11,288,276	249,925	1.62	45.2
354.40	STRUCTURES AND IMPROVEMENTS - TDP	65-R2	49,105,410.94	9,948,199	39,157,212	691,430	1.41	56.6
354.70	STRUCTURES AND IMPROVEMENTS - GENERAL	35-S1	2,130,769.53	1,306,466	824,304	24,748	1.16	33.3
355.00	POWER GENERATING EQUIPMENT	35-R2.5	4,736,523.57	2,652,039	2,084,484	70,197	1.48	29.7
360.10	COLLECTION SEWERS - FORCE MAINS	70-S2	19,257,554.46	175,918	19,081,636	359,040	1.86	53.1
361.10	COLLECTION SEWERS - GRAVITY MAINS	70-R2.5	63,995,595.98	11,371,594	52,624,002	925,253	1.45	56.9
361.20	MANHOLES	50-S1.5	8,658,356.59	1,103,203	7,555,154	183,051	2.11	41.3
363.00	SERVICES	38-R3	11,767,874.92	3,048,755	8,719,120	380,797	3.24	22.9
364.00	FLOW MEASURING DEVICES	20-L3	518,794.78	(3,852)	522,647	39,167	7.55	13.3
365.00	FLOW MEASURING INSTALLATIONS	30-S1.5	20,918.30	4,022	16,896	733	3.50	23.1
370.00	RECEIVING WELLS	50-R3	103,531.95	16,346	87,186	2,042	1.97	42.7
371.00	PUMPING EQUIPMENT	40-S0	7,048,033.17	1,267,841	5,780,192	162,743	2.31	35.5
380.00	TREATMENT EQUIPMENT	45-R2	50,475,759.70	10,681,481	39,794,279	1,072,308	2.12	37.1
381.00	PLANT SEWERS	50-R3	6,420,724.48	831,789	5,588,936	129,614	2.02	43.1
382.00	OUTFALL SEWER LINES	50-R3	674,274.67	157,760	516,515	13,676	2.03	37.8
389.10	OTHER PLANT AND MISCELLANEOUS EQUIPMENT	20-S2.5	273,149.74	72,881	200,268	14,747	5.40	13.6
390.00	OFFICE FURNITURE AND EQUIPMENT	20-SQ	199,675.37	53,384	146,291	11,861	5.94	12.3
391.00	TRANSPORTATION EQUIPMENT	15-L4	440,469.70	245,469	195,000	20,435	4.64	9.5
392.00	STORES EQUIPMENT	25-SQ	64,249.97	18,187	46,063	2,310	3.60	19.9
393.00	TOOLS, SHOP AND GARAGE EQUIPMENT	20-SQ	536,841.71	241,652	295,190	18,017	3.36	16.4
394.00	LABORATORY EQUIPMENT	15-SQ	342,757.97	193,677	149,081	13,157	3.84	11.3
395.00	POWER OPERATED EQUIPMENT	16-L2.5	522,736.59	242,424	280,312	32,263	6.17	8.7
396.00	COMMUNICATION EQUIPMENT	15-SQ	1,522,349.38	854,060	668,289	65,055	4.27	10.3
397.00	MISCELLANEOUS EQUIPMENT	15-SQ	3,227,051.56	467,686	2,759,366	288,902	8.95	9.6
	TOTAL DEPRECIABLE PLANT		**247,957,465.09**	**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 2012 (2)	2013 (3)	2014 (4)	2015 (5)	2016 (5)	5 - YEAR AMORT. (7)
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

Appendix A-5.1

PART II. DETAILED DEPRECIATION CALCULATIONS

S:\water industry\Lower Makefield Township Sewer Authority\Lower Makefield Report & Testimony\Lower Makefield Wastewater Colllection 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	75-R2.5	9,872,459.72	1,451,118	8,421,342	160,591	52.4	1.63
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 February 24, 2024

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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 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	**100.0%**						**7.70%**
Growth (g)							**3.03%**
Rate without Growth: [(1+r)/(1+g)]-1							**4.53%**

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	Not Applicable	Not Applicable	1.74%
Equity	67%	Market	9.65%	Market	Not Applicable	Not Applicable	6.47%
Total Capital r	**100.0%**						**8.21%**
Growth (g)							**3.03%**
Rate without Growth: [(1+r)/(1+g)]-1							**5.03%**

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	**100.0%**						**6.84%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.84%**

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 first quarter (January 5, 2024) closest to 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 5.21% on January 5, 2024. 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 5.26% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

1	2	3	4	5
Value Line Investment Surveys **Water Industry** **As of First Quarter 2024(1-1-2024)**				
	S&P Debt Rating	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)
		Input Value Line	Input Value Line	(4) / (3)
American States Water		575.5	44.0	7.65%
American Water	Baa1	11,698.0	449.0	3.84%
California Water		1,052.8	44.0	4.18%
Essential Utilities, Inc.	Baa2	6,456.0	254.0	3.93%
Middlesex Water		354.3	7.5	2.12%
SJW Corporation		1,533.8	50.0	3.26%
		21,670.4	848.5	3.92%
Minimum				2.12%
wtd Mean				3.92%
Mean				4.16%
Median				3.89%
Maximum				7.65%
Debt Rating and Cost of Debt				
Embedded		3.92%	wtd mean col 5	
Rating (S&P)		A	Input	
Market Cost of Debt @Bond Rating Value Line Selected Yields		5.21%	Input	
Use		5.21%	AUS Input	
Issuance Cost PUFT Data 2018-2019		0.90%	Input	
Final Cost of Debt		5.26%		

$K_d = K_u / (100\% - f)$

where:

K_d =Cost of Debt recognizing issuance costs

K_u is the market cost of debt without consideration of issuance costs

f is the cost of issuance as a percentage of the debt's par value

$K_d = 5.21\% / (100\% - 0.90\%)$

$K_d = 5.26\%$

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.

1	2	3	4	5	6	7	8			9			10			11			12			13			14			15			16		17
Value Line Investment Surveys																																	
Water Industry																																	
As of First Quarter 2024(1-1-2024)																																	
								Revenues					Cash Flows						Earnings				Dividends						Book Value					
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Beta	Divided	Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to 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	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	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	1783	01/05/2024	0.7	2.2%	1.5%	2.0%	6.5%		4.5%	4.0%	7.0%		6.5%	6.5%	6.5%		6.5%	9.5%	8.5%		8.5%	5.5%	6.5%		5.0%							
American Water	NYSE	AWK	1784	01/05/2024	0.95	2.3%	3.0%	3.0%	4.0%		8.5%	10.5%	3.0%		11.0%	15.0%	3.0%		9.0%	10.0%	8.5%		5.0%	6.0%	6.5%									
California Water	NYSE	CWT	1785	01/05/2024	0.75	2.0%	2.5%	3.5%	4.0%		6.0%	9.0%	2.0%		7.5%	11.0%	6.5%		4.0%	6.0%	6.5%		7.0%	9.0%	5.5%									
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	1	3.4%	5.5%	10.0%	3.5%		6.5%	6.0%	6.0%		6.5%	3.5%	7.5%		7.5%	7.0%	8.0%		10.5%	14.0%	4.5%									
Middlesex Water	NDQ	MSEX	1787	01/05/2024	0.75	1.9%	2.5%	1.5%	4.5%		8.5%	10.0%	3.0%		9.5%	11.0%	5.0%		4.0%	6.5%	6.5%		6.5%	9.5%	2.0%									
SJW Corporation	NYSE	SJW	1788	01/05/2024	0.85	2.3%	4.5%	3.0%	3.5%		7.0%	3.0%	-1.0%		7.1%	-2.0%	8.0%		7.0%	9.0%	5.0%		9.0%	10.5%	4.5%									
Minimum					0.70	1.90%	1.50%	1.50%	3.50%		4.50%	3.00%	-1.00%		6.50%	-2.00%	3.00%		4.00%	6.00%	5.00%		5.00%	6.00%	2.00%									
wtd Mean																																	
Mean					0.83	2.35%	3.25%	3.83%	4.33%		6.83%	7.08%	3.33%		8.02%	7.50%	6.08%		6.83%	7.83%	7.17%		7.25%	9.25%	4.67%									
Median					0.80	2.25%	2.75%	3.00%	4.00%		6.75%	7.50%	3.00%		7.30%	8.75%	6.50%		7.25%	7.75%	7.25%		6.75%	9.25%	4.75%									
Maximum					1.00	3.40%	5.50%	10.00%	6.50%		8.50%	10.50%	7.00%		11.00%	15.00%	8.00%		9.50%	10.00%	8.50%		10.50%	14.00%	6.50%									

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 $B_m = 1.0$.

The inputs to this model are developed from an analysis of the financial markets. The risk-free government securities rate (rf) is readily available from financial sources; we have used the risk-free rate at the study date of 4.62% as determined by Kroll in their risk premia analysis published in 2024.

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 7.17% based on the Ibbotson Associates research, while the size premiums (r_s) were established at:

0.66% for mid-capitalization companies with market equity capitalization between $3,011.22 and $14,820.05 million.

1.24% for low-capitalization companies with market equity capitalization between $555.88 and $3,011.22million.

2.91% for micro-capitalization companies with market equity capitalization under $555.88 million.

There is no size premium (0.0%) for companies with market equity capitalization above $14,820.05 million.

Dividend Yield and Growth Model (DGM)

The dividend yield and growth model were also review in estimating the cost of equity. Two models were considered, those of:

re = Dividend Yield + Dividend Growth

re = Dividend Yield + 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:

Value Line Investment Surveys
Water Industry
As of First Quarter 2024(1-1-2024)

Cost of Equity Dividend Growth Model

Dividend 2.35% mean Col 7

Growth	Past 10 yrs	Past 5 yrs	Est'd 16-18 to 22-24	Beta	Input	Min-Max
Revenues	3.25%	3.83%	4.33%			
Cash Flow	6.75%	7.08%	3.33%			
Earnings	8.02%	7.50%	6.08%			
Dividends	7.25%	7.83%	7.17%			
Book Value	6.75%	9.25%	4.67%			
Mean	6.40%	7.10%	5.12%		0.83	0.7-1

Growth 5.12% AUS Input

Cost of Equity Dividend Growth Model

Cost of Equity Capital Asset Pricing Model (CAPM)

						Long term Government Bonds Income Return SBBI
Dividend	2.35%		Risk Free Rate		4.62% Input	(Mean)
Growth	5.12%		Risk Premium			
Cost of Equity	7.47%		Beta		0.83	
			Risk Premia	7.17% Input SBBI	6.87% Input	$r_p=r_m-r_f$ per PA PUC
			Size Premia		$ Millions	$ Millions
			Micro	2.91% Input SBBI	-	554.5
			Small	1.24% Input SBBI	554.5	3,010.8
			Mid	0.66% Input SBBI	3,010.8	14,820.1
			Large	0.00% Input SBBI	14,820.1	
			Size Premia		0.00% WADS Input	
			Cost of Equity		10.35%	

Cost of Equity		Pennsylvania PUC
Dividend Growth Model	7.47%	Bureau of Technical Utility Services
Capital Asset Pricing Model (CAPM)	10.35%	Report on the Quarterly Earnings
Mean	8.91%	of Jurisdictional Utilities
Issuance Cost PUFT 2008-2019	3.60%	31-Dec-24
Final Cost of Equity	9.24%	

Cost of Equity	9.65%	WADS Input Jurisdictional Exception
Growth	5.12%	Input from Growth Above
Inflation	3.03%	SBBI 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 9.24% was determined for the water industry using the following formula which incorporates the above-described issuance costs:

$K_e = K_{e'} / (100\% - f)$

where:

K_e =Cost of equity recognizing issuance costs

$K_{e'}$ is the market cost of equity without consideration of issuance costs (8.91%)

f is the cost of issuance as a percentage of the equity par value (3.60%)

K_e= 8.91% / (100% -3.60%)

K_e= 9.24%

An equity cost of 9.65% 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 December 31, 2023.

Tax Rate

The tax rate was determined at 28.89% (State and Federal) based on the Value Line Investment Survey as follows:

1	2	3	4	5				
Value Line Investment Surveys								
Water Industry								
As of First Quarter 2024(1-1-2024)								
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Tax Rate			
					2019	2020	2021	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	1783	01/05/2024	23.2%	24.5%	24.0%	24.0%
American Water	NYSE	AWK	1784	01/05/2024	18.7%	21.0%	21.0%	24.0%
California Water	NYSE	CWT	1785	01/05/2024	3.3%	21.0%	21.0%	21.0%
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	0.0%	11.0%	14.0%	16.0%
Middlesex Water	NDQ	MSEX	1787	01/05/2024	7.1%	21.0%	21.0%	21.0%
SJW Corporation	NYSE	SJW	1788	01/05/2024	10.3%	21.0%	21.0%	21.0%
Minimum					0.00%	11.00%	14.00%	16.00%
wtd Mean								
Mean					10.43%	19.92%	20.33%	21.17%
Median					8.70%	21.00%	21.00%	21.00%
Maximum					23.20%	24.50%	24.00%	24.00%
	Historical		Current					
Embedded Tax Rate	10.43%	Mean 2019	19.92%	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

The capital structure was determined based on the water industry market indictors published by Value Line Investment Survey published January 5, 2024, as detailed as follows:

2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Value Line Investment Surveys **Water Industry** **As of First Quarter 2024(1-1-2024)**																				
Company	Exchange	Ticker	Valueline No.	Valueline 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	Portion Market Equity	Capitalization	Total Market Capital
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(6) / (21)	Input Value Line	Input Value Line	(9) / (8)	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(14) / (21)	Input Value Line	Input Value Line	Input Value Line	(18) / (21)	Input Value Line	(6)+(14)+(18)
					$s Million	%	$s Million	$s Million	%	%	%	%	$s Million	%	Shares Million	$s per Share	$s Million	%		$s Million
American States Water	NYSE	AWR	1783	01/05/2024	612.9	16.87%	575.5	44.0	7.65%	43.0%	46.5%	53.5%	0	0.00%	36.9805920	81.7	3,020.2	83.13%	Mid Cap	3,633.1
American Water	NYSE	AWK	1784	01/05/2024	12,190.0	32.24%	11,698.0	449.0	3.84%	54.0%	57.5%	42.5%	2	0.01%	194.7049970	131.6	25,615.4	67.75%	Large Cap	37,807.4
California Water	NYSE	CWT	1785	01/05/2024	1,069.6	26.17%	1,052.8	44.0	4.18%	44.0%	40.5%	59.5%	0	0.00%	57.7110000	52.3	3,017.7	73.83%	Mid Cap	4,087.3
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	6,806.4	40.15%	6,456.0	254.0	3.93%	52.0%	52.5%	47.5%	0	0.00%	273.1658170	37.1	10,145.4	59.85%	Large Cap	16,951.8
Middlesex Water	NDQ	MSEX	1787	01/05/2024	361.7	23.08%	354.3	7.5	2.12%	46.0%	41.5%	58.5%	2.4	0.15%	17.8060000	67.6	1,203.3	76.77%	Small Cap	1,567.4
SJW Corporation	NYSE	SJW	1788	01/05/2024	1,577.3	42.62%	1,533.8	50.0	3.26%	57.0%	52.5%	47.5%	0	0.00%	31.9330000	66.5	2,123.9	57.38%	Mid Cap	3,701.2
Total					22,617.9	33.39%	21,670.4	848.5	3.92%				4.4	0.01%			45,125.9	66.61%		67,748.2
Minimum						16.87%			2.12%	43.00%	40.50%	42.50%		0.00%				57.38%		
wtd Mean						33.39%			3.92%					0.01%				66.61%		
Mean						30.19%			4.16%	49.33%	48.50%	51.50%		0.03%				69.79%		
Median						29.21%			3.89%	49.00%	49.50%	50.50%		0.00%				70.79%		
Maximum						42.62%			7.65%	57.00%	57.50%	59.50%		0.15%				83.13%		

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:

	Water Industry Capital Structure			
	Market		Embedded	
Capital Structure	Proportion	Reference	Proportion	Reference
Debt	33.39%	wtd mean col 7	49.33%	mean col 11
Preferred	0.01%	wtd mean col 15	0.03%	mean col 15
Equity	66.61%	wtd mean col 19	51.50%	mean col 13
Total	100.01%		100.86%	
Use				
Debt	33%	AUS Input	49%	AUS Input Jurisdictional Execption
Equity	67%	AUS Input	51%	AUS Input Jurisdictional Execption
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 7.07% as follows:

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	**100.0%**						**7.70%**
Growth (g)							**3.03%**
Rate without Growth: [(1+r)/(1+g)]-1							**4.53%**

While the require return on rate base was determined to be 6.84% follows:

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	**100.0%**						**6.84%**
Growth (g)						Not Applicable	**0.00%**
Rate without Growth: [(1+r)/(1+g)]-1							**6.84%**

The statistics supporting these findings can be found in the Cost of Capital section of this report.

S:\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	28.89%	71.11%	1.23%
Equity	67%	Market	9.65%	Market	0.0%	100.0%	6.47%
Total Capital r	100.0%						7.70%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							4.53%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	33%	Market	5.26%	Market	Not Applicable	Not Applicable	1.74%
Equity	67%	Market	9.65%	Market	Not Applicable	Not Applicable	6.47%
Total Capital r	100.0%						8.21%
Growth (g)							3.03%
Rate without Growth: [(1+r)/(1+g)]-1							5.03%

Water and Wastewater Cost of Capital
First Quarter 2024 (02-24-2024)

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	49%	Embedded	3.92%	Embedded	Not Applicable	Not Applicable	1.92%
Equity	51%	Embedded	9.65%	Market	Not Applicable	Not Applicable	4.92%
Total Capital r	100.0%						6.84%
Growth (g)						Not Applicable	0.00%
Rate without Growth: [(1+r)/(1+g)]-1							6.84%

Value Line Investment Surveys
Water Industry
As of First Quarter 2024(1-1-2024)

1	2	3	4	5
	S&P Debt Rating	Long Term Debt	Long Term Interest	Long Term Interest Rate (embedded)
		Input Value Line	Input Value Line	(4) / (3)
American States Water		575.5	44.0	7.65%
American Water	Baa1	11,698.0	449.0	3.84%
California Water		1,052.8	44.0	4.18%
Essential Utilities, Inc.	Baa2	6,456.0	254.0	3.93%
Middlesex Water		354.3	7.5	2.12%
SJW Corporation		1,533.8	50.0	3.26%
		21,670.4	848.5	3.92%
Minimum				2.12%
wtd Mean				3.92%
Mean				4.16%
Median				3.89%
Maximum				7.65%

Debt Rating and Cost of Debt

Embedded	3.92%	wtd mean col 5
Rating (S&P)	A	Input
Market Cost of Debt @Bond Rating		
Value Line Selected Yields	5.21%	Input
Use	5.21%	AUS Input
Issuance Cost PUFT Data 2018-2019	0.90%	Input
Final Cost of Debt	5.26%	

Value Line Analysis

S:\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

1	2	3	4	5	6	7	8		9		10		11		12		13		14		15		16	17
Value Line Investment Surveys **Water Industry** **As of First Quarter 2024(1-1-2024)**																								
							Revenues				Cash Flows				Earnings				Dividends				Book Value	
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Beta	Divided	Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to Future 3 Years		Past 10 yrs	Past 5 yrs	Past 3 Years to 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	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	Input Value Line		Input Value Line	Input Value Line	Input Value Line
American States Water	NYSE	AWR	1783	01/05/2024	0.7	2.2%	1.5%	2.0%	6.5%		4.5%	4.0%	7.0%		6.5%	6.5%	6.5%		9.5%	8.5%	8.5%		5.5%	6.5%	5.0%
American Water	NYSE	AWK	1784	01/05/2024	0.95	2.3%	3.0%	3.0%	4.0%		8.5%	10.5%	3.0%		11.0%	15.0%	3.0%		9.0%	10.0%	8.5%		5.0%	6.0%	6.5%
California Water	NYSE	CWT	1785	01/05/2024	0.75	2.0%	2.5%	3.5%	4.0%		6.0%	9.0%	2.0%		7.5%	11.0%	6.5%		4.0%	6.0%	6.5%		7.0%	9.0%	5.5%
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	1	3.4%	5.5%	10.0%	3.5%		6.5%	6.0%	6.0%		6.5%	3.5%	7.5%		7.5%	7.0%	8.0%		10.5%	14.0%	4.5%
Middlesex Water	NDQ	MSEX	1787	01/05/2024	0.75	1.9%	2.5%	1.5%	4.5%		8.5%	10.0%	3.0%		9.5%	11.0%	5.0%		4.0%	6.5%	6.5%		6.5%	9.5%	2.0%
SJW Corporation	NYSE	SJW	1788	01/05/2024	0.85	2.3%	4.5%	3.0%	3.5%		7.0%	3.0%	-1.0%		7.1%	-2.0%	8.0%		7.0%	9.0%	5.0%		9.0%	10.5%	4.5%
Minimum					0.70	1.90%	1.50%	1.50%	3.50%		4.50%	3.00%	-1.00%		6.50%	-2.00%	3.00%		4.00%	6.00%	5.00%		5.00%	6.00%	2.00%
wtd Mean																									
Mean					0.83	2.35%	3.25%	3.83%	4.33%		6.83%	7.08%	3.33%		8.02%	7.50%	6.08%		6.83%	7.83%	7.17%		7.25%	9.25%	4.67%
Median					0.80	2.25%	2.75%	3.00%	4.00%		6.75%	7.50%	3.00%		7.30%	8.75%	6.50%		7.25%	7.75%	7.25%		6.75%	9.25%	4.75%
Maximum					1.00	3.40%	5.50%	10.00%	6.50%		8.50%	10.50%	7.00%		11.00%	15.00%	8.00%		9.50%	10.00%	8.50%		10.50%	14.00%	6.50%

Value Line Investment Surveys
Water Industry
As of First Quarter 2024(1-1-2024)

Cost of Equity Dividend Growth Model

Dividend 2.35% mean Col 7

Growth	Past 10 yrs	Past 5 yrs	Est'd 16-18 to 22-24	Beta	
Revenues	3.25%	3.83%	4.33%		
Cash Flow	6.75%	7.08%	3.33%		
Earnings	8.02%	7.50%	6.08%		
Dividends	7.25%	7.83%	7.17%		
Book Value	6.75%	9.25%	4.67%	Input	Min-Max
Mean	6.40%	7.10%	5.12%	0.83	0.7-1

Growth 5.12% AUS Input

Cost of Equity Dividend Growth Model

Dividend	2.35%
Growth	5.12%
Cost of Equity	7.47%

Cost of Equity Capital Asset Pricing Model (CAPM)

Risk Free Rate			4.62%	Input	Long term Government Bonds Income Return SBBI (Mean)
Risk Premium					
Beta			0.83		
Risk Premia	7.17%	Input SBBI	6.87%	Input	$r_p=r_m-r_f$ per PA PUC
Size Premia				$ Millions	$ Millions
Micro	2.91%	Input SBBI		-	554.5
Small	1.24%	Input SBBI		554.5	3,010.8
Mid	0.66%	Input SBBI		3,010.8	14,820.1
Large	0.00%	Input SBBI		14,820.1	
Size Premia			0.00%	WADS Input	
Cost of Equity			10.35%		

Cost of Equity	
Dividend Growth Model	7.47%
Capital Asset Pricing Model (CAPM)	10.35%
Mean	8.91%
Issuance Cost PUFT 2008-2019	3.60%
Final Cost of Equity	9.24%

Pennsylvania PUC 9.65%
Bureau of Technical Utility Services
Report on the Quarterly Earnings
of Jurisdictional Utilities
31-Dec-24

Cost of Equity	9.65%	WADS Input Jurisdictional Exception
Growth	5.12%	Input from Growth Above
Inflation	3.03%	SBBI Last 5-years

Value Line Analysis

S:\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

1	2	3	4	5				
Value Line Investment Surveys **Water Industry** **As of First Quarter 2024(1-1-2024)**								
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Tax Rate			
					2019	2020	2021	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	1783	01/05/2024	23.2%	24.5%	24.0%	24.0%
American Water	NYSE	AWK	1784	01/05/2024	18.7%	21.0%	21.0%	24.0%
California Water	NYSE	CWT	1785	01/05/2024	3.3%	21.0%	21.0%	21.0%
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	0.0%	11.0%	14.0%	16.0%
Middlesex Water	NDQ	MSEX	1787	01/05/2024	7.1%	21.0%	21.0%	21.0%
SJW Corporation	NYSE	SJW	1788	01/05/2024	10.3%	21.0%	21.0%	21.0%
Minimum					0.00%	11.00%	14.00%	16.00%
wtd Mean								
Mean					10.43%	19.92%	20.33%	21.17%
Median					8.70%	21.00%	21.00%	21.00%
Maximum					23.20%	24.50%	24.00%	24.00%
	Historical		Current					
Embedded Tax Rate	10.43%	Mean 2019	19.92%	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 - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

Value Line Investment Surveys
Water Industry
As of First Quarter 2024(1-1-2024)

2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Company	Exchange	Ticker	Valueline No.	Valueline 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	Portion Market Equity	Capitalization	Total Market Capital
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(6) / (21)	Input Value Line	Input Value Line	(9) / (8)	Input Value Line	Input Value Line	Input Value Line	Input Value Line	(14) / (21)	Input Value Line	Input Value Line	Input Value Line	(18) / (21)	Input Value Line	(6)+(14)+(18)
					$s Million	%	$s Million	$s Million	%	%	%	%	$s Million	%	Shares Million	$s per Share	$s Million	%		$s Million
American States Water	NYSE	AWR	1783	01/05/2024	612.9	16.87%	575.5	44.0	7.65%	43.0%	46.5%	53.5%	0	0.00%	36.9805920	81.7	3,020.2	83.13%	Mid Cap	3,633.1
American Water	NYSE	AWK	1784	01/05/2024	12,190.0	32.24%	11,698.0	449.0	3.84%	54.0%	57.5%	42.5%	2	0.01%	194.7049970	131.6	25,615.4	67.75%	Large Cap	37,807.4
California Water	NYSE	CWT	1785	01/05/2024	1,069.6	26.17%	1,052.8	44.0	4.18%	44.0%	40.5%	59.5%	0	0.00%	57.7110000	52.3	3,017.7	73.83%	Mid Cap	4,087.3
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	6,806.4	40.15%	6,456.0	254.0	3.93%	52.0%	52.5%	47.5%	0	0.00%	273.1658170	37.1	10,145.4	59.85%	Large Cap	16,951.8
Middlesex Water	NDQ	MSEX	1787	01/05/2024	361.7	23.08%	354.3	7.5	2.12%	46.0%	41.5%	58.5%	2.4	0.15%	17.8060000	67.6	1,203.3	76.77%	Small Cap	1,567.4
SJW Corporation	NYSE	SJW	1788	01/05/2024	1,577.3	42.62%	1,533.8	50.0	3.26%	57.0%	52.5%	47.5%	0	0.00%	31.9330000	66.5	2,123.9	57.38%	Mid Cap	3,701.2
Total					22,617.9	33.39%	21,670.4	848.5	3.92%				4.4	0.01%			45,125.9	66.61%		67,748.2
Minimum						16.87%			2.12%	43.00%	40.50%	42.50%		0.00%				57.38%		
wtd Mean						33.39%			3.92%					0.01%				66.61%		
Mean						30.19%			4.16%	49.33%	48.50%	51.50%		0.03%				69.79%		
Median						29.21%			3.89%	49.00%	49.50%	50.50%		0.00%				70.79%		
Maximum						42.62%			7.65%	57.00%	57.50%	59.50%		0.15%				83.13%		

S:\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

Water Industry Capital Structure

Capital Structure	Market Proportion	Market Reference	Embedded Proportion	Embedded Reference
Debt	33.39%	wtd mean col 7	49.33%	mean col 11
Preferred	0.01%	wtd mean col 15	0.03%	mean col 15
Equity	66.61%	wtd mean col 19	51.50%	mean col 13
Total	100.01%		100.86%	
Use				
Debt	33%	AUS Input	49%	AUS Input Jurisdictional Execption
Equity	67%	AUS Input	51%	AUS Input Jurisdictional Execption
Total	100%		100%	

S:\water industry\PA American - East Coventry\East Coventry Wastewater System Valuation as of 2-24-2024 - Created 5-23-2024

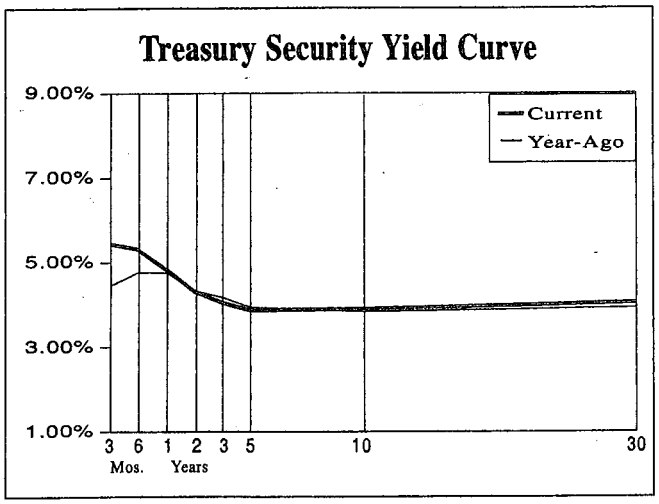
1	2	3	4	5	6	7	8	9	10
Value Line Investment Surveys									
Water Industry									
As of First Quarter 2024(1-1-2024)									
Company	Exchange	Ticker	Valueline No.	Valueline Issue	Total Return				
					1 year	3 Years	3 years annualized	5 Years	5 years annualized
Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Input Value Line	Calculation	Input Value Line	Calculation
							=((1+3 year Total Return)^(1/3))-1		=((1+5 year Total Return)^(1/5))-1
American States Water	NYSE	AWR	1783	01/05/2024	-17.6%	13.6%	4.3%	78.5%	12.3%
American Water	NYSE	AWK	1784	01/05/2024	-11.8%	10.0%	3.2%	49.1%	8.3%
California Water	NYSE	CWT	1785	01/05/2024	-20.8%	7.6%	2.5%	19.8%	3.7%
Essential Utilities, Inc.	NYSE	WTRG	1786	01/05/2024	-23.9%	-15.2%	-5.3%	16.8%	3.2%
Middlesex Water	NDQ	MSEX	1787	01/05/2024	-30.5%	-2.7%	-0.9%	32.2%	5.7%
SJW Corporation	NYSE	SJW	1788	01/05/2024	-10.3%	6.6%	2.2%	29.1%	5.2%
Total					-19.2%		1.0%		6.4%
Minimum					-30.50%		-5.35%		3.15%
wtd Mean									
Mean					-19.15%		0.99%		6.40%
Median					-19.20%		2.31%		5.49%
Maximum					-10.30%		4.34%		12.29%

Value Line Analysis

Selected Yields

TAXABLE	Recent (12/22/23)	3 Months Ago (9/25/23)	Year Ago (12/23/22)
Market Rates			
Discount Rate	5.50	5.50	4.50
Federal Funds	5.25-5.50	5.25-5.50	4.25-4.50
Prime Rate	8.50	8.50	7.50
30-day CP (A1/P1)	5.31	5.34	4.27
3-month LIBOR	5.61	5.65	4.73
U.S. Treasury Securities			
3-month	5.44	5.58	4.46
6-month	5.31	5.52	4.76
1-year	4.82	5.45	4.75
5-year	3.87	4.62	3.94
10-year	3.90	4.55	3.84
10-year (inflation-protected)	1.71	2.18	1.58
30-year	4.05	4.67	3.93
30-year Zero	4.03	4.61	3.81
Common Stocks			
VL Stocks (Median)	2.20	2.30	2.20
DJ Industrials (12-mo. est.)	2.00	2.20	2.20
VL Utilities	3.90	3.90	3.50

TAXABLE	Recent (12/22/23)	3 Months Ago (9/25/23)	Year Ago (12/23/22)
Corporate Bonds			
Financial (10-year) A	4.95	5.84	5.15
Industrial (25/30-year) A	4.95	5.70	5.07
Utility (25/30-year) A	5.21	5.98	5.29
Utility (25/30-year) Baa/BBB	5.47	6.23	5.54
S&P 500 High Yield Corp. Bond Index	6.23	7.28	6.99
Foreign Bonds (10-Year)			
Canada	3.21	4.03	3.18
Germany	1.98	2.80	2.51
Japan	0.61	0.75	0.46
United Kingdom	3.50	4.33	3.64
Mortgage-Backed Securities			
GNMA 5.5%	5.79	6.20	5.38
FHLMC 5.5% (Gold)	5.90	6.36	5.35
FNMA 5.5%	5.39	5.99	5.34
Preferred Stock			
Utility A	5.79	5.92	5.68
Financial BBB	5.99	6.06	6.31



TAX-EXEMPT			
Bond Buyer Indexes			
20-Bond Index (GOs)	3.37	3.90	3.66
25-Bond Index (Revs)	3.65	4.18	3.94
General Obligation Bonds (GOs)			
1-year AAA	2.58	3.55	2.75
1-year A	3.06	4.01	3.20
5-year AAA	2.20	3.19	2.49
5-year A	2.97	3.71	2.93
10-year AAA	2.27	3.26	2.57
10-year A	3.19	3.87	3.11
25/30-year AAA	3.29	4.16	3.41
25/30-year A	4.24	4.83	4.13
Revenue Bonds (Revs) (15 Years)			
Education AA	3.04	4.09	3.45
Electric AA	3.01	4.17	3.45
Water/Sewer AA	2.97	4.14	3.31
Hospital AA	3.30	4.21	3.75
Toll Road AA	3.15	4.19	3.56

Source: Bloomberg Finance L.P.

Federal Reserve Data

BANK RESERVES *(One-Month Period; in Billions, Not Seasonally Adjusted)*

	Recent Levels			Average Level Over the Last...		
	11/23	10/23	Change	3 Mos.	6 Mos.	12 Mos.
Total Reserves	3403.4	3276.5	126.9	3306.5	3265.3	3209.5
Borrowed Reserves	153.3	171.9	-18.6	182.5	227.9	189.0
Non-Borrowed Reserves	3250.1	3104.6	145.5	3124.0	3037.4	3020.5

MONEY SUPPLY *(One-Month Period; in Billions, Seasonally Adjusted)*

	Recent Levels			Growth Rates Over the Last...	
	11/23	10/23	Change	3 Mos.	6 Mos.
M1 (Currency+demand deposits+other liquid assets)	18045.8	18080.8	-35.0	-1.4%	-2.8%
M2 (M1+small time deposits+retail money markets)	20767.4	20725.6	41.8	-0.3%	-0.3%

Source: United States Federal Reserve Bank

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Kroll 2024 (year-end 2023) Equity Risk Premium Rates: Risk-Free, Equity Risk Premium, Size Premium

Risk-free Rates

Data Point	Data as of	Value
Spot 10-year Treasury Yield	05/16/2024	4.38%
Spot 20-year Treasury Yield	05/16/2024	4.62%
Spot 30-year Treasury Yield	05/16/2024	4.52%
Kroll Normalized Risk-free Rate	05/16/2024	3.50%

Equity Risk Premium

Data Point	Data as of	Value
Kroll Recommended	05/20/2024	5.50%
Supply-side Long-term (1926–2023)	12/31/2023	6.22%
Historical Long-term (1926–2023)	12/31/2023	7.17%

Equity Size Premium

CRSP Deciles Size Study - Data as of 12/31/2023

Companies Ranked by **Market Value of Common Equity**

Decile		Low End Breakpoint ($M)	High End Breakpoint ($M)	Size Premium
Mid Cap		3,011.22	14,820.05	0.66%
Low Cap		555.88	3,010.81	1.24%
Micro Cap		1.58	554.52	2.91%
Breakdown of CRSP Deciles 1 - 10				
	1	36,942.98	2,662,326.05	-0.06%
	2	14,910.72	36,391.11	0.46%
	3	7,493.61	14,820.05	0.61%
	4	4,622.26	7,461.28	0.64%
	5	3,011.22	4,621.79	0.95%
	6	1,864.29	3,010.81	1.21%
	7	1,050.08	1,862.49	1.39%
	8	555.88	1,046.04	1.14%
	9	213.04	554.52	1.99%
	10	1.58	212.64	4.70%
Breakdown of CRSP 10th Decile				
	10A	97.46	212.64	3.29%
	10w	153.80	212.64	2.38%
	10x	97.46	153.67	4.43%
	10B	1.58	97.40	7.64%
	10y	57.82	97.40	6.22%
	10z	1.58	57.45	10.73%

Source: Ibbotson SBBI 2018 Stock, Bonds, Bills, and Inflation Yearbook

	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 Capital Appreciation Returns Jan-Dec *	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Long-Term Government Bonds	Long-Term Government Bonds Capital Appreciation Returns Jan-Dec *	Long-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds Capital Appreciation Returns Jan-Dec *	Intermediate-Term Government Bonds	U.S. Treasury Bills	Inflation	Risk Premia
Year	Total Returns Jan-Dec *	Income Returns Jan-Dec *		Total Returns Jan-Dec *	Total Returns Jan-Dec *	Total Returns Jan-Dec *	Income Returns Jan-Dec *		Yields Jan-Dec *	Total Returns Jan-Dec *	Income Returns Jan-Dec *		Yields Jan-Dec *	Total Returns Jan-Dec *	Jan-Dec *	(A-1)-(A-7)
1926	0.1162	0.0541	0.0572	0.0028	0.0737	0.0777	0.0373	0.0391	0.0354	0.0538	0.0378	0.0151	0.0361	0.0327	-0.0149	0.0789
1927	0.3749	0.0571	0.3091	0.2210	0.0744	0.0893	0.0341	0.0540	0.0316	0.0452	0.0349	0.0096	0.0340	0.0312	-0.0208	0.3408
1928	0.4361	0.0481	0.3788	0.3969	0.0284	0.0010	0.0322	-0.0312	0.0340	0.0092	0.0364	-0.0273	0.0401	0.0356	-0.0097	0.4039
1929	-0.0842	0.0398	-0.1191	-0.5136	0.0327	0.0342	0.0347	-0.0020	0.0340	-0.0601	0.0407	0.0177	0.0362	0.0475	0.0020	-0.1189
1930	-0.2490	0.0457	-0.2848	-0.3815	0.0798	0.0466	0.0332	0.0128	0.0330	0.0672	0.0330	0.0333	0.0291	0.0241	-0.0603	-0.2822
1931	-0.4334	0.0535	-0.4707	-0.4975	-0.0185	-0.0531	0.0333	-0.0846	0.0407	-0.0232	0.0316	-0.0540	0.0412	0.0107	-0.0952	-0.4667
1932	-0.0819	0.0616	-0.1515	-0.0539	0.1082	0.1684	0.0369	0.1294	0.0315	0.0810	0.0363	0.0502	0.0304	0.0096	-0.1030	-0.1188
1933	0.5399	0.0639	0.4659	1.4287	0.1038	-0.0007	0.0312	-0.0314	0.0336	0.0183	0.0283	-0.0099	0.0325	0.0030	0.0051	0.5087
1934	-0.0144	0.0446	-0.0594	0.2422	0.1384	0.1003	0.0318	0.0676	0.0293	0.0900	0.0293	0.0597	0.0249	0.0016	0.0203	-0.0462
1935	0.4767	0.0495	0.4137	0.4019	0.0961	0.0498	0.0281	0.0214	0.0276	0.0701	0.0202	0.0494	0.0163	0.0017	0.0299	0.4486
1936	0.3392	0.0536	0.2792	0.6480	0.0674	0.0752	0.0277	0.0464	0.0255	0.0306	0.0144	0.0160	0.0129	0.0018	0.0121	0.3115
1937	-0.3503	0.0466	-0.3859	-0.5801	0.0275	0.0023	0.0266	-0.0248	0.0273	0.0156	0.0148	0.0005	0.0114	0.0031	0.0310	-0.3769
1938	0.3112	0.0483	0.2521	0.3280	0.0613	0.0553	0.0264	0.0283	0.0252	0.0623	0.0182	0.0437	0.0152	-0.0002	-0.0278	0.2848
1939	-0.0041	0.0469	-0.0545	0.0035	0.0397	0.0594	0.0240	0.0348	0.0226	0.0452	0.0131	0.0318	0.0098	0.0002	-0.0048	-0.0281
1940	-0.0978	0.0536	-0.1529	-0.0516	0.0339	0.0609	0.0223	0.0377	0.0194	0.0296	0.0090	0.0204	0.0057	0.0000	0.0096	-0.1201
1941	-0.1159	0.0671	-0.1786	-0.0900	0.0273	0.0093	0.0194	-0.0101	0.0204	0.0050	0.0067	-0.0017	0.0082	0.0006	0.0972	-0.1353
1942	0.0234	0.0679	0.1243	0.4451	0.0260	0.0322	0.0246	0.0074	0.0246	0.0194	0.0076	0.0117	0.0072	0.0027	0.0929	-0.0012
1943	0.2590	0.0624	0.1945	0.8837	0.0283	0.0208	0.0244	-0.0037	0.0248	0.0281	0.0156	0.0123	0.0145	0.0035	0.0316	0.2346
1944	0.1975	0.0548	0.1380	0.5372	0.0473	0.0281	0.0246	0.0032	0.0246	0.0180	0.0144	0.0035	0.0140	0.0033	0.0211	0.1729
1945	0.3611	0.0497	0.3072	0.7361	0.0408	0.1073	0.0234	0.0827	0.0199	0.0222	0.0119	0.0102	0.0103	0.0033	0.0225	0.3377
1946	-0.0807	0.0409	-0.1187	-0.1163	0.0172	-0.0010	0.0204	-0.0215	0.0212	0.0100	0.0108	-0.0008	0.0112	0.0035	0.1816	-0.1011
1947	0.0571	0.0549	0.0000	0.0092	-0.0234	-0.0262	0.0213	-0.0470	0.0243	0.0091	0.0121	-0.0030	0.0134	0.0050	0.0901	0.0358
1948	0.0550	0.0608	-0.0065	-0.0211	0.0414	0.0340	0.0240	0.0096	0.0237	0.0185	0.0156	0.0027	0.0151	0.0081	0.0271	0.0310
1949	0.1879	0.0750	0.1026	0.1975	0.0331	0.0645	0.0225	0.0415	0.0209	0.0232	0.0136	0.0095	0.0123	0.0110	-0.0180	0.1654
1950	0.3171	0.0877	0.2178	0.3875	0.0212	0.0006	0.0212	-0.0206	0.0224	0.0070	0.0139	-0.0069	0.0162	0.0120	0.0579	0.2959
1951	0.2402	0.0691	0.1646	0.0780	-0.0269	-0.0393	0.0238	-0.0627	0.0269	0.0036	0.0198	-0.0163	0.0217	0.0149	0.0587	0.2164
1952	0.1837	0.0593	0.1178	0.0303	0.0352	0.0116	0.0266	-0.0148	0.0279	0.0163	0.0219	-0.0057	0.0235	0.0166	0.0088	0.1571
1953	-0.0099	0.0546	-0.0662	-0.0649	0.0341	0.0364	0.0284	0.0067	0.0274	0.0323	0.0255	0.0061	0.0218	0.0182	0.0062	-0.0383
1954	0.5262	0.0621	0.4502	0.6058	0.0539	0.0719	0.0279	0.0435	0.0272	0.0268	0.0160	0.0108	0.0172	0.0086	-0.0050	0.4983
1955	0.3156	0.0456	0.2640	0.2044	0.0048	-0.0129	0.0275	-0.0407	0.0295	-0.0065	0.0245	-0.0310	0.0280	0.0157	0.0037	0.2881
1956	0.0656	0.0383	0.0262	0.0428	-0.0681	-0.0559	0.0299	-0.0846	0.0345	-0.0042	0.0305	-0.0345	0.0363	0.0246	0.0286	0.0357
1957	-0.1078	0.0384	-0.1431	-0.1457	0.0871	0.0746	0.0344	0.0382	0.0323	0.0784	0.0359	0.0405	0.0284	0.0314	0.0302	-0.1422
1958	0.4336	0.0438	0.3806	0.6489	-0.0222	-0.0609	0.0327	-0.0923	0.0382	-0.0129	0.0293	-0.0417	0.0381	0.0154	0.0176	0.4009
1959	0.1196	0.0331	0.0848	0.1640	-0.0097	-0.0226	0.0401	-0.0620	0.0447	-0.0039	0.0418	-0.0456	0.0498	0.0295	0.0150	0.0795
1960	0.0047	0.0326	-0.0297	-0.0329	0.0907	0.1378	0.0426	0.0929	0.0380	0.1176	0.0415	0.0742	0.0331	0.0266	0.0148	-0.0379
1961	0.2689	0.0348	0.2313	0.3209	0.0482	0.0097	0.0383	-0.0286	0.0415	0.0185	0.0354	-0.0172	0.0384	0.0213	0.0067	0.2306
1962	-0.0873	0.0298	-0.1110	-0.1190	0.0795	0.0689	0.0400	0.0278	0.0395	0.0556	0.0373	0.0173	0.0350	0.0273	0.0122	-0.1273
1963	0.2280	0.0361	0.1889	0.2357	0.0219	0.0121	0.0389	-0.0270	0.0417	0.0164	0.0371	-0.0210	0.0404	0.0312	0.0165	0.1891
1964	0.1648	0.0333	0.1297	0.2352	0.0477	0.0351	0.0415	-0.0072	0.0423	0.0404	0.0400	-0.0003	0.0403	0.0354	0.0119	0.1233
1965	0.1245	0.0321	0.0906	0.4175	-0.0046	0.0071	0.0419	-0.0345	0.0450	0.0120	0.0415	-0.0310	0.0490	0.0393	0.0192	0.0826
1966	-0.1006	0.0311	-0.1309	-0.0701	0.0020	0.0365	0.0449	-0.0106	0.0455	0.0469	0.0493	-0.0041	0.0479	0.0476	0.0335	-0.1455
1967	0.2398	0.0364	0.2090	0.8357	-0.0495	-0.0918	0.0459	-0.1355	0.0556	0.0101	0.0488	-0.0385	0.0577	0.0421	0.0304	0.1939
1968	0.1106	0.0318	0.0766	0.3597	0.0257	-0.0026	0.0550	-0.0551	0.0598	0.0454	0.0549	-0.0099	0.0596	0.0521	0.0472	0.0556

Source: Ibbotson SBBI 2018 Stock, Bonds, Bills, and Inflation Yearbook

	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 Capital Appreciation Returns	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Long-Term Government Bonds	Long-Term Government Bonds Capital Appreciation Returns	Long-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds	Intermediate-Term Government Bonds Capital Appreciation Returns	Intermediate-Term Government Bonds	U.S. Treasury Bills	Inflation	Risk Premia
Year	Total Returns Jan-Dec *	Income Returns Jan-Dec *	Total Returns Jan-Dec *	Total Returns Jan-Dec *	Total Returns Jan-Dec *	Total Returns Jan-Dec *	Income Returns Jan-Dec *	Yields Jan-Dec *	Yields Jan-Dec *	Total Returns Jan-Dec *	Income Returns Jan-Dec *	Yields Jan-Dec *	Yields Jan-Dec *	Total Returns 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	0.0336	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	-0.0770	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	0.0735	0.0012	0.0719	0.0580	0.0701	0.2921
1976	0.2384	0.0438	0.1915	0.5738	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	0.2538	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	0.0349	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	0.1245	0.1124	0.1240	0.2245
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	0.2251	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	0.0556	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	0.1210	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	0.0370	0.0553	-0.0189	0.0575	0.0762	0.0427	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	0.0240	0.0285	-0.0048	0.0297	0.0102	0.0188	0.2390
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	0.1580	0.0201	0.1362	0.1617	0.0324	0.0119	0.0468	-0.0364	0.0491	0.0314	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	0.0469	0.0450	0.1005	0.0444	0.0533	0.0328	0.0466	0.0408	0.0063
2008	-0.3700	0.0192	-0.3849	-0.3672	0.0878	0.2587	0.0445	0.2050	0.0303	0.1311	0.0296	0.0992	0.0126	0.0160	0.0009	-0.4145
2009	0.2646	0.0248	0.2345	0.2809	0.0302	-0.1490	0.0347	-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

Source: Ibbotson SBBI 2018 Stock, Bonds, Bills, and Inflation Yearbook

	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
Year	Large Company Stocks Total Returns Jan-Dec *	Large Company Stocks Income Returns Jan-Dec *	Large Company Stocks Capital Appreciation Returns Jan-Dec *	Small Company Stocks Total Returns Jan-Dec *	Long-Term Corporate Bonds Total Returns Jan-Dec *	Long-Term Government Bonds Total Returns Jan-Dec *	Long-Term Government Bonds Income Returns Jan-Dec *	Long-Term Government Bonds Capital Appreciation Returns Jan-Dec *	Long-Term Government Bonds Yields Jan-Dec *	Intermediate-Term Government Bonds Total Returns Jan-Dec *	Intermediate-Term Government Bonds Income Returns Jan-Dec *	Intermediate-Term Government Bonds Capital Appreciation Returns Jan-Dec *	Intermediate-Term Government Bonds Yields Jan-Dec *	U.S. Treasury Bills Total Returns Jan-Dec *	Inflation Jan-Dec *	Risk Premia (A-1)-(A-7)
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
2022	-0.1811	0.0140	-0.1944	-0.1246	-0.2618	-0.2608	0.0261	-0.2647	0.0424	-0.0936	0.0267	-0.1197	0.0413	0.0143	0.0684	-0.2072
2023															0.0410	
Average	**0.1182**	**0.0386**	**0.0793**	**0.1633**	**0.0606**	**0.0564**	**0.0485**	**0.0060**	**0.0491**	**0.0492**	**0.0427**	**0.0057**	**0.0425**	**0.0328**	**0.0303**	**0.0698**
Median	**0.1369**	**0.0369**	**0.1079**	**0.1824**	**0.0477**	**0.0365**	**0.0400**	**0.0032**	**0.0415**	**0.0323**	**0.0364**	**0.0029**	**0.0362**	**0.0273**	**0.0270**	**0.0799**
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**	**-0.2618**	**-0.2608**	**0.0153**	**-0.2647**	**0.0137**	**-0.0936**	**0.0058**	**-0.1197**	**0.0044**	**-0.0002**	**-0.1030**	**-0.4667**
Last 5 year (60 months)																
Average	**0.1122**	**0.0183**	**0.0927**	**0.0733**	**0.0036**	**-0.0065**	**0.0225**	**-0.0250**	**0.0252**	**0.0079**	**0.0178**	**-0.0132**	**0.0202**	**0.0117**	**0.0389**	**0.0897**
Median	**0.1840**	**0.0180**	**0.1626**	**0.0659**	**-0.0266**	**-0.0057**	**0.0255**	**-0.0350**	**0.0225**	**0.0116**	**0.0208**	**-0.0155**	**0.0170**	**0.0143**	**0.0229**	**0.1687**
High	**0.3149**	**0.0234**	**0.2888**	**0.3348**	**0.1995**	**0.1665**	**0.0282**	**0.1512**	**0.0424**	**0.0826**	**0.0267**	**0.0658**	**0.0413**	**0.0214**	**0.0704**	**0.2894**
Low	**-0.1811**	**0.0140**	**-0.1944**	**-0.1246**	**-0.2618**	**-0.2608**	**0.0153**	**-0.2647**	**0.0137**	**-0.0936**	**0.0066**	**-0.1197**	**0.0044**	**0.0004**	**0.0136**	**-0.2072**

* Compound Annual Return

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held May 9, 2024

Docket Number: M-2024-3048688

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

December 31, 2023

Stephen M. DeFrank, Chairman
Kimberly Barrow, Vice Chair
Ralph V. Yanora, Statement
Kathryn L. Zerfuss
John F. Coleman, Jr.

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Historic barometer group DCF and CAPM average ROEs, including a linear trend line graph.

Attachment H – Water Barometer Group Calculation of a Current and 52 Week Average Dividend Yield..... 29
Water barometer 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.

Attachment H – Development of a Representative Dividend Growth Rate..... 30
Multiple sources of the water barometer companies projected 5-year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

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.[1] 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 December 31, 2023.[2] 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 Per Commission regulations at 52 Pa. Code § 71.3(a)(1), the major electric utilities are specifically identified by name rather than utilizing the $10,000,000 revenue threshold utilized by gas and water utilities.

[2] Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, Peoples Natural Gas Company LLC, Columbia Gas of Pennsylvania, Inc., and Duquesne Light Company have rate filing at Docket No. R-2023-3043189, R-2023-3043190, R-2023-3044549, R-2024-3046519, and R-2024-3046523, respectively, and have 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

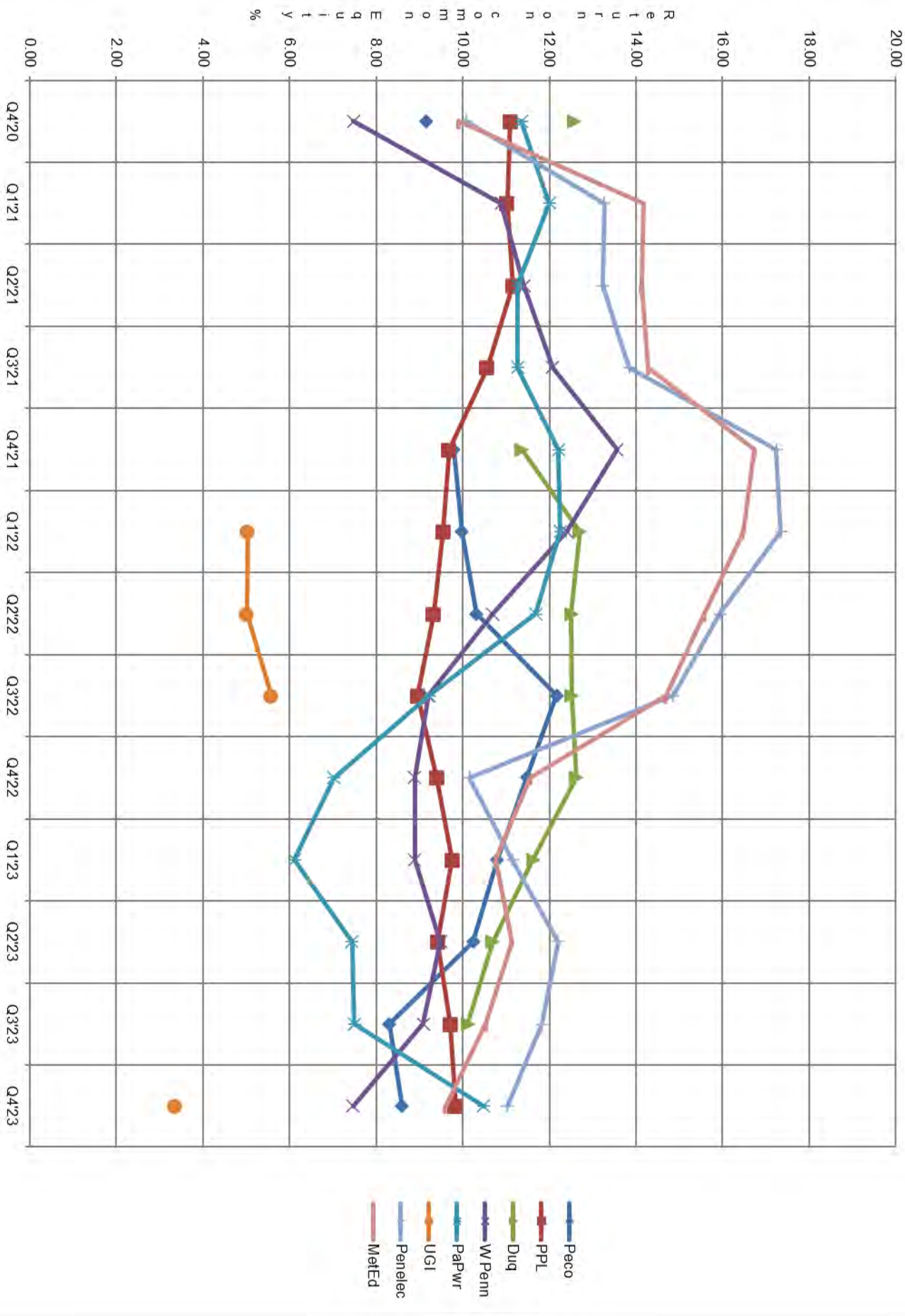
ADJUSTED

2. Based on company proposed pro forma and ratemaking adjustments

ELECTRIC UTILITIES
EQUITY RETURNS BY QUARTER

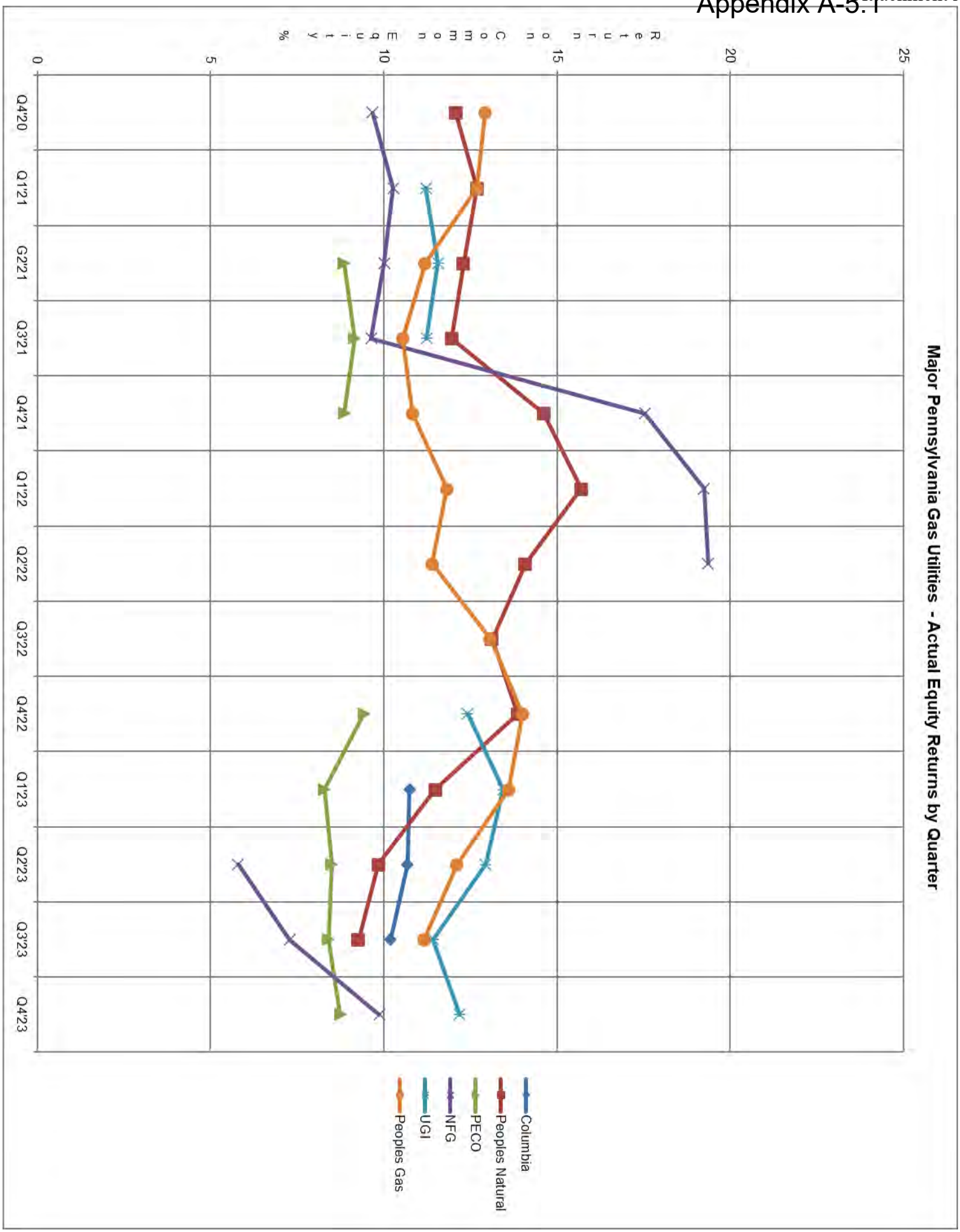
QTR END		Peco		PPL		Duq		W Penn		PaPwr		UGI		Penelec		MetEd	
		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
2018	1			12.53	11.36			10.35	9.08	9.03	8.08			11.84	9.93	12.77	11.38
	2			11.05	9.49			9.92	8.52	8.79	7.57			11.56	9.39	11.90	10.26
	3			11.19	9.83			11.41	6.74	10.30	5.80			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
	4	11.48	6.59	9.41	9.18	12.62	9.54	8.89	4.19	7.03	3.44			10.16	5.07	11.56	7.55
2023	1	10.80	6.47	9.76	9.36	11.63	9.53	8.89	5.32	6.11	4.01			11.15	6.88	10.77	8.25
	2	10.24	6.19	9.43	8.67	10.69	9.39	9.49	6.03	7.45	5.58			12.20	7.90	11.14	8.81
	3	8.30	5.48	9.72	8.12	10.12	8.89	9.09	5.96	7.50	5.76			11.84	7.79	10.54	8.60
	4	8.60	5.19	9.84	8.49			7.47	6.02	10.49	7.09	3.36	4.48	11.03	8.17	9.61	8.66

Appendix A-5.1



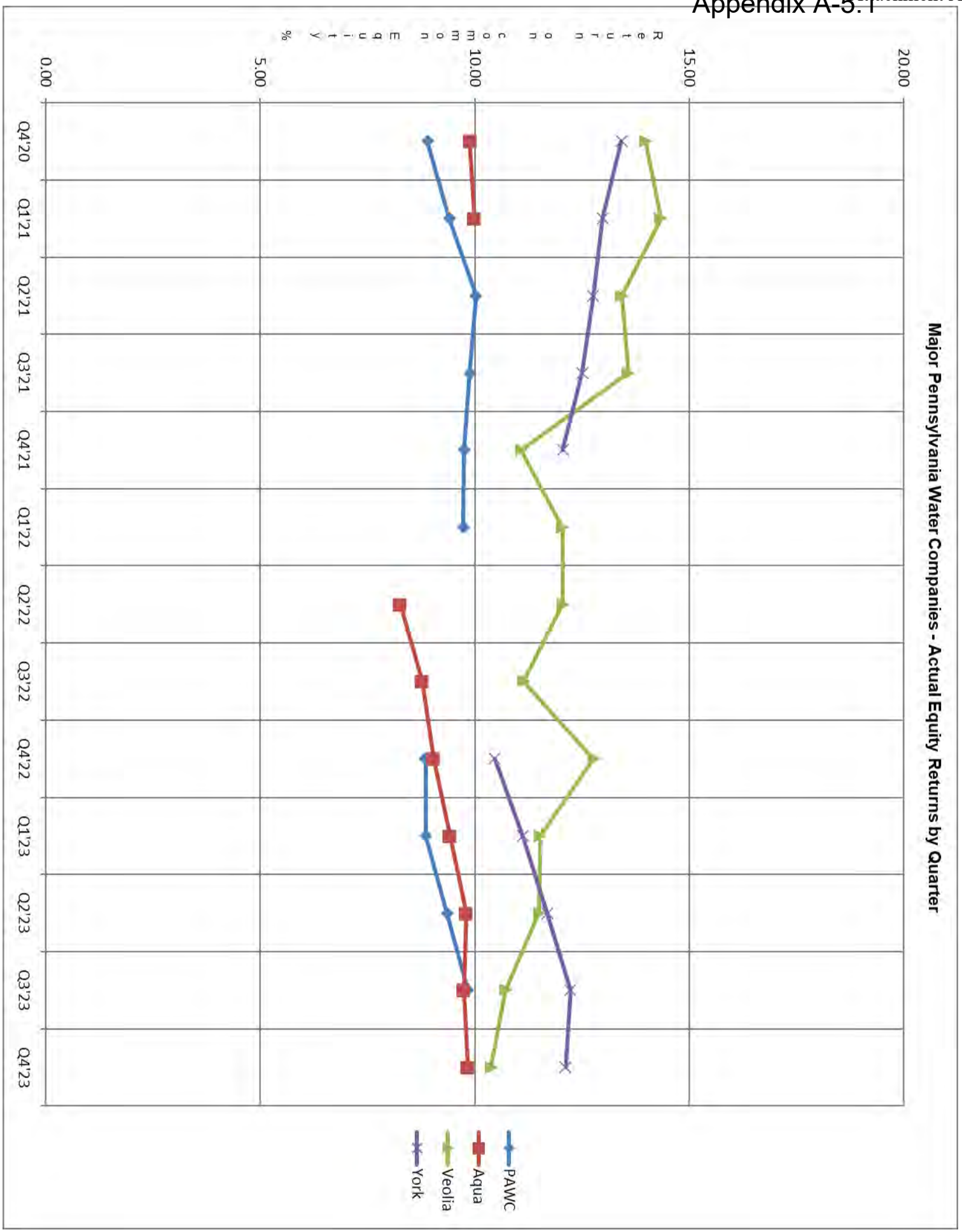
GAS UTILITIES
EQUITY RETURNS BY QUARTER

QTR		Columbia		Peoples Natural		PECO		NFG		UGI		Peoples Gas	
END		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
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
	4			13.87	10.56	9.43	5.93			12.42	7.62	14.01	14.19
2023	1	10.75	10.30	11.50	9.02	8.29	6.05			13.45	8.33	13.61	12.68
	2	10.68	10.33	9.85	9.50	8.50	6.20	5.80	9.98	12.94	8.97	12.12	13.84
	3	10.19	10.72	9.28	8.17	8.41	6.01	7.29	9.58	11.43	8.27	11.17	14.22
	4					8.75	6.82	9.87	10.80	12.19	7.44		


Major Pennsylvania Gas Utilities - Actual Equity Returns by Quarter
Return on Common Equity %
0
5
10
15
20
25
Q4'20
Q1'21
Q2'21
Q3'21
Q4'21
Q1'22
Q2'22
Q3'22
Q4'22
Q1'23
Q2'23
Q3'23
Q4'23
Columbia
Peoples Natural
PECO
NFG
UGI
Peoples Gas

WATER UTILITIES
EQUITY RETURNS BY QUARTER

QTR		PAWC		Aqua		Veolia		York	
END		ACT	ADJ	ACT	ADJ	ACT	ADJ	ACT	ADJ
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		
	4	8.85	8.97	9.04	8.88	12.77	9.49	10.47	10.57
2023	1	8.86	8.90	9.42	8.48	11.53	8.98	11.12	11.12
	2	9.35	8.89	9.80	8.52	11.50	8.91	11.69	11.69
	3	9.84	8.93	9.74	8.39	10.72	8.42	12.23	12.23
	4			9.84	8.35	10.38	7.64	12.12	8.16


Major Pennsylvania Water Companies - Actual Equity Returns by Quarter
Return on Equity %
20.00
15.00
10.00
5.00
0.00
Q4'20
Q1'21
Q2'21
Q3'21
Q4'21
Q1'22
Q2'22
Q3'22
Q4'22
Q1'23
Q2'23
Q3'23
Q4'23
PAWC
Aqua
Veolia
York

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 December 31, 2023

COMPANY NAME	OVERALL RETURN ACTUAL	OVERALL RETURN ADJ	EQUITY RETURN ACTUAL	EQUITY RETURN ADJ	ROE AUTH	YEAR AUTH
ELECTRIC						
$10,000,000 Revenues						
PECO Energy - Electric Operations	6.55	4.61	8.60	5.19	Settled	2021
PPL Electric Utilities Corp.	7.62	6.81	9.84	8.49	Settled	2015
Duquesne Light Company*					Settled	2021
West Penn Power Company	6.08	5.27	7.47	6.02	Settled	2017
Pennsylvania Power Company	7.59	5.70	10.49	7.09	Settled	2017
UGI Utilities, Inc. - Electric Division	4.00	4.69	3.36	4.48	Settled	2023
Pennsylvania Electric Company	7.59	6.18	11.03	8.17	Settled	2017
Metropolitan Edison Company	7.26	6.69	9.61	8.66	Settled	2017
Over $1,000,000						
Revenues						
Pike County Light & Power Co.	6.99	6.99	7.62	7.62	Settled	2021
Citizens Electric Company	5.87	7.57	6.17	8.09	Settled	2022
Wellsboro Electric Company	7.93	7.93	18.25	18.25	9.31	2020
GAS						
$10,000,000 Revenues						
Columbia Gas of PA, Inc.*					Settled	2022
Peoples Natural Gas Company LLC*					Settled	2019
PECO Energy - Gas Operations	6.63	5.49	8.75	6.82	Settled	2022
National Fuel Gas Distribution Co.	7.65	8.31	9.87	10.80	Settled	2023
UGI Utilities, Inc. – Gas Division	8.46	6.18	12.19	7.44	Settled	2022
Peoples Gas Company, LLC*					Settled	2013
$1,000,000 to $10,000,000						
Revenues						
Pike County Light & Power Co.	2.53	2.53	-0.80	-0.80	Settled	2021
Leatherstocking Gas Company	1.35	1.35	-4.79	-4.79	Settled	2023
North East Heat and Light Company	5.45	5.45	5.58	5.58	11.00	2008
Valley Energy	2.05	2.10	0.57	0.62	Settled	2022
WATER						
$10,000,000 Revenues						
PA American Water Company*					Settled	2022
Aqua Pennsylvania	7.11	6.29	9.84	8.35	10.00	2022
York Water Company	9.09	6.59	12.12	8.16	Settled	2023
Veolia Water Pennsylvania, Inc.	7.51	6.09	10.38	7.64	Settled	2018
$1,000,000 to $10,000,000						
Revenues						
Newtown Artesian Water Co.	2.99	1.52	1.72	-0.88	Settled	2019
Columbia Water Company	3.78	3.78	3.45	3.45	9.75	2024
York Water Company – Wastewater	2.57	1.53	2.24	0.48	Settled	2023
Community Utilities– Water	-0.10	-0.10	-5.96	-5.96	Settled	2022
Community Utilities– Wastewater	2.37	2.37	-0.69	-0.69	Settled	2022

* Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, Peoples Natural Gas Company LLC, Columbia Gas of Pennsylvania, Inc., and Duquesne Light Company have rate filing at Docket No. R-2023-3043189, R-2023-3043190, R-2023-3044549, R-2024-3046519, and R-2024-3046523, respectively, and have filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

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			
UGI Utilities, Inc. – Electric	R-2022-3037368	Settled	2023
Duquesne Light Company	R-2021-3024750	Settled	2021
PECO Energy – Electric Operations	R-2021-3024601	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.			**8.93-11.07**

GAS			
Recent PA PUC Allowed			
National Fuel Gas Distribution Corp.	R-2022-3035730	Settled	2023
Columbia Gas of Pennsylvania, Inc.	R-2022-3031211	Settled	2022
PECO Energy – Gas Operations	R-2022-3031113	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.			**8.43-10.90**

WATER			
Recent PA PUC Allowed			
Columbia Water	R-2023-3040258	9.75	2024
PA American Water	R-2022-3031672	Settled	2022
York Water	R-2022-3031340	Settled	2023
Aqua Pennsylvania	R-2021-3027385	10.00	2022
Veolia Water f/k/a Suez Water	R-2018-3000834	Settled	2018
Current Market Indicated ROE as calculated by the Bureau of Technical Utility Services.			**7.29-9.74**

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	5.19	9.80
PPL Electric Utilities Corp.	8.49	9.80
Duquesne Light Company*		9.80
West Penn Power Company	6.02	9.80
Pennsylvania Power Company	7.09	9.80
Pennsylvania Electric Company	8.17	9.80
Metropolitan Edison Company	8.66	9.80
UGI Utilities, Inc.- Electric Division	4.48	9.80
Pike County Light & Power Co.	7.62	9.80
GAS		
Columbia Gas of PA, Inc.*		10.15
Peoples Natural Gas Company LLC*		10.15
PECO Energy – Gas Operations	6.82	10.15
Peoples Gas Company, LLC*		10.15
UGI Utilities, Inc. – Gas Division	7.44	10.15
Pike County Light & Power Co.	-0.80	10.15
National Fuel Gas Distribution Corp	10.80	10.15
WATER		
PA American Water Company*		9.65
PA American – Wastewater*		9.65
AQUA Pennsylvania[5]	8.35	10.00
AQUA Pennsylvania – Wastewater[6]	8.35	10.00
York Water Company	8.16	9.65
Veolia Water Pennsylvania, Inc.	7.64	9.65
Columbia Water Company	3.45	9.75
Newtown Artesian Water	-0.88	9.65

* Pennsylvania-American Water Company, Pennsylvania-American Water Company Wastewater Division, Peoples Natural Gas Company LLC, Columbia Gas of Pennsylvania, Inc., and Duquesne Light Company have rate filing at Docket No. R-2023-3043189, R-2023-3043190, R-2023-3044549, R-2024-3046519, and R-2024-3046523, respectively, and have 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
	=	$D_0 + ½g$
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.

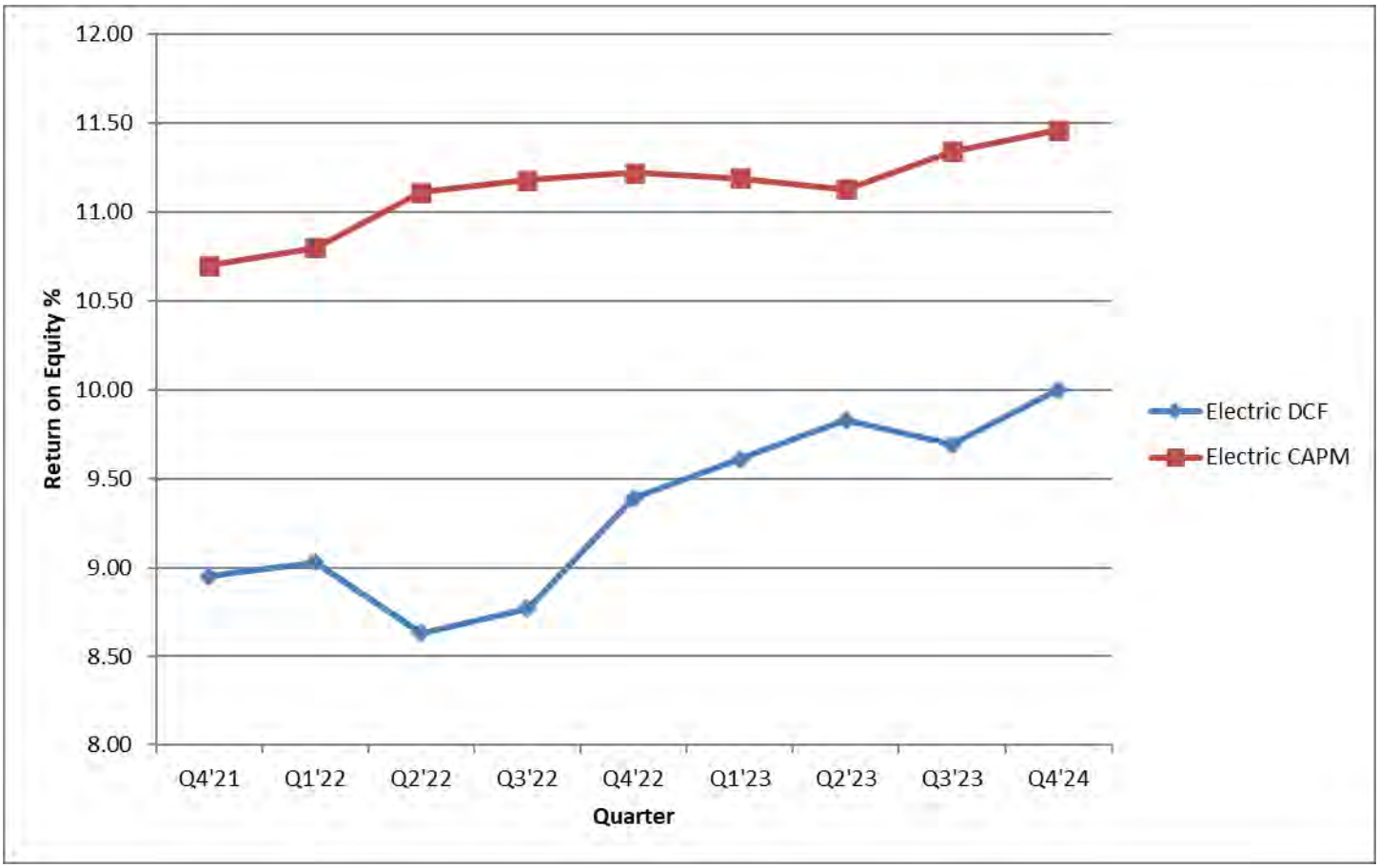
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity[1]	
April 12, 2024	
Electric Company Barometer Group	
	Cost Rates
	%
(1) Current DCF:	10.10
(2) 52-Week Average DCF:	9.90
(3) Overall DCF ((1) + (2)) / 2 :	10.00
(4) Market Indicated Common Equity Cost Rate Range:	8.93-11.07
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness:	11.46
(6) Recent Commission Approved ROEs[3]:	*
*None within the last two years	
(7) Distribution System Improvement Charge (DSIC) Return[4]:	**9.80%**
[1] As calculated by the Bureau of Technical Utility Services	
[2] Standard Deviation of 56 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
Q4'21	8.95	10.70
Q1'22	9.03	10.80
Q2'22	8.63	11.11
Q3'22	8.77	11.18
Q4'22	9.39	11.22
Q1'23	9.61	11.19
Q2'23	9.83	11.13
Q3'23	9.69	11.34
Q4'24	10.00	11.46

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 Market Price (Po) 4/12/2024 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	DCF (%)
Allete, Inc.	58.33	2.82	2.87	4.92	11.97
Alliant Energy Corp	48.00	1.92	1.98	4.12	10.50
Ameren Corp	71.76	2.68	2.77	3.86	9.79
American Electric Power	82.10	3.52	3.62	4.41	10.08
AVANGRID, Inc.	35.75	1.76	1.76	4.92	8.06
Avista Corp	34.00	1.90	1.94	5.71	11.81
CMS Energy Corp	57.66	2.06	2.10	3.64	10.48
Consolidated Edison	88.63	3.32	3.38	3.81	8.36
Dominion Energy	48.91	2.67	2.69	5.50	10.20
DTE Energy Company	106.25	4.08	4.14	3.90	9.10
Duke Energy Company	94.90	4.10	4.14	4.36	10.42
Edison International	68.63	3.12	3.21	4.67	11.32
Entergy Corp.	102.91	4.52	4.60	4.47	9.24
Evergy Inc	50.95	2.57	2.66	5.22	10.22
Eversource Energy	58.79	2.86	2.94	5.00	9.32
Exelon Corporation	36.48	1.52	1.52	4.17	9.12
FirstEnergy Corp	37.41	1.70	1.74	4.65	10.05
IDACORP, Inc..	90.22	3.32	3.43	3.80	8.00
NextEra Energy, Inc.	63.08	2.06	2.15	3.41	11.59
NorthWestern Corp	48.90	2.60	2.63	5.37	9.62
OGE Energy Corp	32.92	1.67	1.70	5.15	10.90
Otter Tail Corp	83.01	1.87	1.94	2.33	9.08
PPL Corporation	26.63	1.03	1.03	3.86	10.69
Pinnacle West Capital Corp	72.24	3.52	3.55	4.91	11.24
Portland General Electric Co.	40.56	1.90	1.95	4.81	10.81
Public Service Enterprise Group	65.87	2.40	2.46	3.73	8.88
Southern Company	68.73	2.80	2.85	4.15	10.08
Xcel Energy Inc.	53.17	2.19	2.25	4.23	10.71
Group Average	61.67	2.59	2.64	4.40	10.06
Group Average G				5.70	
DCF				**10.10**	

Electric Company Barometer Group 52-week Average Dividend Yield Calculation						
	High	Low	Average (Pa)	Latest Indicated Dividend (Do)	Average Dividend Yield (Do/Pa)	DCF
	($)	($)	($)	($)	(%)	(%)
Allete, Inc.	65.10	49.29	57.20	2.82	4.93	11.98
Alliant Energy Corp	56.26	45.15	50.71	1.92	3.79	10.17
Ameren Corp	91.18	67.03	79.11	2.68	3.39	9.32
American Electric Power	94.73	69.38	82.06	3.52	4.29	9.96
AVANGRID, Inc.	41.22	27.46	34.34	1.76	5.13	8.26
Avista Corp	44.83	30.53	37.68	1.90	5.04	11.14
CMS Energy Corp	63.76	49.87	56.82	2.06	3.63	10.46
Consolidated Edison	100.92	80.46	90.69	3.32	3.66	8.21
Dominion Energy	58.69	39.18	48.94	2.67	5.46	10.16
DTE Energy Company	116.73	90.14	103.44	4.08	3.94	9.14
Duke Energy Company	100.39	83.06	91.73	4.10	4.47	10.52
Edison International	74.92	58.82	66.87	3.12	4.67	11.32
Entergy Corp.	109.85	87.10	98.48	4.52	4.59	9.36
Evergy Inc	63.84	46.92	55.38	2.57	4.64	9.64
Eversource Energy	79.92	52.03	65.98	2.86	4.33	8.65
Exelon Corporation	43.71	33.35	38.53	1.52	3.94	8.89
FirstEnergy Corp	41.17	32.18	36.68	1.70	4.64	10.04
IDACORP, Inc..	112.96	86.43	99.70	3.32	3.33	7.53
NextEra Energy, Inc.	79.78	47.15	63.47	2.06	3.25	11.43
NorthWestern Corp	60.56	45.97	53.27	2.60	4.88	9.13
OGE Energy Corp	38.26	31.25	34.76	1.67	4.81	10.56
Otter Tail Corp	99.49	68.96	84.23	1.87	2.22	8.97
PPL Corporation	29.04	22.20	25.62	1.03	4.02	10.85
Pinnacle West Capital Corp	86.03	65.20	75.62	3.52	4.66	10.99
Portland General Electric Co.	51.58	38.01	44.80	1.90	4.24	10.24
Public Service Enterprise Group	67.51	53.71	60.61	2.40	3.96	9.11
Southern Company	75.80	61.56	68.68	2.80	4.08	10.01
Xcel Energy Inc.	71.32	46.79	59.06	2.19	3.71	10.19
Group Average	72.13	53.90	63.01	2.59	4.20	9.87
Group Average G					5.70	
DCF					**9.90**	
		Average of Current and 52-Week			**10.00**	

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				
	Value Line DPS (%)	Value Line EPS (%)	Zack's EPS (%)	Yahoo EPS (%)	Average Earnings Growth (%)	Growth Estimate (%)
Allete, Inc.	3.50	6.00	NA	8.10	7.05	7.05
Alliant Energy Corp	6.00	6.50	6.10	6.55	6.38	6.38
Ameren Corp	6.50	6.50	6.50	4.80	5.93	5.93
American Electric Power	5.50	6.50	4.80	5.72	5.67	5.67
AVANGRID, Inc.	0.00	3.00	6.00	0.40	3.13	3.13
Avista Corp	4.50	6.00	NA	6.20	6.10	6.10
CMS Energy Corp	4.00	5.00	7.70	7.80	6.83	6.83
Consolidated Edison	3.50	6.00	2.00	5.66	4.55	4.55
Dominion Energy	1.50	0.50	8.90	19.50	9.63	4.70
DTE Energy Company	3.00	4.50	6.00	5.10	5.20	5.20
Duke Energy Company	2.00	5.00	6.30	6.86	6.05	6.05
Edison International	5.50	6.00	NA	7.30	6.65	6.65
Entergy Corp.	3.50	0.50	7.00	6.80	4.77	4.77
Evergy Inc	7.00	7.50	5.00	2.50	5.00	5.00
Eversource Energy	5.50	5.50	4.20	3.25	4.32	4.32
Exelon Corporation	NA	NA	5.70	4.20	4.95	4.95
FirstEnergy Corp	4.50	4.50	NA	6.30	5.40	5.40
IDACORP, Inc..	6.50	4.00	NA	4.40	4.20	4.20
NextEra Energy, Inc.	9.00	8.50	8.20	7.84	8.18	8.18
NorthWestern Corp	2.00	4.00	NA	4.50	4.25	4.25
OGE Energy Corp	3.00	6.50	5.00	-12.34	-0.28	5.75
Otter Tail Corp	7.00	4.50	NA	9.00	6.75	6.75
PPL Corporation	-0.50	7.50	6.50	6.50	6.83	6.83
Pinnacle West Capital Corp	1.50	4.50	7.60	6.90	6.33	6.33
Portland General Electric Co.	5.50	6.00	NA	12.50	9.25	6.00
Public Service Enterprise Group	5.00	4.00	6.20	5.25	5.15	5.15
Southern Company	3.50	6.50	4.00	7.30	5.93	5.93
Xcel Energy Inc.	5.50	7.00	6.00	6.43	6.48	6.48
Group Average	4.22	5.28	5.99	5.90	5.74	5.66
USE						**5.70**

Sources: Value Line Investment Survey, April 15, 2024
Zacks, April 15, 2024 (www.zacks.com)
Yahoo!, April 15, 2024 (http://finance.yahoo.com/)
* NA signifies that a forecast was not available

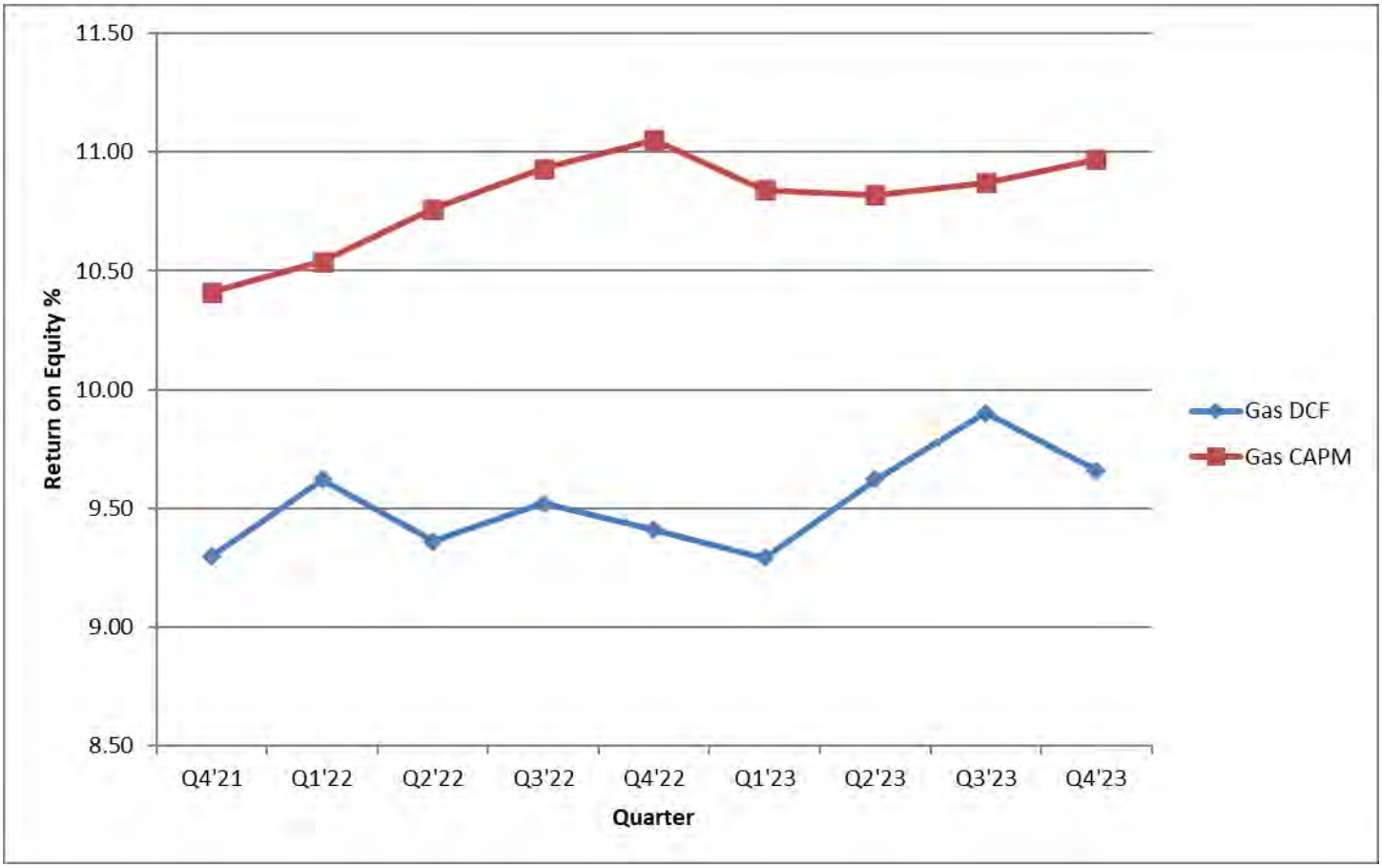
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity[1]	
April 12, 2024	
Gas Distribution Company Barometer Group	
	Cost Rates
	%
(1) Current DCF:	9.79
(2) 52-Week Average DCF:	9.53
(3) Overall DCF ((1) + (2)) / 2 :	9.66
(4) Market Indicated Common Equity Cost Rate Range:	8.43-10.90
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness:	10.97
(6) Recent Commission Approved ROEs[3]:	*
*None within the last two years	
(7) Distribution System Improvement Charge (DSIC) Return[4]:	**10.15%**
[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
Q4'21	9.30	10.41
Q1'22	9.62	10.54
Q2'22	9.36	10.76
Q3'22	9.52	10.93
Q4'22	9.41	11.05
Q1'23	9.29	10.84
Q2'23	9.62	10.82
Q3'23	9.90	10.87
Q4'23	9.66	10.97

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 Market Price (Po) 4/12/2024 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	DCF (%)
Atmos Energy	113.99	3.22	3.34	2.93	10.20
Chesapeake Utilities Corporation	102.06	2.36	2.46	2.41	8.71
New Jersey Resources	41.79	1.68	1.72	4.12	9.79
NiSource Inc.	27.07	1.06	1.08	4.00	12.00
Northwest Natural Gas	36.13	1.95	1.95	5.41	9.74
ONE Gas, Inc.	62.08	2.64	2.68	4.32	8.98
Southwest Gas	72.86	2.48	2.55	3.50	8.00
Spire Inc.	58.66	3.02	3.09	5.26	10.75
Group Average	64.33	2.30	2.36	3.99	9.77
Group Average G				5.80	
DCF				**9.79**	

Gas Company Barometer Group
52-week Average Dividend Yield Calculation

	High ($)	Low ($)	Average (Pa) ($)	Latest Indicated Dividend (Do) ($)	Average Dividend Yield (Do/Pa) (%)	DCF (%)
Atmos Energy	125.28	101.00	113.14	3.22	2.85	10.11
Chesapeake Utilities Corporation	132.91	83.80	108.36	2.36	2.18	8.48
New Jersey Resources	54.00	38.92	46.46	1.68	3.62	9.28
NiSource Inc.	28.95	22.86	25.91	1.06	4.09	12.09
Northwest Natural Gas	48.37	34.95	41.66	1.95	4.68	9.01
ONE Gas, Inc.	83.89	55.50	69.70	2.64	3.79	8.45
Southwest Gas	76.75	53.79	65.27	2.48	3.80	8.30
Spire Inc.	70.60	53.77	62.19	3.02	4.86	10.34
Group Average	77.59	55.57	66.58	2.30	3.73	9.51
Group Average G					5.80	
DCF					**9.53**	
		Average of Current and 52-Week			**9.66**	

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						
	5 Yr Forecast					
	Value Line DPS (%)	Value Line EPS (%)	Zack's EPS (%)	Yahoo EPS (%)	Average Earnings Growth (%)	Growth Estimate (%)
Atmos Energy	7.50	7.00	7.30	7.50	7.27	7.27
Chesapeake Utilities Corporation	8.50	5.00	NA	7.60	6.30	6.30
New Jersey Resources	5.00	5.00	6.00	6.00	5.67	5.67
NiSource Inc.	4.50	9.50	7.20	7.30	8.00	8.00
Northwest Natural Gas	0.50	6.50	3.70	2.80	4.33	4.33
ONE Gas, Inc.	3.00	4.00	5.00	5.00	4.67	4.67
Southwest Gas	5.50	10.00	5.00	4.00	6.33	4.50
Spire Inc.	4.50	4.50	5.60	6.36	5.49	5.49
Group Average	4.88	6.44	5.69	5.82	6.01	5.78
USE						**5.80**
Sources:	Value Line Investment Survey, April 15, 2024					
	Zacks, April 15, 2024 (www.zacks.com)					
	Yahoo!, April 15, 2024 (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]	
April 12, 2024	
Water Company Barometer Group	
	Cost Rates
	%
(1) Current DCF	8.79
(2) 52-Week Average DCF	8.23
(3) Average DCF	8.51
(4) Market Indicated Common Equity Cost Rate Range	7.29-9.74
@ 1 standard deviation around the mean.[2]	
(5) CAPM Check of DCF Reasonableness	10.70
(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]:	**9.65%**
[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
Q4'21	8.46	9.88
Q1'22	8.64	10.04
Q2'22	8.80	10.09
Q3'22	8.76	10.39
Q4'22	8.16	10.56
Q1'23	8.01	10.42
Q2'23	8.00	10.42
Q3'23	8.06	10.62
Q4'23	8.51	10.70

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) 4/12/2024 ($)	Latest Indicated Dividend (Do) ($)	Ind. Div. Plus 1/2 Div. Growth Rate (D1) ($)	Current Dividend Yield(D1/Po) (%)	Growth (%)	DCF (%)
American States Water Company	67.78	1.72	1.79	2.65	5.73	8.38
American Water Works Co., Inc.	116.57	2.83	2.95	2.53	6.23	8.76
California Water Service Group	44.40	1.12	1.16	2.60	6.50	9.10
Essential Utilities, Inc.	34.36	1.23	1.28	3.72	6.10	9.82
Middlesex Water Company	47.07	1.30	1.34	2.85	3.85	6.70
SJW Group	52.82	1.54	1.57	2.98	7.00	9.98
Group Average	60.50	1.62	1.68	2.89	5.90	8.79
Group Average G				5.90		
DCF				**8.79**		

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	92.85	66.78	79.82	1.72	2.15	5.73	7.89
American Water Works Co., Inc.	152.99	114.25	133.62	2.83	2.12	6.23	8.35
California Water Service Group	59.64	43.74	51.69	1.12	2.17	6.50	8.67
Essential Utilities, Inc.	44.05	32.07	38.06	1.23	3.23	6.10	9.33
Middlesex Water Company	84.38	46.06	65.22	1.30	1.99	3.85	5.84
SJW Group	79.48	51.92	65.70	1.54	2.34	7.00	9.34
Group Average	85.57	59.14	72.35	1.62	2.33	5.90	8.24
Group Average G					5.90		
DCF					**8.23**		
		Average of Current and 52-Week			**8.51**		

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	
	Value Line	Value Line	Zacks	Yahoo	Earnings	Growth
	DPS	EPS	EPS	EPS	Growth	Estimate
	(%)	(%)	(%)	(%)	(%)	(%)
American States Water Company	8.50	6.50	6.30	4.40	5.73	5.73
American Water Works Co., Inc.	8.50	3.00	8.20	7.50	6.23	6.23
California Water Service Group	6.50	6.50	NA	10.80	8.65	6.50
Essential Utilities, Inc.	8.00	7.50	5.60	5.20	6.10	6.10
Middlesex Water Company	6.50	5.00	NA	2.70	3.85	3.85
SJW Group	4.50	6.50	NA	7.50	7.00	7.00
Group Average	7.08	5.83	6.70	6.35	6.26	5.90
USE						**5.90**

Sources: Value Line Investment Survey, April 15, 2024
Zacks, April 15, 2024 (www.zacks.com)
Yahoo!, April 15, 2024 (http://finance.yahoo.com/)
* NA signifies that a forecast was not available

The Water Utility Industry consists of six investor-owned companies that provide water services to residential, commercial, and industrial customers. It is a niche sector because most of the water utilities in the United States are run by states and local governments that do not issue stock.

In our last Industry report three months ago, we discussed how long-term interest rates had spiked higher. In retrospect, it was close to the peak yield on longer-duration Treasury bonds, which have declined sharply since the latter part of October.

The water infrastructure in the United States remains in subpar condition despite increased investment in this sector over the past decade or so.

Every water company we cover is in the midst of a large construction program. Many pipelines are corroding or leaking, and they need to be replaced.

Since the Industry is spending heavily on capital expenditures, the typical balance sheet in the this space is overleveraged.

The Water Utility Industry is very small. There are only six companies with a combined market capitalization of about $45 billion.

Shares of these stocks have performed very poorly in the recent past. Indeed, the Water Utility Industry is ranked among the lowest of the 93 industries followed by *Value Line*.

A Reversal In Long-Term Interest Rates

All types of utilities are often viewed as income equities due to their combination of high dividend yields and better-than-average distribution growth prospects. The yields on most water stocks are currently very close to the *Value Line* median, however. Indeed, *Essential Utilities's* 3.4% yield is the one exception in the group. In any case, as heavy borrowers of debt, lower interest rates ought to be beneficial to the Industry. On October 18th, the yield on the benchmark 10-year Treasury bond eclipsed 5% in intraday trading. Following some positive news on the inflation front and indications that the Federal Reserve may cut rates this year, long-duration bond prices have rallied strongly. Over the past 10 weeks, the yield on the 10-year Treasury has declined by about 110 basis points tc approximately 3.90%.

Antiquated Infrastructure

For decades, annual capital expenditures on modernizing and upgrading assets such as pipelines and wastewater treatment facilities, were underfunded. For the sake of keeping customers bills low, major maintenance projects were deferred. About 10 to 15 years ago, both the operators of the water facilities and state regulators realized that the situation had to change. Depending upon the source of the information, the general condition of domestic pipelines is substandard, with the average age of pipes being anywhere from 50 to 75 years. As mentioned previously, water utilities have been working to upgrade their systems. Fortunately for them, this is a sort of pay-as-you go type of construction. Electric utilities, for example, have to make huge upfront payments to add a new base load unit. Hence, regulators have had a more-constructive relationship with water companies. However, in the years between the housing crisis of 2007-09 and the pandemic, inflation was very low. This made it easier to pass along high-single-digit rate increases without much pushback from customers. The spike in inflation that was caused by the monetary and fiscal policies aimed at combating COVID-19's impact on the economy has declined, but remains above the Federal Reserve's 2.0% target. Should double-digit rate hikes now be required to finance the construction programs, there could be greater displeasure shown by ratepayers (i.e. voters). This may cause regulators to become more restrictive in their rulings.

INDUSTRY TIMELINESS: 91 (of 93)

Growing Via Acquisitions

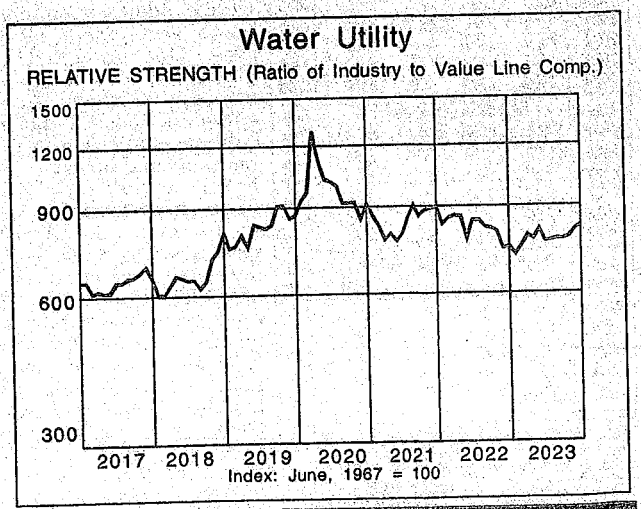
The water industry in the U.S. is mostly run by local, municipal water districts. (There are some major exceptions, such as in New York City.) As a result, there are tens of thousands of these entities operating separately. There is no need for such an immense number, as it leads to inefficiency. Small districts also do not have the financial wherewithal required to fund the needed upgrades. *American Water Works* and *Essential Utilities* are two companies that use bolt-on acquisitions as part of their overall strategy to expand their rate base. These big utilities can easily absorb smaller ones and achieve substantial cost savings by eliminating redundancies.

Conclusion

There are no stocks in this industry that stand out for having favorable short-term total appreciation potential. Despite the bad performance by these equities over the past few years, most continue to have high price-to-earnings ratios and are already trading in their 2026-2028 Target Price Ranges. One of the reasons these equities trade at such a premium is because of scarcity. Investors who want to be in this sector ought to be aware that they will have to pay for the privilege. The only equity followed here that has good long-term total-return potential is *Essential Utilities* and that's probably due to its presence in the gas utility sector.

As always, we strongly recommend that subscribers read each individual comment before investing to better understand the underlying risks associated with each stock.

James A. Flood



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AMER. STATES WATER NYSE-AWR

RECENT PRICE 81.67 | P/E RATIO 29.4 (Trailing: 24.6 Median: 30.0) | RELATIVE P/E RATIO 1.66 | DIV'D YLD 2.2% | VALUE LINE 1783

TIMELINESS 3 Lowered 12/1/23
SAFETY 2 Raised 7/20/12
TECHNICAL 3 Raised 12/15/23
BETA .70 (1.00 = Market)

18-Month Target Price Range

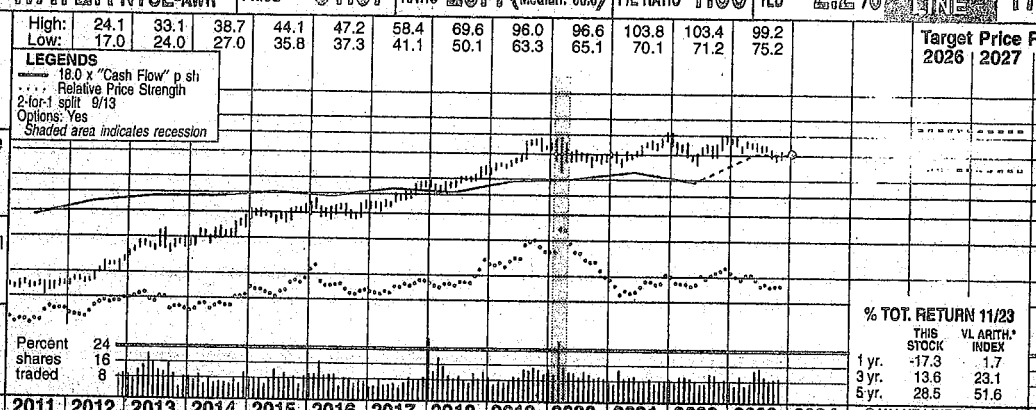
Low-High	Midpoint (% to Mid)
$66-$134	$100 (20%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	110	(+35%)	10%
Low	70	(-15%)	-1%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	124	141	158
to Sell	158	138	133
Hld's(000)	27587	27816	28119



2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	13.24	13.51	13.30	*16.35*	*15.05*	Revenues per sh	*19.20*
1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	3.34	3.64	3.25	*4.60*	*4.20*	"Cash Flow" per sh	*5.05*
.81	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	2.33	2.55	2.11	*3.35*	*3.00*	Earnings per sh [A]	*3.40*
.48	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	1.28	1.40	1.53	*1.66*	*1.80*	Div'd Decl'd per sh [B]	*2.30*
1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	3.54	3.91	4.50	*4.95*	*5.15*	Cap'l Spending per sh	*4.25*
8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	17.39	18.57	19.20	*20.95*	*22.30*	Book Value per sh [D]	*24.55*
34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	36.89	36.94	36.96	*37.00*	*37.25*	Common Shs Outst'g [C]	*37.50*
24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	34.3	33.2	41.0	*25.8*		Avg Ann'l P/E Ratio	*25.0*
1.27	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.83	1.76	1.79	2.38	*1.49*		Relative P/E Ratio	*1.40*
2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	1.6%	1.7%	1.8%	*1.9%*		Avg Ann'l Div'd Yield	*2.6%*
472.1	465.8	458.6	436.1	440.6	436.8	473.9	488.2	498.9	491.5	*605*	*560*	Revenues ($mill)	*720*
62.7	61.1	60.5	59.7	69.4	63.9	84.3	86.4	94.3	78.4	*125*	*110*	Net Profit ($mill)	*130*
36.3%	38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	24.4%	23.2%	*24.5%*	*24.0%*	Income Tax Rate	*24.0%*
--	--	--	--	--	--	--	--	--	--	*1.5%*	*2.0%*	AFUDC % to Net Profit	*1.5%*
39.8%	39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	47.2%	46.1%	39.9%	*43.5%*	*46.5%*	Long-Term Debt Ratio	*50.0%*
60.2%	60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	52.8%	53.9%	60.1%	*56.5%*	*53.5%*	Common Equity Ratio	*50.0%*
818.4	832.6	791.5	815.3	854.9	938.4	1082.5	1216.2	1272.6	1181.5	*1375*	*1550*	Total Capital ($mill)	*1840*
981.5	1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	1512.0	1626.0	1753.8	*1875*	*1985*	Net Plant ($mill)	*2225*
8.9%	8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	8.0%	8.3%	7.6%	*10.5%*	*9.0%*	Return on Total Cap'l	*8.0%*
12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.8%	11.0%	*16.0%*	*13.5%*	Return on Shr. Equity	*14.0%*
12.7%	12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.8%	11.0%	*16.0%*	*13.5%*	Return on Com Equity	*14.0%*
6.8%	5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	6.1%	6.2%	3.1%	*10.5%*	*5.5%*	Retained to Com Eq	*4.5%*
47%	53%	54%	56%	52%	61%	51%	55%	55%	72%	*50%*	*60%*	All Div'ds to Net Prof	*66%*

CAPITAL STRUCTURE as of 9/30/23
Total Debt $612.9 mill. Due in 5 Yrs $178.1 mill.
LT Debt $575.5 mill. LT Interest $44.0 mill. (43% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.3 mill.
Pension Assets-12/22 $190.7 mill. **Oblig.** $186.9 mill.
Pfd Stock None

Common Stock 36,980,592 shs. as of 11/3/23

MARKET CAP: $3.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	9/30/23
Cash Assets	5.0	6.0	8.6
Accts Receivable	34.4	26.2	32.6
Other	98.7	119.1	150.5
Current Assets	138.1	151.3	191.7
Accts Payable	65.9	84.9	71.8
Debt Due	31.4	255.9	37.4
Other	58.3	55.7	85.9
Current Liab.	155.6	396.5	195.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	1.5%	2.0%	*6.5%*
"Cash Flow"	4.5%	4.0%	*7.0%*
Earnings	6.5%	6.5%	*6.5%*
Dividends	9.5%	8.5%	*8.5%*
Book Value	5.5%	6.5%	*5.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
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	122.5	135.0	125.4	491.5
2023	161.4	157.4	151.7	*134.5*	*605*
2024	*125*	*132*	*160*	*143*	*560*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	.38	.69	.72	.54	2.33
2021	.52	.72	.76	.55	2.55
2022	.38	.54	.69	.50	2.11
2023	.93	1.04	.85	*.53*	*3.35*
2024	*.60*	*.80*	*.85*	*.75*	*3.00*

Calendar	QUARTERLY DIVIDENDS PAID [B] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	1.53
2023	.3975	.3975	.43	.43	

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 263,265 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,705 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 811. BlackRock, Inc. owns 18.6% of out. shares; State St., 16.6%; off. & dir., 0.8% (4/23 Proxy). Chair.: Anne M. Holloway. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel.: 909-394-3600. Int.: www.aswater.com.

Rate relief probably enabled American States Water to complete a successful year. The water utility likely posted record profits last year due to a delay in a ruling by California authorities. According to the law, utilities seeking to raise customer bills to recoup expenses and capital investments must submit an official request to raise rates triennially. The California Public Utility Commission (CPUC) then rules on the petition. American States' Golden Water subsidiary followed the correct methods, but the CPUC issued its ruling very late. The utility was forced to absorb higher costs in 2022. Thus, when the rates were granted last year, they were retroactive to the beginning of 2022. The end result was that American States did poorly in 2022 and exceptionally well in 2023.

The bottom line will likely return to normal in 2024. We think that the company's share earnings can reach $3.00. Though it represents a decline, it will be a decent year. The question is whether the CPUC will permit new rates in 2025 or will make the company wait an additional year, like it did the last time.

Nonutility operations could well provide a lift to earnings growth. State regulators place a limit on the level that a utility can earn. There is less risk and less reward in this model. Through its ASUS subsidiary, the company is involved in managing water services at bases owned by the United States Army. There aren't many entities in this field, so ASUS has been successful in winning its share of bids on new 50-year contracts to service these facilities. Since rates of return aren't regulated in this sector, this business can generate higher returns than Golden States' regulated operations. Through the first three quarters, ASUS has been responsible for 14% of the American States share profits. We look for this percentage to rise as more military installations privatize their water operations.

These shares are ranked to perform in line with the market in the year ahead. Out to 2026-2028, the situation appears to be more unfavorable. Despite solid dividend growth prospects, the equity's total return potential to that time is well below the *Value Line* median.

James A. Flood *January 5, 2024*

(A) Primary earnings. Excludes nonrecurring (losses): '08, (14¢); '10, (23¢); '11, 10¢. 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 12/31/22: $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	85

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AMERICAN WATER NYSE-AWK

RECENT PRICE 131.56 | P/E RATIO 26.8 (Trailing: 27.3 Median: 28.0) | RELATIVE P/E RATIO 1.51 | DIV'D YLD 2.3% | VALUE LINE 1784

TIMELINESS 4 Lowered 11/17/23
SAFETY 3 New 7/25/08
TECHNICAL 3 Raised 9/29/23
BETA .95 (1.00 = Market)

18-Month Target Price Range

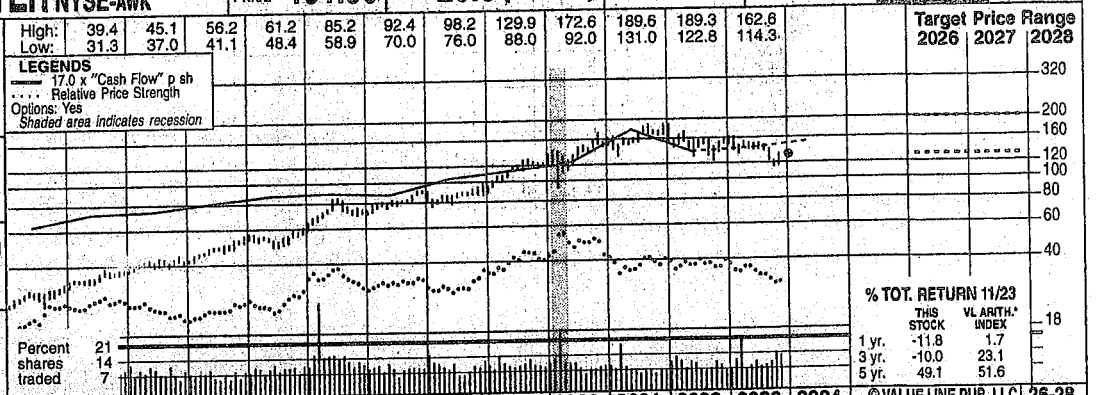
Low-High	Midpoint (% to Mid)
$106-$214	$160 (20%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	200	(+50%)	13%
Low	130	(Nil)	2%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	460	436	441
to Sell	404	418	460
Hld's(000)	165074	166259	177196



2007E	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.83	21.58	20.85	*21.45*	*22.55*	Revenues per sh	*26.75*
d.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.24	10.46	8.08	*8.40*	*9.00*	"Cash Flow" per sh	*10.20*
d2.14	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	3.91	6.95	4.51	*4.80*	*5.15*	Earnings per sh A	*6.10*
--	.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.36	2.57	*2.78*	*3.00*	Div'd Decl'd per sh B▫	*3.80*
4.74	6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.05	9.71	12.63	*13.00*	*13.25*	Cap'l Spending per sh	*15.75*
28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	35.58	40.18	42.30	*50.95*	*53.25*	Book Value per sh D	*57.25*
160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.30	181.61	181.86	*195.00*	*195.25*	Common Shs Outst'g C	*200.00*
--	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3	23.6	33.6	*29.3*		Avg Ann'l P/E Ratio	*27.0*
--	1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.75	1.81	1.28	1.95	*1.70*		Relative P/E Ratio	*1.50*
--	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%	1.4%	1.7%	*2.0%*		Avg Ann'l Div'd Yield	*2.3%*
						2901.9	3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3777.0	3920.0	3792.0	*4180*	*4400*	Revenues ($mill)	*5350*
						369.3	429.8	476.0	468.0	426.0	567.0	621.0	709.0	1263.0	820.0	*935*	*1005*	Net Profit ($mill)	*1220*
						39.1%	39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	23.3%	23.0%	18.7%	*21.0%*	*21.0%*	Income Tax Rate	*24.0%*
						5.1%	--	--	--	--	--	--	--	5.1%	2.9%	*3.5%*	*4.5%*	AFUDC % to Net Profit	*5.0%*
						52.4%	52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.1%	58.6%	58.7%	*55.0%*	*57.5%*	Long-Term Debt Ratio	*57.5%*
						47.6%	47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.9%	41.4%	41.3%	*45.0%*	*42.5%*	Common Equity Ratio	*42.5%*
						9940.7	10364	10911	10967	11875	13433	14760	15787	17639	18619	*22000*	*24400*	Total Capital ($mill)	*27000*
						12391	12900	13933	14992	16246	17409	18232	19710	21084	23223	*25200*	*27250*	Net Plant ($mill)	*30000*
						5.1%	5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	5.7%	8.2%	5.5%	*6.0%*	*5.5%*	Return on Total Cap'l	*5.5%*
						7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	17.3%	10.7%	*9.5%*	*9.5%*	Return on Shr. Equity	*10.5%*
						7.8%	8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	17.3%	10.7%	*9.5%*	*9.5%*	Return on Com Equity	*10.5%*
						4.7%	4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	11.4%	4.6%	*4.0%*	*4.0%*	Retained to Com Eq	*4.5%*
						40%	50%	50%	56%	68%	56%	57%	55%	34%	57%	*58%*	*58%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 9/30/23
Total Debt $12190 mil. **Due in 5 Yrs** $2486 mil.
LT Debt $11698 mil. **LT Interest** $449 mil. (54% of Cap'l)

Leases, Uncapitalized: Annual rentals $9.0 mill.
Pension Assets 12/22 $1578.0 mill
Oblig. $1413.0 mill.
Pfd Stock $2.0 mill. **Pfd Div'd** $.1 mill

Common Stock 194,704,997 shares as of 10/23/23

MARKET CAP: $25.6 billion (Large Cap)

CURRENT POSITION ($MILL.)	2021	2022	9/30/23
Cash Assets	136	117	661
Accts Receivable	271	334	382
Other	1147	799	761
Current Assets	1554	1250	1804
Accts Payable	235	254	228
Debt Due	641	1456	492
Other	1265	1101	1023
Current Liab.	2141	2811	1743

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	3.0%	3.0%	*4.0%*
"Cash Flow"	8.5%	10.5%	*3.0%*
Earnings	11.0%	15.0%	*3.0%*
Dividends	9.0%	10.0%	*8.5%*
Book Value	5.0%	6.0%	*6.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	844	931	1079	923	3777
2021	888	999	1082	951	3920
2022	842	937	1082	931	3792
2023	938	1097	1167	*978*	*4180*
2024	*990*	*1150*	*1235*	*1025*	*4400*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	.68	.97	1.46	.80	3.91
2021	.73	1.14	1.53	3.55	6.95
2022	.87	1.20	1.63	.81	4.51
2023	.91	1.44	1.66	*.79*	*4.80*
2024	*.95*	*1.50*	*1.85*	*.85*	*5.15*

Calendar	QUARTERLY DIVIDENDS PAID B▫ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.455	.50	.50	.50	1.96
2020	.50	.55	.55	.55	2.15
2021	.55	.6025	.6025	.6025	2.36
2022	.6025	.655	.655	.655	2.57
2023	.655	.7075	.7075	.7075	

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 2022 revenues. New Jersey is its largest market accounting for 25.9% of regulated revenues; Pennsylvania, 23.4%; Missouri, 10.9%. Has 6,500 employees. Vanguard owns 11.7% of outstanding shares; BlackRock, 8.6%; State St., 5.4%; officers & directors, less than 1.0% (3/23 Proxy). President & Chief Executive Officer: Susan Hardwick. . Address: 1 Water Street, Camden, NJ 08102. Telephone: 856-346-8200. Internet: www.amwater.com.

American Water Works intends to continue to expand both its rate base and operating margins via bolt-on acquisitions. The water industry in the U.S. is made up mostly of thousands of small, independent, water districts. Not only are these entities inefficient, but they lack sufficient funds to modernize their antiquated infrastructure. American Water expects to spend $4 billion to $5 billion on these types of purchases through 2033. The company has proven that it can take assets from other utilities and realize substantial cost savings. This increases its revenues and operating margins.

The already massive projected capital expenditure budget has been raised again. Previously, leadership forecast that the 10-year construction program would be in the range of $27 billion to $30 billion. In the most recent presentation made in December of 2023, this budget was hiked 10%-11%, to $30 billion to $33 billion.

The balance sheet ought to be healthy enough to handle these outlays. In the year just ended, we think the water utility spent $2.6 billion on capital expenses. A large equity offering that raised $1.7 billion increased shares outstanding 7%-8%. This was unusual, as management has historically been disinclined to raise money in this fashion. Indeed, the number of shares rose only 2.7% in the previous decade. More debt and some new equity issues will be required going forward. American Water's financial condition should remain at least average, however.

Earnings and dividend growth rates here ought to outpace other members of the industry. Assuming reasonable treatment by regulators on the utility's requests for rate relief (more below), we think annual increases in the payout and bottom line can average 7%-9%.

The wild card is here is the regulatory climate. The company has enjoyed constructive relationships with the authorities who determine its allowed returns. This was before the pandemic, though, when low inflation made it easier to pass along big rate hikes to customers.

These shares are untimely. Moreover, despite the stock's underperformance over the last three years, we think that it still doesn't offer much value to 2026-2028.

James A. Flood *January 5, 2024*

(A) Diluted earnings. Excludes nonrecur. 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 late mid-February.
(B) Dividends paid in March, June, September, and December. ▫ Div. reinvestment available.
(C) In millions. (D) Includes intangibles. On 12/31/22: $1.225 billion, $6.75/share.
(E) Pro forma numbers for '07.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	75
Earnings Predictability	60

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Value Line

CALIFORNIA WATER NYSE-CWT

RECENT PRICE 52.29 | P/E RATIO 28.6 (Trailing: NMF) (Median: 28.0) | RELATIVE P/E RATIO 1.62 | DIV'D YLD 2.0% | VALUE LINE 1785

TIMELINESS 4 Raised 12/22/23
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Raised 12/15/23
.75 (1.00 = Market)

3-Month Target Price Range
Low-High Midpoint (% to Mid)
$39-$83 $61 (15%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	80	(+55%)	13%
Low	55	(+5%)	4%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	125	139	125
to Sell	124	129	127
Hld's(000)	44814	46985	48886

	High:	19.3	23.4	26.4	26.0	36.8	46.2	49.1	57.5	57.4	72.1	72.0	63.9		Target Price Range 2026	2027	2028
	Low:	16.8	18.4	20.3	19.5	22.5	32.4	35.3	44.6	39.7	51.0	48.5	45.4				

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

Percent shares traded: 18, 12, 6

% TOT. RETURN 11/23

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-20.6	1.7
3 yr.	7.6	23.1
5 yr.	19.8	51.6

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
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	15.22	*13.95*	*16.10*	Revenues per sh	*19.30*
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	3.79	*2.20*	*3.70*	"Cash Flow" per sh	*4.35*
.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	1.96	1.77	*.80*	*2.25*	Earnings per sh A	*2.75*
.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	.92	1.00	*1.04*	*1.12*	Div'd Decl'd per sh B ◻	*1.35*
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	5.90	*6.00*	*6.15*	Cap'l Spending per sh	*6.45*
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	23.70	*24.90*	*26.20*	Book Value per sh C	*29.50*
41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	53.72	55.60	*57.00*	*55.00*	Common Shs Outst'g D	*50.00*
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	33.0	*NMF*		Avg Ann'l P/E Ratio	*24.0*
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	1.65	1.92	*NMF*		Relative P/E Ratio	*1.30*
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%	*1.9%*		Avg Ann'l Div'd Yield	*2.0%*
584.1	597.5	588.4	609.4	666.9	698.2	714.6	794.3	790.9	846.4	*795*	*805*	Revenues ($mill) E	*965*
47.3	56.7	45.0	48.7	67.2	65.6	63.1	96.8	101.1	96.0	*46.0*	*124*	Net Profit ($mill)	*138*
30.3%	33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	11.1%	20.1%	3.3%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
4.3%	2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	3.3%	1.7%	1.7%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
41.6%	40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	45.9%	47.3%	44.4%	*41.5%*	*40.5%*	Long-Term Debt Ratio	*38.0%*
58.4%	59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	54.1%	52.7%	55.6%	*58.5%*	*59.5%*	Common Equity Ratio	*62.0%*
1024.9	1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	1702.4	2233.4	2370.1	*2420*	*2415*	Total Capital ($mill)	*2375*
1515.8	1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	2650.6	2846.9	3058.9	*3175*	*3225*	Net Plant ($mill)	*3450*
6.0%	6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	7.0%	5.5%	5.0%	*2.5%*	*5.5%*	Return on Total Cap'l	*6.5%*
7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	8.6%	7.3%	*3.0%*	*8.5%*	Return on Shr. Equity	*9.5%*
7.9%	9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	8.6%	7.3%	*3.0%*	*8.5%*	Return on Com Equity	*9.5%*
3.4%	4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	6.0%	4.6%	3.2%	*NMF*	*4.5%*	Retained to Com Eq	*4.5%*
56%	55%	71%	68%	51%	55%	60%	43%	47%	56%	*NMF*	*50%*	All Div'ds to Net Prof	*49%*

CAPITAL STRUCTURE as of 9/30/23
Total Debt $1069.6 mill. **Due in 5 Yrs** $357.0 mill.
LT Debt $1052.8 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 2.5x) (44% of Cap'l)

Pension Assets-12/22 $637.3 mill.
Oblig. $685.3 mill.

Pfd Stock None

Common Stock 57,711,000 shs.

MARKET CAP: $3.0 billion (Mid Cap)

NET POSITION (Mill.)	2021	2022	9/30/23
Cash Assets	78.4	62.1	34.7
Other	222.1	233.4	267.6
Current Assets	300.5	295.5	302.3
Accts Payable	144.4	141.0	152.9
Debt Due	40.2	73.3	116.8
Other	72.0	80.4	111.4
Current Liab.	256.6	294.7	381.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	2.5%	3.5%	*4.0%*
"Cash Flow"	6.0%	9.0%	*2.0%*
Earnings	7.5%	11.0%	*6.5%*
Dividends	4.0%	6.0%	*6.5%*
Book Value	7.0%	9.0%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) E Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	200.9	846.4
2023	131.1	194.0	255.0	*214.9*	*795*
2024	*180*	*210*	*275*	*220*	*885*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	d.42	.11	1.94	.31	1.97
2021	d.06	.75	1.20	.07	1.96
2022	.02	.36	1.03	.35	1.77
2023	d.40	.17	.60	*.43*	*.80*
2024	*.15*	*.60*	*1.00*	*.50*	*2.25*

Calendar	QUARTERLY DIVIDENDS PAID B ◻ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.1975	.1975	.1975	.1975	.79
2020	.2125	.2125	.2125	.2125	.85
2021	.230	.230	.230	.230	.92
2022	.250	.250	.250	.250	1.00
2023	.260	.260	.260	.260	

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 496,400 customers in 100 communities in the state of California. Accounts for about 90% 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, '22: residential, 67%; business, 20%; industrial, 3%; public authorities, 5%; other 5%. Off. and dir. own 1% of common stock (4/23 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group's third-quarter financial results were unfavorably impacted by the state's continued indecision on the pending rate case approval. The company reported revenues of $255 million and earnings of $0.60 per share in the September period, with both figures contracting on an annual basis. Management estimated that a favorable decision would have added approximately $20 million to the top line in the third quarter. Meanwhile, a second judge was assigned to the rate case in late July of last year and, according to regulators, the time line for a decision was extended to the end of 2023. Thus, we expect a ruling on the approval to be imminent.

Our 2023 top- and bottom-line estimates are being reduced at this time. We now look for revenues of $795 million (down from our previous call of $805 million) and earnings of $0.80 per share (down from $0.95). Indeed, the slow-moving rate case gives us pause. Elsewhere, consumer water consumption likely remained soft for the remainder of the year. Moreover, higher operating costs, namely water production, purchased water, and labor expenses, probably persisted.

The long-term picture is notably brighter, however. Assuming the abovementioned rate case is approved by regulators, new customer pricing will be retroactive starting from January 1, 2023. These recouped funds, on top of higher rates going forward, augur well. Meanwhile, management is aggressively investing in upgrading its water system infrastructure ($274 million was spent in the recent period), which suggests that additional rate hike approvals may be pursued down the road. Lastly, a healthier economic backdrop ought to support an uptick in broader residential and business water consumption further out.

From an investment standpoint, California Water shares leave something to be desired at the moment. The stock is ranked to trail the broader market averages over the coming six to 12 months. What's more, at the recent quotation, total return potential three to five years hence is below the *Value Line* median.

Nicholas Patrikis *January 5, 2024*

(A) Diluted EPS. Excl. nonrecurring gain (loss): '11, 1.16; '12, (.04); '13, (.03); '14, (.03); '15, (.04); '16, (.04); '17, (.04); '18, (.04); '19, (.04); '20, (.04); '21, (.04); '22, (.04); '23, (.04). Next earnings report due late Feb. B Div'ds historically paid in late Feb., May, Aug., and Nov. ◻ Div'd reinvestment plan available. (C) Incl. intangible assets. In '22 : $64.6 mill., $1.16/sh. (D) In millions, adjusted for split. (E) Excludes non-regulated revenues.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	80
Earnings Predictability	55

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ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE 37.14 | P/E RATIO 19.1 (Trailing: 20.6, Median: 26.0) | RELATIVE P/E RATIO 1.08 | DIV'D YLD 3.4% | VALUE LINE 1786

TIMELINESS 4 Lowered 12/22/23
SAFETY 3 Lowered 1/8/21
TECHNICAL 3 Raised 11/24/23
BETA 1.00 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$29-$62	$46 (25%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+100%)	22%
Low	50	(+35%)	11%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	268	246	254
to Sell	271	295	275
Hld's(000)	189507	195095	204460

High:	21.5	28.1	28.2	31.1	35.8	39.6	39.4	47.3	54.5	53.9	53.7	49.3			Target Price Range 2026	2027	2028
Low:	16.8	20.6	22.4	24.4	28.0	29.4	32.1	32.7	30.4	41.1	38.5	32.1					

LEGENDS
— 17.5 x "Cash Flow" p sh
···· Relative Price Strength
5-for-4 split 9/13
Options: Yes
Shaded area indicates recession

% TOT. RETURN 11/23

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-23.9	1.7
3 yr.	-15.2	23.1
5 yr.	16.6	51.6

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
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	8.68	*8.30*	*8.80*	Revenues per sh	*9.10*
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	2.98	*3.55*	*3.65*	"Cash Flow" per sh	*3.85*
.57	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	1.12	1.67	1.77	*1.85*	*2.00*	Earnings per sh	*2.35*
.38	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	.97	1.04	1.11	*1.19*	*1.27*	Div'd Decl'd per sh	*1.65*
1.43	1.58	1.65	1.89	1.90	1.98	1.73	1.84	2.07	2.16	2.69	2.78	2.49	3.41	4.04	4.03	*4.05*	*4.25*	Cap'l Spending per sh	*3.85*
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	20.39	*21.85*	*23.10*	Book Value per sh	*25.95*
166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	245.39	252.87	263.74	*273.30*	*277.00*	Common Shs Outst'g	*285.00*
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	26.6	*21.8*		Avg Ann'l P/E Ratio	*26.0*
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	1.53	1.54	*1.26*		Relative P/E Ratio	*1.45*
2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.2%	2.2%	2.2%	2.4%	*3.0%*		Avg Ann'l Div'd Yield	*2.6%*
						768.6	779.9	814.2	819.9	809.5	838.1	889.7	1462.7	1878.1	2268.0	*2275*	*2435*	Revenues ($mill)	*2600*
						205.0	213.9	201.8	234.2	239.7	192.0	224.5	284.8	431.6	465.2	*505*	*555*	Net Profit ($mill)	*670*
						10.0%	10.5%	6.9%	8.2%	6.6%	--	--	--	--	--	*11.0%*	*14.0%*	Income Tax Rate	*16.0%*
						1.1%	2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	4.5%	4.8%	1.3%	*2.5%*	*3.0%*	AFUDC % to Net Profit	*5.0%*
						48.9%	48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	54.0%	52.7%	54.2%	*52.0%*	*52.5%*	Long-Term Debt Ratio	*56.0%*
						51.1%	51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	46.0%	47.3%	45.8%	*48.0%*	*47.5%*	Common Equity Ratio	*44.0%*
						3003.6	3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	10192	10964	11748	*12500*	*13535*	Total Capital ($mill)	*16800*
						4167.3	4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	9512.9	10252	11131	*12000*	*13000*	Net Plant ($mill)	*14600*
						8.0%	7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	3.7%	4.8%	5.0%	*5.0%*	*5.0%*	Return on Total Cap'l	*5.0%*
						13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	8.3%	8.7%	*8.5%*	*8.5%*	Return on Shr. Equity	*9.0%*
						13.4%	12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	8.3%	8.7%	*8.5%*	*8.5%*	Return on Com Equity	*9.0%*
						6.7%	6.1%	4.7%	5.6%	5.1%	2.1%	.9%	1.1%	3.3%	3.3%	*3.0%*	*2.5%*	Retained to Com Eq	*2.5%*
						50%	52%	60%	56%	59%	79%	84%	82%	60%	62%	*64%*	*64%*	All Div'ds to Net Prof	*70%*

Pension Assets-12/22 $333.2 mill. Oblig. $324.7 mill.

Pfd Stock None

Common Stock 273,165,817 shares as of 10/23/23

MARKET CAP: $10.1 billion (Large Cap)

CAPITAL STRUCTURE as of 9/30/23

Total Debt $6806.4 mill. Due in 5 Yrs $1400 mill.
LT Debt $6456.0 mill. LT Interest $254.0 mill. (52% of Cap'l)

CURRENT POSITION ($MILL.)	2021	2022	9/30/23
Cash Assets	10.6	11.4	8.5
Receivables	141.0	206.3	133.7
Inventory (AvgCst)	109.6	46.6	48.8
Other	176.6	393.9	218.3
Current Assets	437.8	658.2	409.3
Accts Payable	192.9	238.8	191.9
Debt Due	197.1	427.9	350.4
Other	285.1	355.2	354.3
Current Liab.	675.1	1021.9	896.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	5.5%	10.0%	*3.5%*
"Cash Flow"	6.5%	6.0%	*6.0%*
Earnings	6.5%	3.5%	*7.5%*
Dividends	7.5%	7.0%	*8.0%*
Book Value	10.5%	14.0%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	448.7	434.6	705.4	2288.0
2023	726.5	436.7	411.1	*700.7*	*2275*
2024	*755*	*475*	*475*	*730*	*2435*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.21	.29	.22	.40	1.12
2021	.72	.32	.19	.44	1.67
2022	.76	.31	.26	.44	1.77
2023	.72	.34	.30	*.49*	*1.85*
2024	*.80*	*.35*	*.30*	*.55*	*2.00*

Calendar	QUARTERLY DIVIDENDS PAID B ◻ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2019	.219	.219	.2343	.2343	.91
2020	.2343	.2343	.2507	.2507	.97
2021	.2507	.2507	.2682	.2682	1.04
2022	.2682	.2682	.287	.287	1.11
2023	.287	.287	.3071	.3071	

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 2022, Aqua Amer. provided water and wastewater services in the states of PA, OH, TX, IL, NC, NJ, IN, VA NS WS. Acquired AquaSource, 7/13; N. Maine Util., 7/15; and others. Water respn. for 47% of revenues in 2022; residential, 27%; commercial, 7%; industrial, wastewater & other, 13%. Gas 50%; other, 3.0%. Employes 3,178. Off. & dir. own less than 1% of the common stock; BlackRock, 11.2%; Vanguard, 10.1%; Can. Pen. Plan 8.2% (3/23 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 posted strong third-quarter results. The water and gas utility company's share earnings of $0.30 were $0.01 above our expectations and a 15% increase over the year-ago period. Regulators allowed the implementation of higher rates on water customers' bills in eight different states. This brought in an additional $42.2 million. On the gas side, higher rates permitted by Pennsylvania and Kentucky state authorities brought in $21.3 million in revenues. Also providing a boost to the bottom line was an almost 3% decrease in operating and maintenance expenses. It should be noted that not all revenue is the same in the utility sector. Essential's top line actually declined 5.4% in the September period on a year-over-year basis. When gas is cheaper on the open market, a utility buys it and sells the gas to clients at the same price. So, it is just a pass-through revenue that doesn't impact net income.

The company likely ended 2023 on a positive note. Ongoing cost controls probably also helped profitability. Along with the rate relief, earnings per share probably increased by double digits. Since first-half earnings fell marginally, full-year earnings per share should have rose 5%.

We expect 2024 to be another decent year. Expenses ought to trend higher, but may be offset by rate relief granted in New Jersey, Ohio, and Virginia in the water segment. Overall, share earnings could rise another 5%-10%.

Essential is another member of the water sector that is increasing its size and income through acquisitions. In the U.S., the water industry is made up of thousands of independent, mostly municipally run entities that are often underfunded and inefficient. Like American Water Works, Essential is absorbing these water districts so that it can substantially widen margins on the purchases through economies of scale. Management thinks that these bolt-on purchases can expand its rate base by 2%-3% annually.

This good-yielding stock is ranked to underperform the market averages in the upcoming year. Looking further out to 2026-2028, shares of Essential have better total return potential than any other member of the Water Utility Industry.

James A. Flood *January 5, 2024*

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	65
Earnings Predictability	65

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(A) Diluted egs. 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: 12/31/22, $2345.4 bill./$8.89 a share.

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 67.58 | P/E RATIO 29.1 (Trailing: 36.7) (Median: 26.0) | RELATIVE P/E RATIO 1.64 | DIV'D YLD 1.9% | VALUE LINE 1787

TIMELINESS 5 Lowered 11/24/23
SAFETY 2 New 10/21/11
TECHNICAL 3 Raised 12/15/23
.75 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$57-$125 $91 (35%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+40%)	10%
Low	70	(+5%)	3%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	83	75	79
to Sell	96	99	86
Hld's(000)	11875	12584	13355

	High:	19.6	22.5	23.7	28.0	44.5	46.7	60.3	67.7	76.1	121.4	121.1	90.6
	Low:	17.5	18.6	19.1	21.2	25.0	32.2	34.0	51.0	48.8	67.1	74.2	61.3

LEGENDS
55.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2026 2027 2028

Percent shares traded 12 8 4

% TOT. RETURN 11/23

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-30.5	1.7
3 yr.	-2.7	23.1
5 yr.	32.2	51.6

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	8.10	8.17	9.21	*9.50*	*10.05*	Revenues per sh	*11.10*
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	3.70	*3.05*	*3.60*	"Cash Flow" per sh	*4.10*
.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	2.07	2.39	*2.05*	*2.55*	Earnings per sh A	*3.00*
.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	1.11	1.18	*1.28*	*1.32*	Div'd Decl'd per sh B■	*1.60*
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	5.18	*5.25*	*5.45*	Cap'l Spending per sh	*6.00*
10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.40	14.02	15.17	16.57	19.81	20.99	22.65	*23.55*	*23.60*	Book Value per sh	*23.70*
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	17.64	*17.65*	*17.90*	Common Shs Outst'g C	*18.00*
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	38.6	*36.9*		Avg Ann'l P/E Ratio	*28.0*
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	2.39	2.24	*2.14*		Relative P/E Ratio	*1.30*
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%	*1.7%*		Avg Ann'l Div'd Yield	*1.9%*
						114.8	117.1	126.0	132.9	130.8	138.1	134.6	141.6	143.1	162.4	*170*	*180*	Revenues ($mill)	*200*
						16.6	18.4	20.0	22.7	22.8	32.5	33.9	38.4	36.5	42.4	*36.5*	*45.5*	Net Profit ($mill)	*54.0*
						34.1%	35.0%	34.5%	34.0%	32.7%	2.8%	--	--	2.8%	7.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						1.9%	1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	3.9%	3.9%	3.9%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.5%*
						40.4%	40.5%	39.4%	37.9%	37.5%	37.6%	41.5%	44.0%	45.3%	41.9%	*44.0%*	*41.5%*	Long-Term Debt Ratio	*40.5%*
						58.7%	58.6%	59.8%	61.5%	61.8%	61.6%	58.2%	55.7%	54.4%	57.7%	*56.0%*	*58.5%*	Common Equity Ratio	*59.5%*
						321.4	335.8	345.4	355.4	370.7	404.1	556.7	621.5	676.3	692.7	*747*	*724*	Total Capital ($mill)	*720*
						446.5	465.4	481.9	517.8	557.2	618.5	705.7	796.6	865.4	920.6	*985*	*995*	Net Plant ($mill)	*1025*
						5.9%	6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	6.8%	6.0%	6.8%	*5.5%*	*6.5%*	Return on Total Cap'l	*8.0%*
						8.7%	9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	11.0%	9.9%	10.5%	*8.5%*	*10.5%*	Return on Shr. Equity	*12.5%*
						8.7%	9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	11.1%	9.9%	10.6%	*8.5%*	*11.0%*	Return on Com Equity	*12.5%*
						2.4%	3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	5.8%	4.6%	5.4%	*3.5%*	*5.0%*	Retained to Com Eq	*6.0%*
						73%	67%	63%	58%	62%	46%	48%	48%	53%	49%	*62%*	*52%*	All Div'ds to Net Prof	*53%*

CAPITAL STRUCTURE as of 9/30/23
Total Debt $361.7 mill. Due in 5 Yrs $43.7 mill.
LT Debt $354.3 mill. LT Interest $7.5 mill.
(Total interest coverage: 9.3x)
(46% of Cap'l)

Pension Assets-12/22 $84.8 mill.
Oblig. $87.8 mill.
Pfd Stock $2.4 mill. Pfd Div'd: $.1 mill.

Common Stock 17,806,000 shs.
as of 11/9/23

MKET CAP: $1.2 billion (Small Cap)

CURRENT POSITION ($MILL.)

	2021	2022	9/30/23
Cash Assets	3.5	3.8	3.0
Other	30.9	33.5	132.8
Current Assets	34.4	37.3	135.8
Accts Payable	21.1	24.8	28.6
Debt Due	6.7	17.5	7.4
Other	28.8	75.6	85.3
Current Liab.	56.6	117.9	121.3

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	2.5%	1.5%	*4.5%*
"Cash Flow"	8.5%	10.0%	*3.0%*
Earnings	9.5%	11.0%	*5.0%*
Dividends	4.0%	6.5%	*6.5%*
Book Value	6.5%	9.5%	*2.0%*

QUARTERLY REVENUES ($ mill.)

Calendar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	31.8	35.3	39.9	34.6	141.6
2021	32.5	36.7	39.9	34.0	143.1
2022	36.2	39.7	47.7	38.8	162.4
2023	38.2	42.8	46.7	*42.3*	*170*
2024	*42.0*	*43.0*	*52.0*	*43.0*	*180*

EARNINGS PER SHARE A

Calendar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	.44	.55	.72	.47	2.18
2021	.39	.62	.65	.41	2.07
2022	.68	.50	.80	.40	2.39
2023	.33	.55	.56	*.61*	*2.05*
2024	*.50*	*.65*	*.75*	*.65*	*2.55*

QUARTERLY DIVIDENDS PAID B■

Calendar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	1.18
2023	.3125	.3125	.3125	.325	

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 2022, the Middlesex System accounted for 65% of operating revenues. At 12/31/22, the company had 350 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 1.9% of the com. stock; BlackRock Inst. Trust Co., 14.6% (4/23 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tele.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water stock has treaded water since our previous review. Indeed, the equity, which etched an all-time high in late 2021, has contracted more than 40% in value over the past two years or so. After a prolonged period of relatively conservative allocation strategies, the investment community's appetite for riskier assets appears to have shifted somewhat. On balance, based on recent price and earnings momentum, Middlesex shares do not presently stand out for relative year-ahead price performance (Timeliness: 5, Lowest).

We are trimming our 2023 and 2024 bottom-line estimates subsequent to a softer third-quarter showing. The company posted September-period revenues of $47 million, or $3 million shy of our call. Meanwhile, net income of $0.56 per share, which was flat on a sequential basis, came in considerably below consensus expectations. A combination of lower customer demand and higher purchased water costs weighed on results. All told, we are shaving $0.35 and $0.20 per share from our 2023 and 2024 earnings estimates, to $2.05 and $2.55, respectively.

The board of directors recently raised the quarterly dividend payout 4%, to $0.325 per share. The modest annual increase is in line with the company's historical rate of distribution hikes. Moreover, Middlesex's fairly stable secular business model suggests that additional dividend increases are likely in the cards over the long haul.

Better days probably lie ahead. Looking further out, overall water consumption ought to perk up as economic conditions slowly improve. The company should also benefit from additional rate hike approvals. Capital spending on water infrastructure and delivery systems is likely to keep management active in filing for regulator-approved rate increases.

We think patient investors should also hold off, for now. Capital appreciation potential over the pull to late decade, even on a risk-adjusted basis, is nothing to write home about at recent levels. What's more, the current dividend yield is below the *Value Line* median, thus rendering Middlesex shares unenticing as a stand alone, income-generating option.

Nicholas Patrikis *January 5, 2024*

luted earnings. Quarterly figures may not due to rounding. Next earnings report due February.

(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	85
Price Growth Persistence	95
Earnings Predictability	90

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SJW GROUP NYSE-SJW

RECENT PRICE 66.51 | P/E RATIO 21.8 (Trailing: 21.0 / Median: 25.0) | RELATIVE P/E RATIO 1.23 | DIV'D YLD 2.3% | VALUE LINE 1788

TIMELINESS 3 Raised 11/10/23
SAFETY 3 New 4/22/11
TECHNICAL 3 Raised 12/22/23
BETA .85 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$54-$110	$82 (25%)

2026-28 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+45%)	11%
Low	65	(Nil)	2%

Institutional Decisions

	1Q2023	2Q2023	3Q2023
to Buy	94	120	128
to Sell	113	91	85
Hld's(000)	27281	26624	24180

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Target Price Range 2026-2028
High:	26.9	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0	73.7	83.9	83.7							
Low:	22.6	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6	58.0	55.7	57.0							

LEGENDS
42.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

% TOT. RETURN 11/23

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-10.3	1.7
3 yr.	6.6	23.1
5 yr.	29.1	51.6

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	© VALUE LINE PUB. LLC	26-28
	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	19.77	19.01	20.15	20.65	22.10	Revenues per sh	24.15
	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.13	5.28	5.13	5.79	4.50	4.75	"Cash Flow" per sh	5.10
	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	.82	2.14	2.03	2.43	2.95	3.15	Earnings per sh A	3.45
	.61	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	1.28	1.36	1.44	1.52	1.60	Div'd Decl'd per sh B■	1.80
	6.82	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	7.44	8.32	7.85	8.00	8.25	Cap'l Spending per sh	8.75
	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	32.12	34.28	36.06	38.30	41.15	Book Value per sh	44.15
	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	28.56	30.18	30.80	32.00	31.00	Common Shs Outst'g C	30.00
	33.4	25.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	78.8	30.0	32.9	27.3	24.1		Avg Ann'l P/E Ratio	23.0
	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	4.20	1.54	1.78	1.58	1.40		Relative P/E Ratio	1.30
	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	2.0%	2.0%	2.2%	2.1%		Avg Ann'l Div'd Yield	2.3%
							276.9	319.7	305.1	339.7	389.2	397.7	420.5	564.5	573.7	620.7	660	685	Revenues ($mill)	725
							23.5	51.8	37.9	52.8	59.2	38.8	23.4	61.5	60.5	73.8	95.0	98.0	Net Profit ($mill)	105
							38.7%	32.5%	38.1%	38.8%	36.7%	20.6%	26.4%	12.0%	12.2%	10.3%	21.0%	21.0%	Income Tax Rate	21.0%
							--	--	--	--	2.0%	1.0%	2.0%	1.5%	2.0%	6.4%	1.5%	1.5%	AFUDC % to Net Profit	1.5%
							51.1%	51.6%	49.8%	50.7%	46.2%	32.7%	59.1%	58.4%	59.1%	57.3%	55.5%	52.5%	Long-Term Debt Ratio	43.0%
							48.9%	48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	41.6%	40.9%	42.7%	44.5%	47.5%	Common Equity Ratio	57.0%
							656.2	744.5	764.6	855.0	894.3	1320.7	2173.6	2204.7	2527.5	2602.8	2750	2675	Total Capital ($mill)	2325
							898.7	963.0	1036.8	1146.4	1239.3	1328.3	2206.5	2334.9	2497.5	2630.3	2775	2800	Net Plant ($mill)	2925
							5.0%	8.3%	6.3%	7.4%	7.9%	3.9%	1.8%	4.0%	3.5%	4.0%	4.0%	4.0%	Return on Total Cap'l	5.0%
							7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	2.6%	6.7%	5.8%	6.6%	7.5%	7.5%	Return on Shr. Equity	8.0%
							7.3%	14.4%	9.9%	12.5%	12.8%	4.4%	2.6%	6.7%	5.8%	6.6%	7.5%	7.5%	Return on Com Equity	8.0%
							2.8%	10.2%	5.7%	8.6%	8.2%	1.8%	NMF	2.7%	2.0%	2.7%	3.5%	4.0%	Retained to Com Eq	3.5%
							62%	29%	42%	31%	36%	60%	NMF	59%	66%	59%	51%	51%	All Div'ds to Net Prof	52%

CAPITAL STRUCTURE as of 9/30/23
Total Debt $1577.3 mill. Due in 5 Yrs $44.3 mill.
LT Debt $1533.8 mill. LT Interest $50.0 mill.
(LT Interest Coverage: 10.2x)
(57% of Cap'l)

Pension Assets-12/22 $252.0 mill.
Oblig. $289.1 mill.

Pfd Stock None.
Common Stock 31,933,000 shs.

MARKET CAP: $2.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	9/30/23
Cash Assets	10.9	12.3	21.1
Accts Receivable	53.7	58.2	70.4
Other	69.5	84.2	137.3
Current Assets	134.1	154.7	228.8
Accts Payable	30.4	29.6	35.9
Debt Due	39.1	4.4	43.5
Other	133.8	230.7	228.7
Current Liab.	203.3	264.7	308.1

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '20-'22 to '26-'28
Revenues	4.5%	3.0%	3.5%
"Cash Flow"	7.0%	3.0%	1.0%
Earnings	7.5%	-2.0%	8.0%
Dividends	7.0%	9.0%	5.0%
Book Value	9.0%	10.5%	4.5%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
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	171.4	620.7
2023	137.3	156.9	204.8	161.0	660
2024	140	165	215	165	685

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2020	.08	.69	.91	.46	2.14
2021	.09	.69	.64	.60	2.03
2022	.12	.38	.82	1.09	2.43
2023	.37	.58	1.13	.87	2.95
2024	.45	.60	1.20	.90	3.15

Calendar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
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	1.44
2023	.38	.38	.38	.38	

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 757 employees. Officers and directors own less than 1.0% of outstanding shares (3/23 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 closed two acquisitions in Texas during the September period. Subsidiary Texas Water Company finalized the purchase of KT Water Development and KT Water Resources for undisclosed amounts. The former provides diverse water services to residential water connections, while the latter is a water wholesaler that will greatly increase Texas Water Company's available water supply over the next several years.

Third-quarter financial results were solid. SJW Group recorded revenues of $205 million, or a 16% annual advance. The gain was underpinned by recent rate increases and higher customer water usages, particularly amidst the end of the state's conservation requirements. On the earnings front, net income jumped 38%, to $1.13 per share, driven largely by strong top-line gains that more than offset a slight uptick in operating expenses, such as water production costs. As a result, we are raising our 2023 revenue and earnings calls from $640 million and $2.75 per share, to $660 million and $2.95 per share, respectively. We think moderate growth is also in the cards for 2024.

Rate case filings ought to continue in the coming years. Most recently, higher customer rates went into effect in Maine and California. Elsewhere, in October, SJW's subsidiary Connecticut Water Company filed an application with state regulators to amend rates. Filings have also been proposed in Texas. In the meantime, management is not likely to take its foot off the gas, in terms of infrastructure investment spending. In fact, the company plans to invest more than $1.5 billion over the next five years, of which a decent portion is expected to be recouped via additional rate hike approvals.

We are not presently recommending this stock. SJW shares are ranked to move in line with the broader market averages over the coming six to 12 months. Moreover, the current dividend yield is roughly on par with that of the *Value Line* median. On balance, total return potential over the 2026-2028 horizon does not stand out at recent levels. All told, we suggest that subscribers looking for exposure to regulated water utilities have a look elsewhere, for now.

Nicholas Patrikis *January 5, 2024*

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	50

(A) Diluted earnings. Excludes nonrecurring losses: '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.

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	Revenues		956,810.00	956,810.00
	(1) Operation Labor			88,077.26
(1)	414.120 · Salary - Sewer Dept Supervisor	7,506.93		
(1)	414.121 · Salary - Sewer Maint Laborer	31,884.15		
(1)	414.122 · Salary - Financial Accountant	14,391.76		
(1)	414.125 · Salary - Sewer Maint Overtime	10,850.00		
(1)	414.126 · Salary Burden/Benefits	17,750.00		
(2)	414.130 · Training	750.00		
(2)	487.161 · FICA - Social Security	4,007.24		
(2)	487.162 · FICA - Medicare	937.18		
(2)				
(3)	(2) Contract Labor			93,800.00
	429.300 · Auditing Expenses	2,300.00		
(9)	429.310 · Engineer Fees	21,000.00		
(4)	429.320 · Legal Fees	68,000.00		
(4)	429.340 · Legal Advertising & Notices	500.00		
(4)	440.320 · Contracted Services	2,000.00		
	(3) Treatment			148,000.00
(2)	430.100 · NorCo Sewer Authority Fees	148,000.00		
(9)				
(8)	(4) Utilities			22,680.00
(8)	440.060 · Electric	19,230.00		
(1)	440.065 · Telephone	2,600.00		
(1)	440.070 · Water	850.00		
(9)	(5) Miscelaneous			3,600.00
	440.000 · Miscellaneous Expenses	1,850.00		
	440.075 · Vehicle Maintenance (25%)	1,750.00		
	(8) Debt			492,150.00
	470.200 · Principal	355,000.00		
	470.300 · Interest Expense	137,150.00		
	(9) Capital Items			22,300.00
	440.050 · Pump Station Materials Purchase	4,800.00		
	440.374 · Pump Station Repairs	17,000.00		
	489.100 · Equipment Purchase	500.00		
		870,607.26		

Growth Rate

	Year of Estimate	Annual Rate of Growth	First Year of Projection	
	2024	6.00%	2024	
		Translator		
Revenues		1.000		
Revenues	956,810.00	1.000	956,810	0.0%
See Rate Increase Schedule on tab: DCF Investor Owned Cells: L263:BS263				
Customer Growth				
Annual				0.0%
Periodic				0.0%
Population				
4/1/2010-7/1/2019	-3.80%			
Operating Expenses				
Expense Level 1. Operations Labor	88,077.26	1.000	88,077	3.0%
Expense Level 2. Contract Labor	93,800.00	1.000	93,800	-5.0%
Expense Level 3. Treatment	148,000.00	1.000	148,000	3.0%
Expense Level 4. Utilities	22,680.00	1.000	22,680	3.0%
Expense Level 5. Miscellaneous	3,600.00	1.000	3,600	3.0%
Expense Leve 6. Debt	492,150.00	1.000	492,150	3.0%
Expense Level 7. Capital Items	22,300.00	1.000	22,300	3.0%
Expense Level 7. Depreciation	-	1.000	-	Book Depre
Total Expenses	870,607.26		870,607.00	
Expenses less Capital & Debt Items	356,157.26		356,157.00	
Total Operating Expenses Levels 1-7				
Working Capital				
Current Assets				28.0%
Current Liabilities				22.6%

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2020

Appendix A-5.1

	Jan - Sep 19	Oct - Dec 19	Y/E Projection	2019 Budget	2020 Budget
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	540,500.30	201,499.70	742,000.00	742,000.00	798,000.00
364.130 · Application Fees	17,000.00	6,000.00	23,000.00	14,000.00	28,000.00
364.140 · Inspection Fees	3,500.00	6,000.00	9,500.00	7,000.00	6,000.00
364.160 · Sewer Certification Fee	705.00	225.00	930.00	1,000.00	975.00
370.100 · Interest	1,799.39	1,800.00	3,599.39	2,000.00	3,500.00
370.200 · Returned Check Fee	105.00	35.00	140.00	210.00	175.00
Total 364.000 · Sanitation	563,609.69	215,559.70	779,169.39	766,210.00	836,650.00
Total 300.000 · Revenues	563,609.69	215,559.70	779,169.39	766,210.00	836,650.00
358.000 · Miscellaneous	8,148.74	330.00	8,478.74	0.00	6,000.00
Total Income	571,758.43	215,889.70	787,648.13	766,210.00	842,650.00
Gross Profit	571,758.43	215,889.70	787,648.13	766,210.00	842,650.00
Expense					
400.000 · Wastewater Collection & Treatment					
414.120 · Salary - Sewer Dept PW Dir	3,881.25	3,881.25	7,762.50	7,762.50	8,102.50
414.121 · Salary - Sewer Maint Laborer	12,420.00	12,420.00	24,840.00	24,840.00	25,000.00
414.122 · Salary - Financial Accountant	7,500.00	7,500.00	15,000.00	15,000.00	15,750.00
414.125 · Salary - Sewer Maint OT	4,225.00	4,225.00	8,450.00	8,450.00	8,900.00
414.126 · Salary Burden/Benefits	7,775.00	7,775.00	15,550.00	15,550.00	16,120.00
414.130 · Training	65.00	0.00	65.00	750.00	750.00
429.300 · Auditing Expenses	1,000.00	1,000.00	2,000.00	2,000.00	2,100.00
429.310 · Engineer Fees	7,374.75	2,500.00	9,874.75	12,500.00	12,000.00
429.320 · Legal Fees	855.00	1,000.00	1,855.00	4,000.00	3,000.00
429.340 · Legal Advertising & Notices	500.00	0.00	500.00	500.00	500.00
429.350 · Appl/Inspection Fees	250.00	250.00	500.00	500.00	500.00
430.100 · NorCo Sewer Authority Fees	77,519.46	25,000.00	102,519.46	135,000.00	135,000.00
440.000 · Miscellaneous Expenses	1,500.00	0.00	1,500.00	1,500.00	1,700.00
440.050 · Pump Station Materials Purchas	1,294.87	450.00	1,744.87	4,500.00	4,500.00
440.060 · Electric	12,508.98	4,200.00	16,708.98	19,400.00	19,000.00
440.065 · Telephone	1,966.56	655.00	2,621.56	2,400.00	2,750.00
440.070 · Water	485.46	270.00	755.46	750.00	800.00
440.075 · Vehicle Maintenance (25%)	0.00	1,000.00	1,000.00	1,000.00	1,050.00
440.320 · Contracted Services	500.00	0.00	500.00	500.00	500.00
440.374 · Pump Station Repairs	6,426.65	2,200.00	8,626.65	9,000.00	9,000.00
470.200 · Principal	0.00	270,000.00	270,000.00	270,000.00	270,000.00
470.300 · Interest Expense	89,486.25	89,486.25	178,972.50	178,972.50	173,572.50
487.161 · FICA - Social Security	1,478.30	1,996.96	3,475.26	3,475.26	3,580.66
487.162 · FICA - Medicare	406.38	406.08	812.46	812.76	837.41
489.100 · Equipment Purchase	178.96	0.00	178.96	500.00	500.00
Total 400.000 · Wastewater Collection & Tr	239,597.87	436,215.54	675,813.41	719,663.02	715,513.07
Total Expense	239,597.87	436,215.54	675,813.41	719,663.02	715,513.07
Net Income	**332,160.56**	**-220,325.84**	**111,834.72**	**46,546.98**	**127,136.93**
Cash Brought Forward					**305,674.00**
Net Income and Cash Brought Forward					**432,810.93**

East Coventry Twp. Sewer Operating Fund 08 Appendix A-5.1
Final Budget
2021

	Jan 1 - Oct 2020	Nov-Dec 2020	2020 Y/E Proj	2020 Budget	2021 Budget
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	740,113.29	16,586.71	756,700.00	798,000.00	806,600.00
364.130 · Application Fees	11,000.00	5,000.00	16,000.00	28,000.00	2,000.00
364.140 · Inspection Fees	0.00	0.00	0.00	6,000.00	0.00
364.160 · Sewer Certification Fee	915.00	135.00	1,050.00	975.00	1,050.00
370.100 · Interest	4.62	2.00	6.62	3,500.00	150.00
370.200 · Returned Check Fee	0.00	35.00	35.00	175.00	175.00
Total 364.000 · Sanitation	752,032.91	21,758.71	773,791.62	836,650.00	809,975.00
Total 300.000 · Revenues	752,032.91	21,758.71	773,791.62	836,650.00	809,975.00
358.000 · Miscellaneous	0.00	0.00	0.00	6,000.00	500.00
Total Income	752,032.91	21,758.71	773,791.62	842,650.00	810,475.00
Gross Profit	752,032.91	21,758.71	773,791.62	842,650.00	810,475.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	6,076.88	2,025.62	8,102.50	8,102.50	8,500.00
414.121 · Salary - Sewer Maint Laborer	18,750.00	6,250.00	25,000.00	25,000.00	26,000.00
414.122 · Salary - Financial Accountant	11,812.50	3,937.50	15,750.00	15,750.00	16,500.00
414.125 · Salary - Sewer Maint Overtime	6,675.00	2,225.00	8,900.00	8,900.00	9,500.00
414.126 · Salary Burden/Benefits	12,090.00	4,030.00	16,120.00	16,120.00	16,700.00
414.130 · Training	65.00	0.00	65.00	750.00	750.00
429.300 · Auditing Expenses	2,100.00	0.00	2,100.00	2,100.00	2,300.00
429.310 · Engineer Fees	10,559.70	2,000.00	12,559.70	12,000.00	13,000.00
429.320 · Legal Fees	11,205.00	2,000.00	13,205.00	3,000.00	5,000.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
429.350 · Appl/Inspection Fees	0.00	0.00	0.00	500.00	0.00
430.100 · NorCo Sewer Authority Fees	96,248.63	20,000.00	116,248.63	135,000.00	135,000.00
440.000 · Miscellaneous Expenses	1,579.98	150.00	1,729.98	1,700.00	1,850.00
440.050 · Pump Station Materials Purchase	3,528.33	900.00	4,428.33	4,500.00	4,600.00
440.060 · Electric	14,390.45	2,900.00	17,290.45	19,000.00	19,000.00
440.065 · Telephone	1,782.33	400.00	2,182.33	2,750.00	2,500.00
440.070 · Water	527.59	110.00	637.59	800.00	800.00
440.075 · Vehicle Maintenance (25%)	0.00	1,050.00	1,050.00	1,050.00	1,050.00
440.320 · Contracted Services	2,625.00	0.00	2,625.00	500.00	500.00
440.374 · Pump Station Repairs	6,249.99	1,250.00	7,499.99	9,000.00	9,000.00
470.200 · Principal	0.00	270,000.00	270,000.00	270,000.00	280,000.00
470.300 · Interest Expense	86,786.25	86,786.25	173,572.50	173,572.50	168,172.50
487.161 · FICA - Social Security	3,435.07	0.00	3,435.07	3,580.66	-
487.162 · FICA - Medicare	692.56	0.00	692.56	837.41	-
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00
Total 400.000 · Wastewater Collection & Treat	297,180.26	406,014.37	703,194.63	715,513.07	721,722.50
Total Expense	297,180.26	406,014.37	703,194.63	715,513.07	721,722.50
Net Income	**454,852.65**	**-384,255.66**	**70,596.99**	**127,136.93**	**88,752.50**
Cash Brought Forward					**94,950.00**
Net Income and Cash Brought Forward					**183,702.50**

			Jan - Oct 21	Nov-Dec 21	Y/E Proj	2021 Budget	2022 Budget
Income							
	300.000 · Revenues						
		364.000 · Sanitation					
		364.120 · Sewer Use Charge	816,361.95	0.00	816,361.95	806,600.00	825,100.00
		364.130 · Application Fees	2,500.00	0.00	2,500.00	2,000.00	0.00
		364.160 · Sewer Certification Fee	1,140.00	30.00	1,170.00	1,050.00	1,200.00
		370.100 · Interest	78.00	72.00	150.00	150.00	150.00
		370.200 · Returned Check Fee	175.00	35.00	210.00	175.00	210.00
		Total 364.000 · Sanitation	820,254.95	137.00	820,391.95	809,975.00	826,660.00
	Total 300.000 · Revenues		820,254.95			809,975.00	826,660.00
	358.000 · Miscellaneous		0.00	0.00	0.00	500.00	500.00
Total Income			820,254.95	0.00	0.00	810,475.00	827,160.00
Gross Profit			820,254.95	0.00	0.00	810,475.00	827,160.00
Expense							
	400.000 · Wastewater Collection & Treat						
		414.120 · Salary - Sewer Dept Supervisor	4,250.00	4,250.00	8,500.00	8,500.00	7,264.00
		414.121 · Salary - Sewer Maint Laborer	13,000.00	13,000.00	26,000.00	26,000.00	23,225.00
		414.122 · Salary - Financial Accountant	8,250.00	8,250.00	16,500.00	16,500.00	13,500.00
		414.125 · Salary - Sewer Maint Overtime	4,750.00	4,750.00	9,500.00	9,500.00	9,800.00
		414.126 · Salary Burden/Benefits	7,800.00	7,800.00	15,600.00	16,700.00	14,500.00
		414.130 · Training	125.00	0.00	125.00	750.00	750.00
		429.300 · Auditing Expenses	500.00	0.00	500.00	2,300.00	2,300.00
		429.310 · Engineer Fees	14,307.14	1,500.00	15,807.14	13,000.00	13,000.00
		429.320 · Legal Fees	5,186.80	500.00	5,686.80	5,000.00	5,800.00
		429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
		430.100 · NorCo Sewer Authority Fees	106,284.68	33,000.00	139,284.68	135,000.00	142,000.00
		440.000 · Miscellaneous Expenses	1,486.00	300.00	1,786.00	1,850.00	1,850.00
		440.050 · Pump Station Materials Purcha	4,637.17	0.00	4,637.17	4,600.00	4,800.00
		440.060 · Electric	13,597.03	3,900.00	17,497.03	19,000.00	19,000.00
		440.065 · Telephone	1,933.53	600.00	2,533.53	2,500.00	2,600.00
		440.070 · Water	604.71	150.00	754.71	800.00	850.00
		440.075 · Vehicle Maintenance (25%)	158.95	875.00	1,033.95	1,050.00	1,050.00
		440.320 · Contracted Services	1,550.00	0.00	1,550.00	500.00	2,000.00
		440.374 · Pump Station Repairs	13,464.26	0.00	13,464.26	9,000.00	17,000.00
		470.200 · Principal	0.00	280,000.00	280,000.00	280,000.00	285,000.00
		470.300 · Interest Expense	84,086.25	84,086.25	168,172.50	168,172.50	162,572.50
		487.161 · FICA - Social Security	1,939.98	3,334.92	5,274.90	3,751.00	3,334.92
		487.162 · FICA - Medicare	453.71	779.94	1,233.65	877.25	779.94
		489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00
	Total 400.000 · Wastewater Collection & Treat		288,365.21	447,076.11	735,441.32	726,350.75	733,976.36
Total Expense			288,365.21	447,076.11	735,441.32	726,350.75	733,976.36
Net Income			**531,889.74**	**-447,076.11**	**-735,441.32**	**84,124.25**	**93,183.64**
		Cash Brought Forward					**737,674.00**
Total Net Income & Cash Brought Forward							**830,857.64**

East Coventry Twp. Sewer Operating Fund 08
FINAL BUDGET
2024

	Jan - Sep 23	Oct-Dec 23	Y/E Proj 2023	Budget 2023	Budget 2024
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	620,918.60	208,000.00	828,918.60	901,320.00	906,500.00
364.130 · Application Fees	8,000.00	3,000.00	11,000.00	51,500.00	49,000.00
364.160 · Sewer Certification Fee	450.00	150.00	600.00	1,200.00	600.00
370.100 · Interest	0.00	0.00	0.00	150.00	0.00
370.200 · Returned Check Fee	35.00	0.00	35.00	210.00	210.00
Total 364.000 · Sanitation	629,403.60	211,150.00	840,553.60	954,380.00	956,310.00
Total 300.000 · Revenues	629,403.60	211,150.00	840,553.60	954,380.00	956,310.00
368.000 · Miscellaneous	857.00	0.00	857.00	500.00	500.00
Total Income	630,260.60	211,150.00	841,410.60	954,880.00	956,810.00
Gross Profit	630,260.60	211,150.00	841,410.60	954,880.00	956,810.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	3,500.00	3,999.25	7,499.25	7,499.25	7,506.93
414.121 · Salary - Sewer Maint Laborer	15,300.00	15,393.54	30,693.54	30,693.54	31,884.15
414.122 · Salary - Financial Accountant	7,800.00	6,138.75	13,938.75	13,938.75	14,391.76
414.125 · Salary - Sewer Maint Overtime	5,250.00	5,250.00	10,500.00	10,500.00	10,850.00
414.126 · Salary Burden/Benefits	8,650.00	8,650.00	17,300.00	17,300.00	17,750.00
414.130 · Training	0.00	250.00	250.00	750.00	750.00
429.300 · Auditing Expenses	2,000.00	0.00	2,000.00	2,300.00	2,300.00
429.310 · Engineer Fees	15,664.75	4,335.25	20,000.00	20,000.00	21,000.00
429.320 · Legal Fees	49,798.70	16,500.00	66,298.70	8,300.00	68,000.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
430.100 · NorCo Sewer Authority Fees	109,099.42	20,000.00	129,099.42	148,000.00	148,000.00
440.000 · Miscellaneous Expenses	0.00	0.00	0.00	1,850.00	1,850.00
440.050 · Pump Station Materials Purchase	962.71	325.00	1,287.71	4,800.00	4,800.00
440.060 · Electric	13,733.73	4,580.00	18,313.73	19,000.00	19,230.00
440.065 · Telephone	1,761.43	600.00	2,361.43	2,600.00	2,600.00
440.070 · Water	432.52	144.00	576.52	850.00	850.00
440.075 · Vehicle Maintenance (25%)	1,157.97	390.00	1,547.97	1,100.00	1,750.00
440.320 · Contracted Services	527.00	175.00	702.00	2,000.00	2,000.00
440.374 · Pump Station Repairs	11,758.83	4,000.00	15,758.83	17,000.00	17,000.00
470.200 · Principal	0.00	345,000.00	345,000.00	285,000.00	355,000.00
470.300 · Interest Expense	73,750.00	73,750.00	147,500.00	165,000.00	137,150.00
487.161 · FICA - Social Security	2,400.00	1,908.46	4,308.46	3,883.15	4,007.24
487.162 · FICA - Medicare	453.00	446.33	899.33	908.16	937.18
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00
Total 400.000 · Wastewater Collection & Treat	324,000.06	511,635.58	835,835.64	764,272.85	870,607.25
Total Expense	324,000.06	511,635.58	835,835.64	764,272.85	870,607.25
Net Income	306,260.54	-300,685.58	5,574.96	190,607.15	86,202.75
Cash Brought Forward					412,759.00
Net Income and Cash Brought Forward					498,961.75

East Coventry Twp. Sewer Capital Fund 09 Appendix A-5.1
Final Budget
2024

	Jan - Sep 23	Oct-Dec 23	Y/E Proj 23	Budget 23	Budget 24
Ordinary Income/Expense					
Income					
364.110 · Sewage Tapping Fee	13,594.00	13,594.00	27,188.00	700,091.00	13,594.00
370.100 · Interest Income	42,423.29	14,141.00	56,564.29	2,500.00	59,000.00
Total Income	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Gross Profit	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Expense					
450.000 · Capital Expenses	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Total Expense	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Net Ordinary Income	54,643.91	27,275.00	81,918.91	642,091.00	12,594.00
Net Income	**54,643.91**	**27,275.00**	**81,918.91**	**642,091.00**	**12,594.00**
Cash Brought Forward					2,791,072.00
Net Income and Cash Brought Forward					**2,803,666.00**

EAST COVENTRY TOWNSHIP
ENGINEER'S ASSESSMENT
APRIL 2024

PREPARED FOR:

PA AMERICAN WATER
852 WESLEY DRIVE
MECHANICSBURG, PA 17055

EAST COVENTRY TOWNSHIP
855 ELLIS ROAD
POTTSTOWN, PA 19465

PREPARED BY:

Carroll Engineering Corporation
949 EASTON ROAD
WARRINGTON, PA 18976

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APPENDICES

Appendix A – Sewer System Map

Appendix B – System Inventory & Original Costs

Appendix C – Pump Station Inventories

1. INTRODUCTION

Carroll Engineering Corporation (CEC) was contracted by Pennsylvania American Water Company (PAWC) and East Coventry Township (ECT) to prepare an Engineer's Assessment (EA) of all wastewater infrastructure for the purchase of ECT's collection and conveyance systems by PAWC.

The assessment covers facilities and real estate to be purchased by PAWC in the sale of ECT's sanitary sewer system. Assets include the original project costs for the construction of each asset, where available. Since most of the system was constructed around the same time, when the original project costs were not available, CEC estimated the costs based on an average of the prices for the remainder of the system.

ECT's sanitary sewer collection and conveyance system consists of 60,222 feet of 8 to 15-inch diameter gravity sewer, 2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains, five (5) pump stations, and 15,816 feet of 4 to 8-inch diameter force main. Table 1 contains a summary of the original project costs of the entire ECT system and the associated easements by National Association of Regulatory Utility Commissioners (NARUC) account number.

Table 1: Summary of ECT Sewer Infrastructure: Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
Various	Conveyance System	$ 2,787,760.50
361/363	Collection System	$ 6,657,988.97
353	Land & Land Rights	$ 2,353,012.00
Total		$ 11,798,761.47

2. SOURCE DOCUMENTS

CEC used the following documents/sources to complete this study:

- ECT Geographic Information System (GIS)
- Developer's Agreements
- Construction contract payment applications
- Property records obtained from the Chester County Recorder of Deeds
- Chester County GIS (ChescoViews)

3. METHODOLOGY

The assessment was prepared following a review of documentation provided by ECT. CEC was given access to all ECT files and documents.

CEC visited the pump stations to prepare inventories for each station. GIS information, developer's agreements, and construction contract payment applications were relied upon to develop the

quantities and project costs for the collection and conveyance system. The construction of the system started in the mid-2000s. There have not been any major upgrades to any facilities since the original system construction. The system is in good condition.

4. COLLECTION AND CONVEYANCE SYSTEMS

The wastewater system serves the northern portion of the Township, extending from Pigeon Creek and Bickel Run to the border with North Coventry Township.

The majority of the sewer system was constructed under two phases in the mid-2000s. The remainder of the system was built as part of development projects and dedicated to the Township. These phases and the various development projects are shown on the map included in Appendix A.

Flows from the Township are conveyed to North Coventry Township via a single connection from ECT's Pump Station No. 1. Flows are ultimately treated at the North Coventry Municipal Authority Wastewater Treatment Plant.

A detailed inventory of the collection and conveyance systems and original project costs is included in Appendix B.

Conveyance System

The conveyance system consists of five pump stations and 15,816 feet of 4 to 8-inch diameter force mains. Pump Station No. 1 was constructed as part of the Phase 1 sewer system. Phase 2 included Pump Station No. 5. Pump Stations No. 2, 3, and 4 were constructed as part of the Wood Crest, Coventry Glen, and Creek View developments, respectively. CEC visited all five pump stations and prepared detailed inventories of the equipment at each station. These inventories are included in Appendix C.

The pump stations are all in good condition. Appendix B includes a list of pump station assets and original project costs. The original cost information available for each pump station came from Developer's Agreements, and construction contract payment applications. The Agreements and payment applications only included a lump sum for each pump station. In order to separate the costs into the required accounts, we estimated the cost to replace the stations today based on information from sales reps, RS Means, and costs from similar projects, then indexed the costs back to the installation year pricing. For Pump Stations 1 through 4, the estimated costs were higher than the original total costs for the stations and were proportioned down to equal the known total costs. For Pump Station 5, the estimated costs were less than the original total cost and were proportioned up to equal it. These are summarized in Table 2 by NARUC account number.

Table 2: Summary of Conveyance System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
354.3	Structures & Improvements	$ 795,310.00
355.3	Power Generation Equipment	$ 145,578.00
360.1	Collection Sewers - Force	$ 609,828.00
364.3	Flow Measuring Device	$ 37,733.00
371.3	Pumping Equipment	$ 315,824.00
380.4	Chemical Feed System	$ 207,929.00
389.3	Other Plant & Misc. Equipment	$ 675,558.50
Total		$ 2,787,760.50

The pump station and force main locations are shown on the overall system map included in Appendix A.

Collection System

ECT's collection system consists of 60,222 feet of 8 to 12-inch diameter PVC and DIP gravity sewer mains and 2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains. At less than twenty years old, the system is relatively new. It is constructed with modern materials (PVC and DIP) and is in generally excellent condition.

The collection system and original project costs are inventoried in Appendix B. The system has been broken into sewer mains, manholes, and service connections. The inventory and original project costs are summarized in Table 3 by NARUC account number.

Table 3: Summary of Collection System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
361.1	Sewer Mains	$ 5,029,881.07
361.2	Manholes	$ 764,192.40
363	Service Connections	$ 863,915.50
Total		$ 6,657,988.97

5. PROPERTY INVENTORY

CEC and ECT staff assembled a list of property and right-of-way (easement) assets related to the sanitary sewer system. ECT purchased the land Pump Station No. 1 is located on in 1997. All other easements were dedicated to the Township, with the sewers as part of the various developments. Wastewater treatment capacity was granted by an agreement between ECT, North Coventry Township Municipal Authority, and North Coventry Township. The full list is included in

Appendix B. Table 4 contains a summary of the property assets related to the sewer system by NARUC account number.

Table 4: Summary of Collection System Assets and Original Project Costs

NARUC ACCT #	FACILITY DESCRIPTION	ORIGINAL PROJECT COST
353	Land & Land Rights	$ 2,353,012.00
Total		$ 2,353,012.00

APPENDIX A

SEWER SYSTEM MAP

East Coventry Township Sanitary Sewer System

Force Main
Gravity Sewer
Low Pressure
Manhole
Cleanout
Air Release Valve
WWTP
Pump Station

Drainage Area
Coventry Greene
Creek View
Elementary School
Heather Glen
Orchard Ridge
Coventry Glen
Phase 1
Phase 2
Wood Crest
Whispering Woods

1:9,600
0 300 600 1,200 Feet

Lower Pottsgrove Township
Schuylkill River
NCMA WWTP
PS-1
PS-2
PS-3
PS-4
PS-5
New Schuylkill Rd
Old Schuylkill Rd
Fricks Lock Rd
Savage Rd
Peterman Rd
Ellis Woods Rd
Pheasant La
Sanatoga Rd
Meadow La
Saylors Mill Rd
Whispering Woods
Lubold Rd
Tisa La
Springhouse La
Earl Dr
Spring Creek La
S Savanna Dr
E Cedarville Rd
Spiece Rd
Schoolhouse Rd
Harley Rd
Sawmill Rd
Hahnman Rd
S Sanatoga Rd
Pigeon Creek
Bickel Run
Phase 2
ARV 1
ARV 2
ARV 3
ARV 4

W:\GIS\Projects\East Coventry\Maps\Sanitary Sewer System\Sanitary Sewer System.aprx

APPENDIX B

SYSTEM INVENTORY & ORIGINAL COSTS

B1 – Conveyance System

B2 – Collection Sewers – Sanitary Sewer Pipes

B3 – Collection Sewers – Manholes

B4 – Collection Sewers – Sanitary Sewer Service Connections

B5 – Courthouse Records of ECT Owned Land

Appendix B1
East Coventry Township
Conveyance System - Various Accounts
Original Costs

NARUC ACCT #	INSTALLATION YEAR	FACILITY NAME	DESCRIPTION	TOTAL COST
354.3	2004	Pump Station No. 1	Structures	$ 247,284.00
355.3	2004	Pump Station No. 1	Generator	$ 28,326.00
360.1	2004	Pump Station No. 1	Force Main	$ 129,390.00
364.3	2004	Pump Station No. 1	Flow Meter	$ 6,973.00
371.3	2004	Pump Station No. 1	Pumps	$ 74,084.00
380.4	2004	Pump Station No. 1	Chemical Feed System	$ 34,863.00
389.3	2004	Pump Station No. 1	Plant & Misc. Equipment	$ 148,470.00
Pump Station No. 1 Total				$ 669,390.00
354.3	2004	Pump Station No. 2	Structures	$ 102,466.00
355.3	2004	Pump Station No. 2	Generator	$ 18,488.00
360.1	2004	Pump Station No. 2	Force Main	$ 28,800.00
364.3	2004	Pump Station No. 2	Flow Meter	$ 6,471.00
371.3	2004	Pump Station No. 2	Pumps	$ 36,976.00
380.4	2004	Pump Station No. 2	Chemical Feed System	$ 36,976.00
389.3	2004	Pump Station No. 2	Plant & Misc. Equipment	$ 108,623.00
Pump Station No. 2 Total				$ 338,800.00
354.3	2004 [2]	Pump Station No. 3	Structures	$ 127,694.00
355.3	2004 [2]	Pump Station No. 3	Generator	$ 18,895.00
360.1	2004 [1]	Pump Station No. 3	Force Main	$ 97,394.00
364.3	2004 [2]	Pump Station No. 3	Flow Meter	$ 7,086.00
371.3	2004 [2]	Pump Station No. 3	Pumps	$ 37,790.00
380.4	2004 [2]	Pump Station No. 3	Chemical Feed System	$ 37,790.00
389.3	2004 [2]	Pump Station No. 3	Plant & Misc. Equipment	$ 95,745.00
Pump Station No. 3 Total				$ 422,394.00
354.3	2004	Pump Station No. 4	Structures	$ 123,337.00
355.3	2004	Pump Station No. 4	Generator	$ 25,381.00
360.1	2004	Pump Station No. 4	Force Main	$ 268,980.00
364.3	2004	Pump Station No. 4	Flow Meter	$ 5,467.00
371.3	2004	Pump Station No. 4	Pumps	$ 66,381.00
380.4	2004	Pump Station No. 4	Chemical Feed System	$ 31,238.00
389.3	2004	Pump Station No. 4	Plant & Misc. Equipment	$ 93,196.00
Pump Station No. 4 Total				$ 613,980.00

Appendix B1
East Coventry Township
Conveyance System - Various Accounts
Original Costs

NARUC ACCT #	INSTALLATION YEAR	FACILITY NAME	DESCRIPTION	TOTAL COST
354.3	2008	Pump Station No. 5	Structures	$ 194,529.00
355.3	2008	Pump Station No. 5	Generator	$ 54,488.00
360.1	2008	Pump Station No. 5	Force Main	$ 85,264.00
364.3	2008	Pump Station No. 5	Flow Meter	$ 11,736.00
371.3	2008	Pump Station No. 5	Pumps	$ 100,593.00
380.4	2008	Pump Station No. 5	Chemical Feed System	$ 67,062.00
389.3	2008	Pump Station No. 5	Plant & Misc. Equipment	$ 229,524.50
Pump Station No. 5 Total				$ 743,196.50
Pump Stations Grand Total (Various Accounts)				$ 2,787,760.50

Notes:

1. Original project costs are not available. Costs are based on the average unit prices of the force mains for Pump Station Nos. 2 and 4.

2. Original project costs are not available. Since the two stations are nearly identical in design and age, the costs were estimated using the original costs for Pump Stations No. 2 & 4.

Appendix B2
East Coventry Township
Account 361 - Collection Sewers - Sanitary Sewer Pipes
Original Costs

NARUC ACCT #	INSTALLATION YEAR	DESCRIPTION	TYPE OF WORK	SEWER SIZE (IN)	TOTAL LENGTH (LF)	TOTAL COST
361.1	2004	Phase 1	Gravity Sewer	8 - 12	7,322	$ 778,865.00
361.1	2004	Orchard Ridge	Gravity Sewer	8	3,611	$ 133,917.10
361.1	2004	Heather Glen	Gravity Sewer	8	2,750	$ 66,600.00
361.1	2004	Creek View	Gravity Sewer	8	7,695	$ 172,450.00
361.1	2004	Wood Crest	Gravity Sewer	8	2,093	$ 46,046.00
361.1	2004[1]	Coventry Greene	Gravity Sewer	8	1,994	$ 103,688.00
361.1	2008	Phase 2	Gravity Sewer	8 - 10	20,906	$ 2,974,197.97
361.1	2008	Phase 2	Pressure Sewer	1.5 - 3	2,465	$ 75,467.00
361.1	2011[1]	Coventry Glen	Gravity Sewer	8	9,455	$ 491,660.00
361.1	2016	Elementary School	Gravity Sewer	8	2,588	$ 106,670.00
361.1	2017	Whispering Woods	Gravity Sewer	8	1,808	$ 80,320.00
Collecting Sewers - Total (Acct # 361) - Linear Feet					62,687	$ 5,029,881.07
Collecting Sewers - Total (Acct # 361) - Miles					12	

Notes:

1. Original project costs are not available. Cost is estimated using the average unit costs from the other projects identified in this table.

Appendix B3
East Coventry Township
Account 361 - Collection Sewers - Manholes
Original Costs

NARUC ACCT #	INSTALLATION YEAR	DESCRIPTION	TYPE OF WORK	QUANTITY	TOTAL COST
361.2	2004	Phase 1	Manholes	28	$ 65,200.00
361.2	2004	Orchard Ridge	Manholes	18	$ 34,852.40
361.2	2004	Heather Glen	Manholes	15	$ 30,000.00
361.2	2004	Creek View	Manholes	41	$ 82,820.00
361.2	2004	Wood Crest	Manholes	13	$ 26,260.00
361.2	2004[1]	Coventry Greene	Manholes	5	$ 12,395.00
361.2	2008	Phase 2	Manholes	97	$ 313,631.00
361.2	2011[1]	Coventry Glen	Manholes	46	$ 114,034.00
361.2	2016	Elementary School	Manholes	14	$ 44,000.00
361.2	2017	Whispering Woods	Manholes	13	$ 41,000.00
Collecting Sewers - Gravity Total (Acct # 361)				290	$ 764,192.40

Notes:

1. Original project costs are not available. Cost is estimated using the average unit costs from the other projects identified in this table.

Appendix B4
East Coventry Township
Account 363 - Collection Sewers - Sanitary Sewer Service Connections
Original Costs

NARUC ACCT #	INSTALLATION YEAR	DESCRIPTION	TYPE OF WORK	QUANTITY	TOTAL COST
363	2004	Phase 1	Gravity Service Connection	26	$ 9,850.00
363	2004 [1]	Orchard Ridge	Gravity Service Connection	24	$ 20,280.00
363	2004	Heather Glen	Gravity Service Connection	30	$ 25,300.00
363	2004	Creek View	Gravity Service Connection	62	$ 13,950.00
363	2004	Wood Crest	Gravity Service Connection	22	$ 4,950.00
363	2004 [1]	Coventry Greene	Gravity Service Connection	13	$ 10,985.00
363	2008	Phase 2	Gravity Service Connection	179	$ 327,222.50
363	2008	Phase 2	Pressure Sewer Service Connection	21	$ 28,278.00
363	2011 [1]	Coventry Glen	Gravity Service Connection	380	$ 321,100.00
363	2016	Elementary School	Gravity Service Connection	16	$ 12,800.00
363	2017	Whispering Woods	Gravity Service Connection	80	$ 89,200.00
SERVICES TO CUSTOMERS TOTAL (Acct # 363)				853	$ 863,915.50

Notes:

1. Original project costs are not available. Cost is estimated using the average unit costs from the other projects identified in this table.

Appendix B5
East Coventry Township
Courthouse Records of ECT Owned Land and Land Rights
Original Costs

NARUC ACCT #	ITEM #	ROLE	OTHER PARTY	FORM	DESCRIPTION	DATE	CONSIDERATION
353	1	Grantor	Pennsylvania - American Water Company	Easement Agreement	PS #1 Easement	Pending	$ 1.00
353	2	Grantee	Mark & Abby Meyers	Easement Agreement	PS #2 Easement	2019-01-05	$ 1.00
353	3	Grantee	Coventry Glen Community Association	Easement Agreement	PS #3 Easement	2019-07-13	$ 1.00
353	4	Grantee	Heritage - Creekview, LP	Deed of Dedication	PS #4 Parcel	2007-04-05	$ -
353	5	Grantee	Walter & Jeanette Leuchak	Deed	PS #5 Parcel	2007-05-22	$ 1.00
353	6	Grantee	Frederick W & Barbara A Martin	Easement Agreement	Sanitary Sewer Easement	2007-05-03	$ 1.00
353	7	Grantee	Douglas & Charlotte McLean	Easement Agreement	Sanitary Sewer Easement	2007-02-05	$ 1.00
353	8	Grantee	Gabriel A & Michele Serbin	Easement Agreement	Sanitary Sewer Easement	2007-05-03	$ 1.00
353	9	Assignee	Heritage Building Group, Inc. & Orchard Ridge Apartments, LP	Assignment of Easement	Sanitary Sewer Easement	2007-07-25	$ 1.00
353	10	Assignee	Heritage Building Group, Inc.	Assignment of Easement	Sanitary Sewer Easement	2007-07-30	$ 1.00
353	11	Assignee	Heritage Building Group, Inc.	Assignment of Easement	Sanitary Sewer Easement	2007-10-16	$ 1.00
353	12	Grantee	Orchard Ridge Apartments, LP	Deed of Dedication	Sanitary Sewer Easement	2006-11-21	$ 1.00
353	13	Grantee	Owen J Roberts School District	Easement Agreement	Sanitary Sewer Easement	2022-02-23	$ -
353	14	Grantee	Heritage-Coventry Greene, LP	Deed of Dedication	Sanitary Sewer Easement	2005-12-15	$ -
353	15	Grantee	Heritage-Creekview, LP	Easement Agreement	Sanitary Sewer Easement	2007-04-05	$ 1.00
353	16	Party	North Coventry Municipal Authority, North Coventry Township	Agreement	Wastewater Capacity Rights	2004-01-27	$ 2,353,000.00
TOTAL COST (Land and Land Rights Acct # 353)							$ 2,353,012.00

APPENDIX C

PUMP STATION INVENTORIES

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Three (3) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5433V	
	Pump Serial Nos.	1050285-0, 1050285-1, 1050285-2	
	Type	Submersible	
	Pump GPM	600	
	Pump TDH Ft.	133'	
	Pump Size	4 inch	
	Motor HP	50	
	Motor Voltage	480/3/60	
	Wet Well Size	14' Diameter	Outer Diameter
	Hatchway	Three (3) 30" x 48" Hatches	
	Hatchway	One (1) 24" x 24" Hatch	
371.3	**VFD**	Three (3) VFDS	6-pulse, each in NEMA 1 enclosure
	Manufacturer	Saftronics	
	Model No.	FD4050-000	
	HP	50	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Triplex, constant speed pump controller in a NEMA 12 enclosure
	Model No.	86303	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC35.40	
	Transducer Serial No.	405405-01	
	Floats Manufacturer	Pumpak	5 Anchor float with 30' cord SS cable for float mounting
389.3	**GRINDER**		
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	100504-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	100504-3-1	
	Hydraulic Power Pack	HPU7355A	
	Serial No.	D13T63	

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
364.3	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	65015516000	
	Size	8"	
	Circular Chart Recorder Manu./Model	Endress & Hauser, Model RSC1 (392)	
360.1	**VALVES**		
	Valve Vault Size	10' x 16'	
	Valve Vault Hatchway	One (1) 36" x 36"	
	Type	Five (5) 8" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Three (3) 8" Air Cushioned Check Valves	
	Manufacturer	GA Industries	
	Type	Four (4) Pressure Guages	
	Manufacturer/Serial No.	Onyx Valve Co./11186	
	Type	2" PVC Ball Valve	Sump Pump Discharge
	Manufacturer/Model No.	Hayward/LB138	
389.3	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
354.3	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler - Hammer/YS2036	3 Phase/480 V
355.3	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGDK-5672618	
	Serial No.	E040645103	
	Generator KW	125 kW	
	Engine Model No./Serial No.	6BTA5.9G3/46395258	
	Fuel Tank (Gals)	336	
	ATS Manufacturer	Cummins	
	ATS Model No.	OTPC	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	
	Model No.	D18	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	004-303374-265	
	Serial No.	802577-01.	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Motorized Damper & Insect Screen
	Type	Damper Actuator	
	Manufacturer	Siemens GGD Series	
	Model No.	GGD221.1U/BR	
	Type	Fast Acting, Two Position Actuator	
	Manufacturer	Honeywell	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
380.4	**BIOXIDE CHEMICAL FEED SYSTEM**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550. Gallon HDXLPE Tank	4' Diameter, 6.5' High, Stock No. 1000540
	Chemical Storage Tank Model No.	V-04-03384	
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	22'4" x 16'	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length	8'/289'10"	
	Paving and Walkways	Paved Driveway	
389.3	**CRANE/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	Serial No.	5004-25512	
389.3	**MISCELLANEOUS**		
	Field Conversion Kit (Man./Model No.)	Chromalox/PF491-2	
	Water Pressure Tank (Man./Model No.)	Well-X-Troll/WX-202	
	Emergency Eye Wash Station (Man./Model No.)	Porta Stream/Model 20000/330097	
	Sump Pump (Valve Vault)		
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Sump pump located in the valve vault was rusted.
Some rust of the the pipe and fittings/valves in the valve vault.
Pump Station Site and Control Building in good condition.
A lot of insects in bathroom and chemical feed room
Pump Station is served by well water

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5431MT	
	Pump Serial Nos.	1145425-0, 1145425-1	
	Type	Submersible	
	Pump GPM	50	
	Pump TDH Ft.	42'	
	Pump Size	2"	
	Motor HP	3	
	Motor Voltage	480/3/60	
	Wet Well Size	6' Diameter	Inner Diameter
	Hatchway	42" x 54"	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Duplex, constant speed pump controller in a NEMA 12 enclosure
	Model/Serial Number	86303	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504326-01	
	Floats Manufacturer	Pumpak	5 Anchor float with 30' cord and SS cable for float mounting
389.3	**GRINDER**		
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	101124-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101124-3-1	
	Hydraulic Power Pack	HPU7355A	
	Serial No.	M20T87	
364.3	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	6C028A16000	
	Size	3"	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360.1	**VALVES**		
	Valve Vault Size	6' x 9'	
	Valve Vault Hatchway	36" x 36"	

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Type	Four (4) 3" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Two (2) 3" Air Cushioned Check Valves	
	Manufacturer/Model No.	GA Industries/ 7032	
	Type	Two (2) Air Release Valves	
	Manufacturer/Serial No.	Crispin Valves/ 10078066	
	Type	Two (2) 2" SS ball Valves	
	Manufacturer/Model No.	Merit/V210FP-32	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
389.3	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
354.3	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler-Hammer/PRL-2A	3 Phase/480 V
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48D11S15N	
	Serial No.	J05D11332	
354.3	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGGD-5708962	
	Serial No.	D050766728	
	Generator KW	35 kW	
	Fuel Tank (Gals)	145	Model No./Serial No: CPG 0159-1484/634,139
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECA - 5709584	
	ATS Serial No.	C050759549	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Manufacturer	Penn Barry	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer	Penn Ventilation	
	Model No.	D10	
	Serial No.	CCWTH/F00711	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	LUH	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Motorized Damper & Insect Screen
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4309F1005	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
380.4	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 7' High/Stock No. 1000540
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	16' x 22'4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/211 LF/16.5 LF	
	Paving and Walkways	Paved Driveway	
389.3	**CRANE/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
389.3	**MISCELLANEOUS**		
	Emergency Eye Wash Station	Bradley	
	Sump Pump (Valve Vault) Model No.	SPX50M2	0.5 HP
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Sump pump located in the valve vault was rusted.
Some rust on the the pipe and fittings/valves in the valve vault.
Pump Station Site and Control Building in good condition.
Pump Station is served by public water system

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5432MVK	
	Pump Serial Nos.	1174038-0, 1174038-1	
	Type	Submersible	
	Pump GPM	285 GPM	
	Pump TDH Ft.	55' TDH	
	Pump Size	4 inch	
	Motor HP	10	
	Motor Voltage	480/3/60	
	Wet Well Size	8' Diameter	
	Hatchway	42" x 60"	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	
	Model/Serial Number	86303-B	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504327-01	
	Floats Manufacturer	Anchor Scientific	
389.3	**GRINDER**		
	Manufacuturer/Model	Muffin Monster/30005-008-DI	
	Serial No.	101521-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101521-2-1	
	Hydraulic Power Pack	HPU7355A	
364.3	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	50097090	
	Size	6"	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360.1	**VALVES**		
	Valve Vault Size	13' x 6'	
	Valve Vault Hatchway	36" x 36"	
	Type	Four (4) 6" Plug Valves	

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Two (2) 6" Air Cushioned Check Valves	
	Manufacturer	GA Industries	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
	Type	2" PVC Ball Valve	Sump Pump Discharge
	Manufacturer/Model No.	Hayward/LB138	
389.3	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
354.3	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler-Hammer/PRL-2A	3 Phase/480 V
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48D11S15N	
	Serial No.	J05B12719	
355.3	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGGD-5708979	
	Serial No.	C050765062	
	Generator KW	35 kW	
	Fuel Tank (Gals)	145	Model No./Serial No.: CPG 0159-1484/634,137
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECA - 5707835	
	ATS Serial No.	C050757761	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	
	Model No.	D10	
	Serial No.	CCW TH/F00710	
	Type	Electric Heater	Control/Generator Room

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer	Chromalox	
	Model No.	LUH	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Motorized Damper & Insect Screen
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4309F1005	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
380.4	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 6'7" High
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	16'" x 22'4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/285.5 LF/16 LF	

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Paving and Walkways	Paved Driveway	
389.3	**CRANE/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	Self Retracting Lifeline	Miller/LB384	
389.3	**MISCELLANEOUS**		
	Emergency Eye Wash Station	Bradley	
	Spare Pump	Fairbank Morse/ 1174038-0	
	Sump Pump Model No.	SPX50142	
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Pump Station served by public water system

Minimial rust in valve vault. Valve Vault and pipe in good condition

Pump Station Site and Control Building in good condition

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5435MV	
	Pump Serial Nos.	1224441-0, 1224441-1	
	Type	Submersible	
	Pump GPM	225	
	Pump TDH Ft.	148'	
	Pump Size	4 inch	
	Motor HP	40	
	Motor Voltage	480/3/60	
371.3	**PUMPS**	Two (2) Pumps	4 spare impellers
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5435WD	
	Pump Serial No.	1224425-0, 1224425-1	
	Type	Dry Pit Submersible	
	Pump GPM	225	
	Pump TDH Ft.	148'	
	Pump Size	4 inch	
	Motor HP	40	
	Motor Voltage	480/3/60	
	Pump Control	Simplex Control Panel	3 hydromatic float switches
	Wet Well	8' Diameter	
	Wet Well Hatchway	36" x 72"	
371.3	**VFD**	Two (2) VFDS	18-pulse in NEMA 1 enclosure
	Manufacturer	Saftronics	
	Model No.	HR104100	
	HP	100	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Duplex, variable speed transducer based control system in NEMA 12 enclosure
	Model/Serial Number	86303-B	Capable of controlling all 4 pumps. Panel No. 50323
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504328-01	
	Floats Manufacturer		5 Anchor float with 30' cord and 20' of SS cable for float mounting

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
389.3	**GRINDER**		
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	101799-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101799-3-1	
	Hydraulic Power Pack	HPU7355A	
364.3	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	50097090	
	Size	4"	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360.1	**VALVES**		
	Valve Vault	8' x 13'	
	Valve Vault Hatchway	Three (3) 36" x 36"	
	Type	Four (4) 4" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Two (2) 4" Air Cushioned Check Valve	
	Manufacturer/Model No.	GA Industries/250-DSL	
	Type	Spring Loaded Elbow Surge Relief Valve	
	Manufacturer	GA Industries	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
389.3	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
354.3	**ELECTRICAL**	Eaton Cutler - Hammer	
	Circuit Breaker	Eaton Cutler-Hammer/PRL3A	3 Phase/480 V
	Panelboard	Eaton Cutler - Hammer/YS2036	
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48M11S15N	
	Serial No.	J05G11887	
	Heavy Duty Limit Switch	Micro Switch	
	Model No./Serial No.	B/DPDT/LSV7L/LSG7L	

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
355.3	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGDK-5713212	
	Serial No.	E050781651	
	Generator KW	125 kW	
	Fuel Tank (Gals)	366	CPG 0159-1473/634361
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECB-5713246	
	ATS Serial No.	E050782837	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	
	Model No.	D10	
	Serial No.	F01389	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	004-303374-266	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Motorized Damper & Insect Screen
	Type	Actuator	
	Manufacturer	Siemens/GGD221.1U/BR	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
380.4	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 7' High, Stock No. 1000540
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	16' x 22' 4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/278 LF/18 LF	
	Paving and Walkways	Paved Driveway	
389.3	**CRANE/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
389.3	**MISCELLANEOUS**		
	Emergency Eye Washing Station		
	Sump Pump (Valve Vault)		
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Minor rust on dry well and sump pumps.

Valve Vault, Pump Station Site and Control Building in Good Condition

Pump Station served by public water system.

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	KSB	
	Pump Model No.	KRTF 100-316/164XG	
	Pump Serial Nos.	879730, 880754	
	Type	Submersible	
	Pump GPM	120	
	Pump TDH Ft.	118'	
	Pump Size	4 inch	
	Motor HP	20	
	Motor Voltage	460/3/60	
	Wet Well Size	7' x 7'	
	Hatchway	26" x 56", Two (2) 42" x 32" Hatches	
371.3	**CONTROL PANEL**		
	Manufacturer	Sigma Controls	
	Model	Myriad DPC	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	6100RP-007-1-DS-So-SB-WC30-50	
	Floats Manufacturer	Sigma 100 Series	
389.3	**GRINDER**		
	Manufacturer/Model	Muffin Monster/30005-008-DI	
	Serial No.	103961-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	103961-3-1	
	Hydraulic Power Pack	HPP 10504	
364.3	**FLOW METER**		
	Manufacturer	Endress & Hauser	
	Model	Promag 50	
	Serial No.	9505CC16000	
	Size	4"	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360.1	**VALVES**		
	Valve Vault Size	6' x 10'4"	
	Valve Vault Hatchway	Two (2) 33" x 33"	
	Type	Four (4) 4" Plug Valves	
	Manufacturer		

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Type	Two (2) 4" Swing Check Valves	
	Manufacturer		
	Type	Three (3) Pressure Gauges	
	Manufacturer	Onyx Valve Co.	
389.3	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
354.3	**ELECTRICAL**		
	Panelboard	Square D/12247497130060000	
	Shielded General Purpose Transformer	Hevi-Duty/ES5HB25S	
355.3	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	125DSHAE-7019	
	Serial No.	H070100297 C	
	Generator KW	125	
	Fuel Tank (Gals)	366	CPG 0159-1473/655522
	ATS Manufacturer	ASCO	
	ATS Model No.	J7ACTSA30260 N58F	
	ATS Serial No.	411637 RE	
354.3	**HVAC**		
	Type	Unit Heater	
	Manufacturer	Qmark	
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4120F 1006	
	Type	Fan Forced Wall Heater	
	Manufacturer/Model No.	Harley/CZ1512TB	
	Type	Wet Well Exhaust Fan	
	Manufacturer/Model No.	Loren Cook Co./120 CVR S	
	Serial No.	076S981448-00/0000701	
	Louver (Chemical Feed System)	16"x16"	
	Louver (Pump Station)	56" x 56"	
	Louver (Generator Exhaust)	64" x 56"	
380.4	**Bioxide Chemical Feed System**		
	Manufacturer	Siemens Water Technologies	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 6'7" High

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diameter	1"	
	HP	0.34	
	Pump GPD	19	
	Flow Meter	Milltronics/7ML1034-1AA11/PBD/V0090114.	
354.3	**BUILDING**		
	Size	16' x 22' 4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/275.67 LF/20 LF	
	Paving and Walkways	Paved Driveway	
389.3	**CRANE/HOIST**		
	Manufacturer	Halliday products	
	Model	D2B/117130627-5	
389.3	**MISCELLANEOUS**		
	Emergency Eye Wash and Shower Station		
	Water Pressure Tank	Amtrol/CH10050	
	Electric Mini Tank Water Heater	Ariston/GL4/030308	
	MDP TVSS Unit	Service Track ST	
	Two (2) Bypass Connections in VV		

OVERALL BUILDING AND FACILITY ASSESSMENT

Valve Vault Piping Exterior Coating Chipped and Rusted

Pump Station Site and Control Building in Good Condition

Pump Station served by well water

ASSET PURCHASE AGREEMENT

By and Among

Township of East Coventry, Chester County

As Seller

and

Pennsylvania-American Water Company

As Buyer

Dated as of February 7, 2024

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ASSET PURCHASE AGREEMENT

THIS ASSET PURCHASE AGREEMENT (this "Agreement"), dated as of February 7, 2024 (the "Effective Date"), is made and entered into by and between the Township of East Coventry, Chester County, a body corporate and politic, organized under the Pennsylvania law, (the "Seller" or the "Township"), and Pennsylvania-American Water Company, (the "Buyer"), a Pennsylvania corporation.

WITNESSETH:

WHEREAS, Seller, acting by and through the Board of Supervisors of East Coventry Township, Chester County (the "Municipal Board") owns and operates a sanitary wastewater collection and conveyance system (the "System") that provides sanitary wastewater service to various customers in East Coventry Township (the "Service Area"); and

WHEREAS, Buyer is, or as of the Closing Date will be, a regulated public utility that furnishes wastewater service to the public in Pennsylvania; and

WHEREAS, Buyer, in reliance upon the representations, warranties and covenants of the Seller herein, desires to purchase and acquire from the Seller, and the 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 the Seller related to such acquired assets, all on the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the foregoing and of the mutual representations, warranties, covenants, and agreements contained in this Agreement, the receipt and sufficiency of which 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 in this Agreement), have the meanings specified in this Article I:

"**Abstractor**" has the meaning specified in Section 6.05(a).

"**Accounts Receivables**" means all accounts or notes receivable held by Seller, and any security, claim, remedy or other right related to the foregoing, including the right to receive and collect payment for sanitary wastewater customer services and to receive and hold customer deposits in connection thereof.

"**Acquired Assets**" has the meaning specified in Section 2.01.

"**Act 537**" has the meaning specified in Section 7.10.

"**Act 537 Plan**" has the meaning specified in Section 7.10.

"**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 include, 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 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 specified 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.

"**Allocation Schedule**" has the meaning specified in Section 3.03.

"**Assigned Contracts**" has the meaning specified in Section 4.13 and includes the Municipal Agreements.

"**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 the Seller that primarily relate directly or indirectly to the operation of the System, including those set forth on Schedule 4.12.

"**Business Day**" means any day that is neither a Saturday, a 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 Parties**" 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.

"**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 such 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.

"Deposit" has the meaning specified in Section 3.01(a)(i).

"**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, in each case, 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).

"**EDU**" means the equivalent dwelling unit that also equates to 262.5 gallons per day.

"**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 or liability pursuant to 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 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 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 foregoing, 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 2022b 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 the Seller (including all leases of such property), which are primarily used in the operation of the System, (ii) any rights of the 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 on Schedule 4.10.

"**Escrow Agreement**" has the meaning set forth in Section 3.01(c).

"**Excluded Assets**" has the meaning specified in Section 2.02.

"**Excluded Liability**" or "**Excluded Liabilities**" means all liabilities other than Assumed Liabilities.

"**Files and Records**" means all files and records of the Seller primarily 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, and contracts 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, computer software, and records, 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, re-argument, reconsideration, clarification, rescission, amendment, or supersedes 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 Pennsylvania 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 Municipal Board.

"**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 Requirements or which is classified as hazardous or toxic under applicable Environmental Requirements (including gasoline, diesel fuel or other petroleum hydrocarbons, polychlorinated biphenyls, asbestos and urea formaldehyde foam insulation).

"**Indemnified Party**" means any Buyer Indemnified Parties or Seller Indemnified Parties, as applicable, entitled to indemnification pursuant to Article VIII.

"**Indemnifying Party**" means a Party which is obligated to indemnify the Buyer Indemnified Parties or the Seller Indemnified Parties, as applicable, pursuant to Article VIII.

"**Knowledge**" means either (i) the actual knowledge of a Representative of Buyer and the knowledge that 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 Senior Staff, the Municipal Board, and in the case of Senior Staff, the knowledge that each 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; except that "**Losses**" do 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 (other than Seller or the Municipal Board) 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 will be deemed, either alone or in combination, to constitute or contribute to a Material Adverse Effect: (i) general economic conditions or changes therein; (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 the Buyer has Knowledge on 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 by this Agreement; and (vi) negligence, intentional misconduct or bad faith of the Buyer or its Representatives.

"**Missing Easements**" means, as of any particular date, each Easement that either (a) has not been expressly obtained through a duly executed and recorded instrument by the Seller and is for or used in connection with the operation of the System or (b) if such Easement has been obtained by the Seller, such Easement is unrecorded or such Easement is not sufficient to operate the System as currently conducted.

"**Municipal Agreements**" means, collectively, the inter-municipal agreements pursuant to which the Seller provides sanitary wastewater service in various municipalities in Chester County, Pennsylvania, as more specifically set forth in Schedule 4.13.

"**Municipal Board**" has the meaning set forth in the recitals to this Agreement.

"Municipal Code" has the meaning set forth in Section 7.13.

"**Objection Notice**" has the meaning set forth in Section 6.02(a).

"**Outside Date**" means the date that is the later to occur of (i) 365 days after the date the application to the PaPUC is accepted as complete by the PaPUC, (ii) 365 days after the date the statutory 6-month consideration period is initiated pursuant to 66 Pa. C.S. §1329, and (iii) 545 days after the Effective Date provided, that if there is litigation pending on such date in which any Person seeks to prevent the consummation of the transaction described in this Agreement, or to frustrate a material term contained in this Agreement (specifically including, without limitation, litigation involving the proceedings before the PaPUC as contemplated in this Agreement), the Outside Dare will be extended to the date that is sixty (60) days following the unappealable resolution of such litigation.

"**Outstanding Indebtedness**" means the following outstanding indebtedness of the Seller: Delaware Valley Regional Finance Authority General Obligation Note Series of 2020.

"**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 the Seller and the term "Parties" means together the Buyer and the Seller.

"**PCB Equipment**" means PCB equipment as defined in 40 C.F.R. Part 761.

"**Pending Development Plan**" means any project for the development of real property which is the subject of a subdivision or land development plan that has been submitted to the Seller for approval, or for which the Seller already has granted approval, pursuant to the Pennsylvania Municipal Planning Code, but which has yet to be constructed as of the Effective Date (and as updated before the Closing Date), as provided in Schedule 4.17.

"**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, deed restrictions and other similar encumbrances affecting Real Property and Easements to which Buyer has not raised a Title Objection Item or an Easement Objection Item in Article VI hereof; (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; (d) other imperfections of title or Liens, if any, that have not had, and would not have, a Material Adverse Effect; and (e) any encumbrances set forth in the Title Commitment not identified in the Objection Notice in accordance with the procedures and deadlines prescribed in Section 6.02(a).

"**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.

"**Personnel**" means the employees of the Seller who are primarily employed to operate the System.

"**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 affixed thereto, 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.

"**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 Person, any director (including, in the case of the Seller, any member of the Municipal Board), 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 are 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 DEP Permits**" means the permits listed on Schedule 4.12 issued by PaDEP to Seller with respect to the System, including any revisions or amendments thereto.

"**Seller Fundamental Representations**" has the meaning specified in Section 8.01.

"**Seller Indemnified Parties**" has the meaning specified in Section 8.03.

"Senior Staff" means the Township Manager and the Township Public Works Director.

"**Service Area**" has the meaning specified in the recitals to this Agreement.

"**Supplies**" means all lubricants, spare parts, fuel, chemicals, raw materials, and other supplies and inventory as related to 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 includes the Acquired Assets and excludes the Excluded Assets.

"**System Improvements**" has the meaning specified in Section 7.10(a).

"**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, unemployment, disability, real property, personal property, abandoned or unclaimed 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.

"**Township"** has the meaning specified in the preamble of this Agreement.

"**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 the Seller and the 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 the 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 the Seller), including any of the foregoing in which Seller is entitled to acquire such rights or interests but in all cases other than the Excluded Assets (the foregoing collectively referred to as the "Acquired Assets"), including:

(a) all real property and appurtenant interests necessary for the operation of the System, including without limitation (i) good and marketable fee simple title to the Real Property set forth on Schedule 4.09 hereof, and (ii) all Easements, including without limitation those set forth on Schedule 4.09;

(b) all sanitary wastewater conveyance facilities, including but not limited to the Seller's (i) assets set forth on Schedule 2.01(b), and (ii) 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), generators, manholes, pump stations and other related appurtenances including all rights under Pending Development Plans to have any of the foregoing assets dedicated to Seller, and any billing and collections related assets necessary to own and operate the System;

(c) all contracts, licenses and leases set forth on Schedule 4.13 to which the Seller is a party, including without limitation, all Municipal Agreements, customer service agreements or

applications for service, 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 (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 by Seller;

(g) all Files and Records;

(h) Accounts Receivable arising on or after the Closing Date; and

(i) all Authorizations and Permits of or held by the Seller (to the extent transferrable to Buyer under Law), including all Authorizations and Permits which are environmental permits, the Seller DEP Permits as set forth on Schedule 4.12 hereto and other operating permits and those items set forth on Schedule 4.12 hereto; and

(j) all goodwill of the System.

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION OR WARRANTIES OF ANY KIND WHATSOEVER REGARDING THE VALUE OF ANY OF THE ACQUIRED ASSETS OF THE SYSTEM OR 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 Section 2.01 or any other provision of this Agreement to the contrary, the Acquired Assets do 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 (including any cash whenever received resulting from the payment received by Seller attributable to wastewater service provided to EDU's before the Closing Date) and cash equivalents, including Accounts Receivable accrued before the Closing Date and existing financial security guaranteeing installation of public improvements (including sewer facilities);

(d) all insurance policies of Seller and all rights to applicable claims and proceeds thereunder;

(e) other than to the extent relating to any Assumed Liability, all actions, suit or claim 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 ("MS4") assets and stormwater assets of the Seller (and any related NPDES permits);

(i) all individual customer grinder pumps owned by Seller, if any, installed and used by the customer on private property to convey sewage into the sanitary sewer collection system;

(j) all customer sanitary sewer service laterals located outside of road right-of-way or sewer easement limits on private property and owned by Seller, if any;

(k) certain interests in real estate to be created and or retained by the Township including real property interests that will be subdivided from existing System-related real estate and certain easements with respect to storm water utility and other township access easements; and

(l) the rights which accrue or will accrue to Seller under this Agreement and any related agreement, exhibit or schedule.

Section 2.03. **Sale Free of Liens**

After Buyer fulfills its obligations pursuant to Section 3.01(b), on the Closing Date, the Acquired Assets will be free and clear of all Liens other than Permitted Liens. The Seller shall convey such 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 in the Agreement, or by transfer documents satisfactory in form and substance reasonably acceptable to Buyer and Seller and their counsel in their reasonable discretion. At Closing, Buyer shall cause the Title Company to insure the Real Property, at the Title Company's filed rates, as a good and marketable title, free and clear of all Liens and exceptions to title insurance 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 below (the "Title Policy").

Section 2.04. **Assumption of Liabilities**

(a) On the terms and subject to the conditions set forth in this Agreement and excluding the Excluded Liabilities, Buyer shall assume and agrees to pay, perform and discharge when due any and all liabilities and obligations of the Seller (1) arising under the Seller DEP

Permits (arising from, related to, or based on events or circumstances occurring on or after the Closing Date), and (2) arising out of or relating to the System or the Acquired Assets on or after the Closing, including, without limitation, 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 or conditions that arise on or after the Closing;

(iii) all liabilities and obligations for Taxes relating to the System, its operation, the Acquired Assets and the Assumed Liabilities attributable to the period beginning on the Closing Date; and

(iv) 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").

For the avoidance of doubt, the Parties agree that the Assumed Liabilities do not include any liabilities or obligations arising from or relating to events or circumstances occurring prior to Closing except as the Parties may otherwise agree in writing.

(b) After the Closing, Buyer shall indemnify Seller against its obligations under 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, the Seller shall, upon the request of Buyer, and Buyer shall, upon the request of the 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 hereto), including any Governmental Authority, and such consent, authorization, approval or waiver has not 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, the Seller and the Buyer shall use 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; except that in no event will Buyer be required to pay any consideration therefor. Once such consent, authorization, approval, waiver, release, substitution or amendment is obtained, the 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.

(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 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 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 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 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 set forth on Schedule 4.13 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 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 thereafter constitute and be deemed an Assigned Contract for all purposes hereunder.

(d) If, during the twenty four (24) 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 Schedule 4.13 (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

Section 3.01. Purchase Price

The purchase price for the Acquired Assets is Seven Million Dollars ($7,000,000) (the "Purchase Price") which Buyer shall pay as follows at Closing unless otherwise indicated:

(a) Deposit.

(i) Buyer shall pay One Hundred Thousand Dollars ($100,000) to Seller as a deposit on account of the Purchase Price (the "Deposit") upon the fifth (5^{th}) Business Day following the execution by the Parties of this Agreement; and

(ii) The Deposit shall be used to pay the costs and expenses incurred by the Seller in connection with the implementation of the provisions of this Agreement;

(iii) Once such costs and expenses are paid, Seller shall be free to use the Deposit as it determines in the Seller's sole discretion; and

(iv) In the event that this Agreement is terminated by Seller, the Deposit shall be refundable to the Buyer within ninety (90) days following the effective date of termination per Section 14.01, provided, however, if the Agreement is terminated by Seller pursuant to Section 14.01(c), then Seller shall be permitted to offset against Seller's obligation to refund the Deposit any damages recoverable by Seller per the terms of this Agreement.

(v) In the event that this Agreement is terminated by Buyer, the Deposit shall be retained by the Seller, provided, however, if the Agreement is terminated by Buyer pursuant to Section 14.01(d), then Seller shall be obligated to refund the Deposit to Buyer.

(vi) In the event that this Agreement is terminated by Buyer or Seller pursuant to Section 14.01(b)(ii), then Seller shall be required to refund the Deposit to Buyer.

(b) Outstanding Indebtedness. Upon direction of the Seller, Buyer shall pay all or a portion of the Outstanding Indebtedness which payment shall be a credit against the Purchase Price;

(c) Escrow at Closing. Buyer shall cause to be deposited in escrow pursuant to an escrow agreement substantially in the form attached as Exhibit C and entered into by and among the Seller, the Buyer and the escrow agent party thereto (the "Escrow Agreement") an amount calculated in accordance with Section 6.05(e);

(d) Final Payment. Subject to any adjustment in Purchase Price resulting from the proration procedures specified in Section 3.01(e) below, Buyer shall pay to the Seller at Closing by wire transfer of immediately available funds the balance of the Purchase Price remaining after the payment of the Deposit, the repayment of the Outstanding Indebtedness pursuant to Section 3.01(b), and any escrow as set forth in Section 6.05(e), to one or more accounts that Seller designates and provides to Buyer at least three (3) Business Days before the Closing Date; and

(e) Final Billing. The Buyer is entitled to all customer billings with respect to sanitary wastewater customer services for the period on or after the Closing Effective Time, and the Seller is entitled to all such billings before the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to the extent that a Party collects billings that are attributable to service provided by another 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 Schedule**

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), may, at the option of the Buyer, be allocated among the Acquired Assets in accordance with the allocation reflected in a schedule prepared by Buyer and attached hereto as Schedule 3.03 (the "Allocation Schedule"). In the event Buyer does not opt to prepare a schedule pursuant to the preceding sentence, then within sixty (60) days following the Closing Date, Buyer may 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 Seller's comments to one or more items reflected in the proposed Allocation Schedule within twenty (20) Business Days after delivery of the proposed Allocation Schedule to Seller, and (b) upon receipt of any such written comments from Seller with respect to the proposed Allocation Schedule, Buyer may make such adjustments or revisions to the proposed Allocation Schedule based on Seller's comments as Buyer determines in good faith to be necessary and appropriate, provided further, that Buyer shall have no obligation to make any such adjustments or revisions absent manifest error. The Parties shall adhere to the Allocation Schedule (as finally determined pursuant to this Section 3.03) for all purposes relevant to the calculation of federal or state Taxes,

and will report the transactions contemplated herein in a manner consistent with such Allocation Schedule. Except as required by applicable Law, Buyer and Seller shall not take any position on their respective Tax Returns that is inconsistent with the Allocation Schedule.

Section 3.04. **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"), will be paid by Buyer. The terms hereof shall survive Closing. Seller and Buyer shall cooperate in good faith to prepare the Pennsylvania Form REV-138 (Realty Transfer Tax Statement of Value) setting forth the amount of the Purchase Price that shall be allocated to the Real Property for purposes of calculating Transfer Taxes.

ARTICLE IV.

REPRESENTATIONS AND WARRANTIES OF THE SELLER

The Seller makes only the specified 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, the 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 township of the Second Class of the Commonwealth of Pennsylvania duly organized under the Pennsylvania Second Class Township Code.

Section 4.02. **Power and Authority**

Seller has (i) duly adopted the ordinance(s) authorizing the transactions contemplated by this Agreement, which remain(s) 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 the Seller of its obligations contained in this Agreement. The Seller 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 the Seller and constitutes a valid and legally binding obligation of the Seller, enforceable against the 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 the Seller, the consummation of the transactions contemplated by this Agreement and the performance by the 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 the Seller under (i) any Law or (ii) any agreement, instrument or document to which the 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 the Seller or the performance by the Seller of their respective obligations hereunder.

Section 4.06. **Undisclosed Liabilities**

Except as set forth on Schedule 4.06, there are no liabilities or obligations of Seller, either accrued, absolute, contingent or otherwise, relating to the Acquired Assets, that would be required to be set forth on a balance sheet prepared under generally accepted accounting principles applicable to municipalities, other than liabilities incurred in the ordinary course that could not reasonably be expected to have a Material Adverse Effect. Upon payment of the Purchase Price in accordance with Section 3.01(b), (a) all of the Outstanding Indebtedness shall, without further action, be immediately repaid, extinguished or defeased in full and (b) any security interests granted by Seller to secure its obligations pursuant thereto shall, without further action, be immediately extinguished or terminated at or before the Closing pursuant to the contractual terms applicable to such Outstanding Indebtedness.

Section 4.07. **Absence of Certain Changes or Events**

Except as set forth on Schedule 4.07, since December 31, 2021, there has not been any transaction or occurrence that has resulted or is reasonably likely to result in a Material Adverse Effect and the Seller has operated and maintained the System since December 31, 2021 in the ordinary course.

Section 4.08. **Tax Matters**

Except as set forth on Schedule 4.08 or as would not have a Material Adverse Effect, that (i) the Seller has timely paid all Taxes that may have been or may be due and payable by the 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; (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 for the System, if any, and the amounts withheld have been properly paid over to the appropriate Taxing authorities; and (iv) the Seller has at all

times been exempt from U.S. federal income Tax and from income Taxes imposed by the Commonwealth of Pennsylvania (and its political subdivisions) and by other states (and their respective political subdivisions), and income and revenue produced by or with respect to the System and the Acquired Assets has at all times been excluded from gross income by virtue of the provisions of Section 115(1) of the Code.

Section 4.09. **Real Property and Easements**

Schedule 4.09 identifies all Real Property of Seller and separately identifies all Easements. Except as provided in Schedule 4.09, Seller does not 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. The 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 have 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 property owners over the location of boundaries or potential claims adverse to title.

Section 4.10. **Equipment and Machinery**

Schedule 4.10 sets forth all Equipment and Machinery included in the Acquired Assets. Except as set forth on Schedule 4.10, the Seller has good title, free and clear of all Liens (other than the Permitted Liens and Liens which are released on or before Closing) to such Equipment and Machinery. 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 on Schedule 4.11 or that otherwise could not be expected to have a Material Adverse Effect:

(a) To the Seller's Knowledge, the System as currently operated by the Seller and all operations and activities conducted by the Seller with respect to the System are in compliance in all material respects with all applicable Environmental Requirements.

(b) To the Seller's Knowledge, the 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) Except as has been disclosed to Buyer on Schedule 4.11, the 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) To Seller's Knowledge, Hazardous Materials are not present at or on the System, 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 which has not been appropriately resolved pursuant to applicable Environmental Requirements.

(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 except as has been disclosed by the Seller to Buyer on Schedule 4.11.

(f) The Seller has no Knowledge of any underground storage tanks on or at any of the Acquired Assets other than as set forth on Schedule 4.11. To the Seller's Knowledge, any underground storage tanks previously located at the Acquired Assets other than as set forth on Schedule 4.11 have been removed or otherwise closed, plugged and abandoned in compliance with applicable Environmental Requirements in effect at the time of such closure.

(g) The Seller has no Knowledge of any PCB Equipment 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) The Seller has no Knowledge of the existence of any Regulated Asbestos Containing Material 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) The Seller has delivered to Buyer (1) all environmental site assessments, if any, pertaining to the System, that the Seller has Knowledge of; (2) all compliance audits or compliance assurance reviews prepared within the previous five (5) years relating to compliance with Environmental Requirements by the System, and (3) all 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 the Seller.

(j) Except as has been disclosed to Buyer on Schedule 4.11, the Seller has not received notice nor does it have Knowledge of any historic environmental conditions that could give rise to any Environmental Claims related to the System, any Acquired Asset, or the underlying Real Property.

Section 4.12. **Authorizations and Permits**

Except as set forth on Schedule 4.12, Seller possesses all Authorizations and Permits required under the Law, including but not limited to Environmental Requirements to own occupy and operate the System. Schedule 4.12 sets forth the Authorizations and Permits of the Seller as applicable. The Seller has made true and complete copies of all Authorizations and Permits available to Buyer and all such Authorizations and Permits are in full force and effect. Except as set forth on Schedule 4.12, the Seller is in compliance in all material respects with all terms, conditions and requirements of all Authorizations and Permits, and no proceeding is pending or, to the Knowledge of the 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 sets forth a complete and accurate list of all the Assigned Contracts and any amendments thereto.

(b) Except as specifically identified on Schedule 4.13, the Seller have made available to Buyer true and complete copies of all the contracts primarily related to the System, including the foregoing Assigned Contracts.

(c) All of the Assigned Contracts set forth on Schedule 4.13 are in full force and effect. Seller has not, nor to the Knowledge of the 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 the 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) The Seller has operated and is operating the System in compliance, in all material respects, with all Laws, Authorizations and Permits and are not in breach of any Law, Authorization or Permit that would have a Material Adverse Effect on the operations of the System or on the 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 the 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, there is no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, pending nor, to the Knowledge of the Seller, threatened against the Seller before or at the Closing Effective Time, which will have a Material Adverse Effect. There is no action, suit or proceeding, at Law or in equity, or before or by any Governmental Authority, pending nor, to the Knowledge of the Seller, threatened against the 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 has employed PFM Financial Advisors LLC, as municipal advisor to provide transaction structuring advice and to provide Seller with municipal advice relating to the sale of the System. Seller is solely responsible to pay all fees owed to PFM Financial Advisors LLC 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), the Seller has good and marketable title to, valid leasehold interest in or valid licenses or Easements to use, 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 pursuant to an Assigned Contract, if applicable. 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 for which Seller has received notice as of the Effective Date. Each Pending Development Plan, if consummated, could result in additional customers and reduction of available treatment capacity. 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 promptly provide updates to Schedule 4.17 upon the occurrence of any significant change, decision or development and shall further deliver such updates pursuant to Section 9.03.

Section 4.18. **Customer Sewer Laterals and Grinder Pumps**

As of the Closing Date, the Seller will not own, or have any responsibility for: (i) any grinder pumps; (ii) connecting facilities located in the area originating from the collection facilities at the edge-of-road or curb-line when the facilities are located within a public right-of-way or the edge

of an easement where the collection facilities are located within private property to and throughout the customer's property; or (iii) any and all piping and fixtures internal to each individual customer structure (whether residential, commercial, industrial or other customer classes/types).

ARTICLE V.

REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer makes only the representations and warranties that are set forth in this Article V.

As a material inducement to the Seller to enter into this Agreement and to consummate the transactions contemplated hereby, Buyer represents and warrants to the 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 the Buyer and constitutes a valid and legally binding obligation of the 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 the Buyer, the consummation of the transactions contemplated by this Agreement and the performance by the 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 the Buyer under (i) any Law, (ii) any material agreement, instrument or document to which the Buyer is a party or by which it is bound or (iii) the articles, bylaws or governing documents of the 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 by this Agreement 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 to the extent applicable.

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 future profitability or future earnings performance of any Acquired Assets or the System.

Section 5.09. **Scheduled Matters**

Buyer acknowledges that: (a) the inclusion of any matter on any Schedule is not 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 the Seller expressly contained in Article IV of this Agreement.

Section 5.11. **Litigation**

The Buyer is not in breach of any applicable Law that could have a Material Adverse Effect on the operations of the System or the Buyer. Neither the Buyer nor any Affiliate of the 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 the Seller may not do business under applicable 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, there is no action, suit or proceeding, at law or in equity, or before or by any Governmental Authority, pending nor, to the Knowledge of the Buyer, threatened against the Buyer before or at the Closing Effective Time, 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 ESTATE; 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 an owner's policy of title insurance on the American Land Title Association's ("ALTA") Owner's Form 2006 (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"), having an effective date after the Effective Date. 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) below, Buyer shall not be entitled to send an Objection Notice with respect to any parcel of Real Property and the Title Commitment for the same if, within forty five (45) 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 same.

Section 6.02. **Objections to Title**

(a) Notice of Objections. Within forty five (45) days of Buyer's receipt from the Title Company of a 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 any and all exception documents listed in the Title Commitment,

along with Buyer's written notice to Seller of any of the exceptions to title set forth on Schedule B of such Title Commitment to which Buyer objects (the "Title Objection Items") (such written notice of Buyer being referred to as the "Objection Notice"). The Objection Notice shall (a) not contain exceptions that are Permitted Liens, (b) not relate to the Buyer or any requirements, conditions or obligations of the Buyer, (c) not relate to matters of record and set forth in the Title Commitment and unrecorded matters revealed to Buyer in its due diligence or revealed in the survey unless such Title Objection Item materially and adversely in Buyer's commercially reasonable opinion restricts or prevents the use of the Real Property in the current operation of the System, and (d) not contain the standard Title Company exceptions to the extent that such standard Title Company exceptions are commonly removed by the execution and delivery of a standard owner's affidavit by Seller. The Buyer shall 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 same in the Objection Notice. If Buyer provides the Seller with an Objection Notice, the Seller shall use commercially reasonable efforts to have all of the Title Objection Items cured, satisfied or released of record, or insured over, by the Title Company (individually, "Cure" and collectively, "Cured") before or as of the Closing. At or before the Closing, the Seller shall deliver written evidence to Buyer, in form and substance reasonably satisfactory to Buyer, evidencing that Seller has Cured all such Title Objection Items. In the event that Seller is unable to Cure any Title Objection Item per this Section 6.02(a), Seller shall indemnify Buyer for such inability per the terms of Article VIII hereof, provided that Seller's indemnification obligation arising under this Section 6.02(a) shall not be subject to the Threshold Amount nor the Liability Cap set forth in Section 8.05. For avoidance of doubt, Buyer acknowledges that no item listed in clauses (a) through and including (d) above, may be objected to by Buyer as a Title Objection Item.

(b) Liens. Without limiting the Seller's obligations pursuant to Section 6.02(a) above, before or as of the Closing, the Seller shall, at the Seller's 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 the Buyer or any mortgagee of the Buyer to Buyer's Title Policy. If any survey is required or desired by Buyer, its mortgagee or the Title Company, either as a condition to any such endorsement or otherwise, the Buyer shall obtain it at its sole cost and expense. If Buyer obtains a survey of any or all of the Real Property and desires the deed to contain the legal description based on such 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. If necessary, at Closing, Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access such 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 or Real Property interest 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 constitutes an Insurable Claim (as defined below), Buyer shall assert the Insurable Claim and use its commercially reasonable efforts to obtain recovery for such Insurable Claim against the Title Company (which shall include commencing litigation and diligently prosecuting such Insurable Claim to judgment) before pursuing a Claim for Losses under Article VIII. If at any time following a non-favorable judgment 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 the Seller with a Claim for Losses under Article VIII (any such Claim against the Seller following an attempted Insurable Claim against the Title Company being a "Residual Title Claim"). Notwithstanding anything to the contrary in Article VIII, Buyer may assert a Claim for Losses based upon a Residual Title Claim for a sixty (60) day period after the Non-Favorable Judgment. For purposes of this Section 6.02(d), 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 that materially restricts or prevents the use of such Real Property in the operation of the System; and (ii) constitutes a claim against the Title Company under Buyer's Title Policy. Buyer acknowledges that any and all Claims which Buyer could otherwise bring as a breach of a covenant of title under the special warranty deed to the Real Property shall be included within the Claim for Losses under Article VIII and is subject to the terms of this Section 6.02(e).

Section 6.03. **Title Expenses**

Irrespective of whether the transactions described by this Agreement are consummated and Closing occurs, Buyer shall pay all costs and expenses of obtaining the Title Commitment, Title Policy and any survey.

Section 6.04. **UCC Search; Releases**

Not later than one hundred eighty (180) 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 Deeds for any county in Pennsylvania in which Acquired Assets are located (the "UCC Search"). On or before the Closing, Seller shall at its sole cost and expense obtain releases of any and all security interests in any of the Acquired Assets which are not Permitted Liens. The Seller shall provide the form of the releases of such security interests to Buyer on or before the Closing Date.

Section 6.05. **Easements.**

(a) Abstract of Easements. Within sixty (60) days after the Effective Date, the Seller shall, at its sole cost and expense, cause an abstractor selected by the Seller and reasonably acceptable to Buyer and the Title Company (the "Abstractor"), to perform a search of the public land records of any county in which the Acquired Assets are located, based on the Seller's records and plans of the System (and such other sources of information as are reasonably related thereto), by searching the grantee index in the names of the Seller and such other searches as the Abstractor may reasonably make, to (i) identify and provide Buyer with title information on any and all recorded Easements (including information related to any Liens or encumbrances on

Seller's title thereto), and (ii) taking into account any applicable information provided by Buyer, identify all Missing Easements. During the process, as the Abstractor provides written search results to the Seller (including updated versions of the abstractor search result chart), the Seller will promptly provide the same to Buyer for its review, and, without limiting the foregoing, the Seller shall, or shall cause the Abstractor to, provide Buyer with periodic updates, oral or written, on the status of the activities set forth in the previous sentence.

(b) Notice of Objections. Within forty-five (45) days of Buyer's receipt from the Seller (or the Abstractor) of the information specified in subsection (a) above, Buyer shall deliver to Seller written notice identifying the encumbrances on the Easements that, in Buyer's commercially reasonable opinion, could materially and adversely restrict or prevent the use of the Easements in the current operation of the System (the "Easement Objection Items") (such written notice of Buyer being referred to as an "Easement Objection Notice"). The Easement Objection Notice shall not include 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 commercially reasonable opinion, materially and adversely restrict or prevent the use of the Easements in the current operation of the System (specifically including mortgages or other instruments securing indebtedness incurred by the owner of the land burdened by the Easement). If 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 written evidence to Buyer, in form and substance reasonably satisfactory to Buyer, evidencing Seller has Cured all Easement Objection Items. In the event that Seller is unable to Cure any such Easement Objection Item per this Section 6.05(b), Seller shall indemnify Buyer for such inability per the terms of Article VIII hereof, provided that Seller's indemnification obligation arising under this Section 6.05(b) shall not be subject to the Threshold Amount nor the Liability Cap set forth in Section 8.05.

(c) Missing Easements. If during the process of Abstractor's review and investigation of the county land records, either Party determines, based on the Abstractor's investigation, that there is a Missing Easement, the Seller (at its cost and expense) shall take any and all actions (including the use of its power of condemnation) to obtain any such 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. The Seller shall pay for all costs and expenses incurred in connection with obtaining each Missing Easement (including any consideration payable to the landowner in connection with condemnation, in lieu of condemnation or otherwise to obtain Missing Easements). If Seller has not obtained all Missing Easements by the date that is ninety (90) days after the date that Abstractor has completed his review of the County land records and delivered the last results of the same to Seller (the "Abstract Completion Date"), then the Seller (at its cost and expense) shall, as soon as reasonably practicable, commence and file in the Court of Common Pleas, in the county in which the affected property is located, 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 the Seller is considered an Easement. The Seller shall be responsible for the full cost and expense of all condemnation and eminent domain proceedings in obtaining the Missing Easements. The terms of this Section shall survive Closing.

(d) License at Closing. At Closing, Seller shall provide Buyer with a license agreement granting Buyer a license in all of Seller's rights to access such Missing Easement in order to allow Buyer to operate and maintain the System until such time as Buyer is provided title to such Missing Easement as provided for in this Agreement.

(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 the Escrow Agreement, in the form attached as Exhibit C, that will require, among other things, the funding of an escrow account in an amount equal to Two Thousand Dollars ($2,000) multiplied by the total number of 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 the Seller may own interests in or have the legal right to use or occupy the Real Property and/or Easements that are necessary or essential to the operation of the System and that are not set forth 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 give written notice of such discovery to the non-discovering Party. 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, with no adjustment to the Purchase Price, in such a manner as to provide Buyer with reasonable assurances that Buyer will have the right to 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**

Except as provided in this Agreement, 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 Date, and such Taxes shall be treated as Excluded Liabilities for purposes of this Agreement.

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. **Personnel Matters**

Buyer shall not be required to offer employment effective on the Closing Date to any Personnel.

Section 7.04. **Initial and Future Rates**

(a) Rates. After Closing, Buyer shall implement the Seller's sanitary wastewater rates then in effect at Closing, as set forth on Schedule 7.04 ("Base Rates"), as Buyer's effective sanitary wastewater rates, provided that the rates reflected on Schedule 7.04 (at Closing) shall not be lower than those in effect on the date of the Effective Date. Buyer intends to bill on a monthly basis.

(b) PaPUC Approval. The Buyer shall include the rate provisions of Section 7.04(a) in its requested PaPUC Governmental Approval.

Section 7.05. **Buyer Taxpayer**

From and after the Closing Date, Buyer acknowledges that, upon conveyance of the Acquired Assets to Buyer, the Buyer will be subject to, among other Taxes, real estate Taxes, which Buyer shall pay when due but solely to the extent such Taxes are owed for and relating to periods after the Closing.

Section 7.06. **PaPUC Approval**

(a) Promptly after the date the Seller notifies Buyer that Seller has received all consents necessary for the assignment at Closing of that certain agreement among North Coventry Municipal Authority, North Coventry Township and East Coventry Township dated as of January 27, 2004, on terms and conditions that are reasonably acceptable to Buyer, 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, (ii) the approval of the acquisition of the System by Buyer under terms and conditions that are reasonably acceptable to Seller and Buyer, and (iii) the approval of any inter-municipal agreements provided however that prior to Buyer commencing such proceedings, Seller shall file with the PaPUC any petition or application necessary to address extraterritorial service, if any. Seller shall cooperate with and assist Buyer in proceedings before the PaPUC.

(b) The Parties 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 the Seller.

(d) To the extent requested by Buyer, Seller shall participate in any proceedings before the PaPUC as an intervenor and active party, provided that the Seller shall bear the fees and expenses directly related to such intervention. Seller may be represented by the counsel of its choice in any such proceedings.

Section 7.07. **Remedies for Breach of Article VII Agreements**

If Buyer breaches any of the covenants and agreements set forth in this Article VII, 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 7.08. **Operation and Maintenance of MS4 and Stormwater Systems**

Subject to Law, the Seller shall at all times maintain ownership of and responsibility for its MS4 system and stormwater system assets. This provision shall not preclude Seller from transferring its MS4 system and stormwater system assets to another governmental entity, municipal authority or other qualified purchaser at a future time.

Section 7.09. **Pending Development Plans**

(a) Buyer and the Seller acknowledge that from the time of the Effective Date, the Seller shall continue to administer, and perform its duties and responsibilities with respect to the Pending Development Plans set forth on Schedule 4.17. For the avoidance of doubt, after the Closing Date, the Seller shall not seek to collect any EDU or tapping related fees. Following Closing, and for no additional consideration or adjustment to the Purchase Price, Seller shall convey any sanitary sewer system improvements that are dedicated to Seller after Closing pursuant to land development agreements executed prior to Closing in connection with Pending Development Plans.

(b) For Pending Developments Plans pursuant to which public sanitary sewer improvements have not yet been dedicated to the Seller as of Closing but for which a land development agreement exists between the developer and the Seller including terms and requirements for dedication, the Seller shall complete the dedication process with the developer and in turn convey title to the subject sanitary sewer improvements to Buyer. This term shall survive Closing.

(c) Following the Effective Date, Seller shall not enter into any contract with a third party that contemplates the construction of new sanitary wastewater facilities or upgrades to existing facilities, including, without limitation, pumping stations, force mains, manholes, or pipelines for service to future customers related to Pending Development Plans (collectively, "New System Assets") without providing a draft of such contracts to Buyer for its review and approval as to the design and specifications before execution by the parties to such contracts. Buyer shall have fifteen (15) Business Days to review and approve such contracts, and Buyer's failure to object in writing to any terms of such contracts within such fifteen (15) Business Day review period is deemed an approval of the same by Buyer.

Section 7.10. **Act 537 Plan**

(a) Buyer acknowledges that Seller has previously committed to an official plan, commonly known as an Act 537 Plan (the "Act 537 Plan") under the Pennsylvania Sewage Facilities Act ("Act 537"), which has been made available to Buyer. Buyer understands that the Act 537 Plan contains obligations and commitments, as more fully set forth in the Act 537 Plan to complete certain improvements and upgrades to the System (the "System Improvements"). Buyer shall accept and complete all of the System Improvements as Seller agreed to complete

under the existing Act 537 Plan. Prior to agreeing to further obligations pursuant to future amendments to the Act 537 Plan that could reasonably be deemed to affect Buyer, Seller shall provide written notice of such proposed amendment(s), and Buyer and Seller shall negotiate in good faith to resolve any objections Buyer may raise in connection with such proposed amendment(s).

(b) Buyer acknowledges Seller has jurisdiction over sewage facilities planning and sewer service within portions of the System that provide service within the Service Area through the Act 537 Plan and its Act 537 planning program, zoning, subdivision and land development ordinances and comprehensive land use planning policies. Buyer, Seller shall cooperate with respect to current and future sewage facilities planning and sewer service consistent with the provisions of this Section 7.10.

(c) Subject to PaPUC approval of the Service Area as provided in Section 7.06, Buyer shall extend sewer lines and provide sewage collection and treatment services to properties within the Service Area in a manner consistent with the Act 537 Plan and the Buyer's tariff, the Public Utility Code, and the PaPUC's regulations and orders. Seller will confer with Buyer concerning any amendment to the Act 537 Plan that would affect the provision of sewage collection and treatment services within the Service Area. The Seller shall not propose or adopt any amendment to the Act 537 Plan that would reduce the Service Area or divert wastewater flows generated from properties located within the Service Area from being served by the System without the approval of Buyer.

(d) Buyer will not request, pursue, or implement expansions of the System within the Seller beyond the current Service Area (that would trigger an Act 537 Plan amendment) without the prior written approval of Seller (which shall not be unreasonably withheld), the PaDEP and the PaPUC, as applicable. Seller shall promptly notify and confer with Buyer, and consider Buyer's comments, concerning any proposed Act 537 Plan amendment (including any sewage facilities planning module) that would involve the provision of sewage collection and treatment services by the System to area or properties outside of the Service Area. With respect to any such potential Act 537 Plan amendment, Seller and Buyer shall cooperate in evaluating alternatives for provision of sewage services to such areas consistent with the requirements of 25 Pa. Code Ch. 71, including consideration of the technical feasibility, economic feasibility and cost effectiveness, consistency with the objectives and policies of plans and requirements of 25 Pa. Code Ch. 71.21(a)(5), consistency with municipal land use plans and ordinances, subdivision ordinances and other ordinances and plans for controlling land use and development, technically and administratively able to be implemented, and other factors required under Act 537 or under Buyer's tariff, the Public Utility Code, and the PaPUC's regulations and orders.

(e) If Seller and Buyer each determine that the provision of sewage collection and treatment services by the System to certain areas or properties outside of the Service Area is technically feasible, economically feasible and cost effective, and meets all of the requirements set forth in Act 537 and 25 Pa. Code Ch. 71, the Seller shall amend the Act 537 Plan to include such identified areas and properties in the Service Area. If Seller amends the Act 537 Plan pursuant to this subsection and such amendment is approved by PaDEP, (i) Buyer shall request that the modified Service Area be approved by PaPUC; and (ii) subject to PaPUC approval of the

inclusion of such modified Service Area, Buyer shall extend sewer lines and provide sewage collection services to properties within such Service Area in a manner consistent with the Act 537 Plan and Buyer's tariff, the Public Utility Code, and the Pa PUC's regulations and orders.

Section 7.11. **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 7.12. **Compliance and Operational Reports**

After the Effective Date and through the Closing Date, Seller shall provide Buyer with periodic reports at Buyer's request to the person designated by Buyer, disclosing any and all material compliance or operational deficiencies that occurred during the previous month. During the same period, Seller shall also provide Buyer with copies of all reports filed with PaDEP regarding the System, including any discharge monitoring reports, associated supplemental reports, and WETT reports, when available. Seller shall permit Buyer to complete an inspection of the Acquired Assets within twenty (20) days prior to Closing. In the event that such inspection reveals that the working condition of any of the Acquired Assets has materially deteriorated (other than normal wear and tear provided such Acquired Asset continues to function) between the Effective Date and Closing, Seller shall have the obligation of repairing or replacing such Acquired Asset prior to Closing. If Seller fails to comply with its obligations under this Section 7.12, Buyer shall have a claim for indemnification under Article VIII which shall not be subject to the Threshold Amount in Section 8.05(a).

Section 7.13. **Implementation and Enforcement of Municipal Code**

Following the Effective Date and continuing after Closing Date, Seller shall continue to implement and enforce the relevant provisions of the Municipal Code of the Township of East Coventry, as amended (the "Municipal Code"), including, without limitation, enforcement of the Seller's fats, oils, and grease program, lateral inspection program, investigation of illegal connections, and related operations and maintenance programs. Prior to enacting amendments to the Municipal Code that could reasonably be deemed to affect the System or uniquely impact Buyer, Seller shall provide written notice of such proposed amendment(s) and Buyer and Seller shall negotiate in good faith to resolve any objections Buyer may raise in connection with such proposed amendment(s).

Section 7.14. **Covenant Survival**

The covenants in this Article survive Closing.

Section 7.15. **Phase I Environmental Site Assessment**

Following the Effective Date, if requested by Buyer, Seller shall make the System and the Real Property available for Phase I environmental site assessment by Buyer at Buyer's expense and Buyer's Representatives during normal business hours upon reasonable notice.

Section 7.16. **Parker Ford**

Buyer agrees to request approval from the PaPUC to include as part of its normal capital expenditures, the costs to design and construct the wastewater mains and associated equipment to provide wastewater service to the 384 existing properties in the Parker Ford area as provided by Seller's Act 537 Plan. Buyer's obligations with respect to the Parker Ford area shall not include any costs or expenses associated with (i) the installation of lateral lines to connect each property to the wastewater mains; or (ii) the decommissioning or removal of any on-lot septic systems and equipment.

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 the Seller specified in Section 4.01 (Organization), Section 4.02 (Power and Authority), Section 4.03 (Enforceability), Section 4.17 (Brokers' and Finders' Fees) and Section 4.18 (Title to Acquired Assets) (collectively, the "Seller Fundamental Representations") shall survive the Closing indefinitely or until the latest date permitted by applicable Law, (b) the representations and warranties of Seller specified in Section 4.11 (Environmental Compliance) shall survive Closing until the expiration of the applicable statute of limitations (giving effect to any waiver, mitigation or extension thereof), and (c) the representations and warranties of Buyer specified 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 applicable Law. The covenants and agreements of the Parties contained herein shall survive the Closing indefinitely or for the shorter period explicitly specified therein, except that for such covenants and agreements that survive for such shorter period, breaches thereof shall survive indefinitely or until the latest date permitted by applicable Law. Notwithstanding the preceding sentences, (x) any breach of a 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 (A) any rights a Party may have to bring claims grounded in fraud, intentional misrepresentation or willful misconduct, which rights shall survive the Closing indefinitely and (B) Buyer's right to seek indemnification for a claim relating to an Excluded Liability or Excluded Asset, which

rights shall survive the Closing until the expiration of the applicable statute of limitations (giving effect to any waiver, mitigation or extension thereof).

Section 8.02. **Indemnification by the Seller**

To the maximum extent permitted by applicable Law and subject to the terms and conditions of this Article VIII, the Seller shall indemnify, defend and hold harmless: (i) Buyer, (ii) Buyer's successors and Affiliates, and (iii) their respective employees, officers, directors, trustees and agents (collectively, the "Buyer Indemnified Parties"), 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 the Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by the 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 material breach or material nonfulfillment of any of the covenants or agreements of the Seller contained in this Agreement or in any exhibit, schedule, certificate or other instrument or document furnished or to be furnished by the Seller before the Closing pursuant to this Agreement; or (c) any Excluded Liability or Excluded Asset, or (d) the ownership, use, operation or control of any of the Acquired Assets or the System prior to the Closing or any incident, occurrence, condition or claim arising prior to Closing and relating to the ownership, use, operation or control of the System prior to Closing.

Section 8.03. **Indemnification by Buyer**

To the maximum extent permitted by applicable Law and subject to the terms and conditions of this Article VIII, Buyer shall defend, indemnify and hold harmless: (i) the Seller, (ii) the Seller's successors and Affiliates, and (iii) each of their respective employees, officers, directors and agents (collectively, the "Seller Indemnified Parties") 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 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 the 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 Requirements, Hazardous Materials or environmental claims from and after the Closing Date; or (e) the ownership, operation or control of any 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 give the Indemnifying Party prompt written notice thereof. The failure to give such prompt written 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 because of such failure. Such notice by the Indemnified Party shall describe the Third 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 written 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 is 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 shall have the right to 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, 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. The Seller and Buyer shall reasonably and in good faith cooperate with one another 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 give prompt written notice to that effect to 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 written notice thereof. The failure to give such prompt written 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 because 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 the 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 written notice disputing the basis or amount of the Direct Claim, the Indemnifying Party is deemed to have rejected such claim, in which case the Indemnified Party is 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, provided that so long as the Direct Claim has been asserted by the Indemnified Party prior to the expiration of the applicable statute of limitation, the Indemnified Party shall not be barred from pursuing its legal rights and remedies in an appropriate court of jurisdiction by the expiration thereof.

Section 8.05. **Limitations on Indemnification Obligations**

(a) Subject to the other limitations contained in this Section 8.05, neither Buyer nor Buyer Indemnified Parties is entitled to indemnification pursuant to Section 8.02(a) (other than

for an intentional breach of any agreement or covenant contained in this Agreement) unless the aggregate amount of Losses incurred by the Buyer Indemnified Parties under this Agreement exceeds two percent (2%) of the Purchase Price in the aggregate (the "Threshold Amount"), in which case Seller shall then be liable for Losses in excess of the Threshold Amount; except that the foregoing limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification (i) based on fraud, intentional misrepresentation or willful misconduct, (ii) based on any inaccuracy in, misrepresentation as to or breach of any of the Seller Fundamental Representations or any of the representations and warranties set forth in Section 4.11 (Environmental Compliance), or (iii) pursuant to Section 8.02(d).

(b) Subject to the other limitations contained in this Section 8.05 neither Seller nor the Seller Indemnified Parties is entitled to indemnification pursuant to Section 8.03(a) (other than for an intentional breach of any agreement or covenant contained in this Agreement) unless the aggregate amount of Losses incurred by the Seller Indemnified Parties under this Agreement exceeds the Threshold Amount, in which case Buyer shall then be liable for Losses in excess of the Threshold Amount; except that the foregoing limitations contained in this Section 8.05(a) shall not apply to any claims for indemnification based on fraud, intentional misrepresentation or willful misconduct or pursuant to Sections 8.03(c), (d) and (e).

(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 six percent (6%) of the 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, in the case of fraud, intentional misrepresentation or willful misconduct or pursuant to Section 8.02(c) which shall not be subject to the Liability Cap, but is 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 is 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 will 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 3.02, 7.07, 15.11 and any other provisions for equitable relief and/or specific performance, the Parties acknowledge and agree that their 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. In furtherance of the foregoing, each Party 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 hereto 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) limits any Parties' right to seek and obtain any equitable relief and/or specific performance to which any Party is entitled pursuant to this Agreement.

Section 8.06. **Knowledge of Breach**

Seller will not be liable under this Article VIII for any Losses based upon or arising out of any inaccuracy in or breach of any of the representations or warranties of Seller contained in this Agreement if Buyer had Knowledge of such inaccuracy or breach before the Closing Date. Buyer will not be liable under this Article VIII for any Losses based upon or arising out of any inaccuracy in or breach of any of the representations or warranties of Buyer contained in this Agreement if Seller had Knowledge of such inaccuracy or breach before the Closing Date.

ARTICLE IX.

PRE-CLOSING COVENANTS OF THE SELLER

Section 9.01. **Operation of the System**

Except as otherwise expressly permitted by this Agreement, as required by applicable 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, the Seller shall (i) operate and manage the System only in the ordinary course of business in accordance with past practices and procedures, (ii) comply in all material respects with all applicable Laws and Authorizations and Permits, and (iii) use commercially reasonable efforts to maintain and preserve intact the business and assets of the System and preserve the rights, franchises, goodwill and relationships of the Seller, the System and their customers, lenders, suppliers, regulators and others having business relationships with the Seller and the System, including any land development agreements in existence as of the Effective Date, which such agreements shall not be materially amended or terminated without notice to and the consent of Buyer, which consent shall not be unreasonably withheld or delayed.

Section 9.02. **Cooperation**

The Seller shall reasonably cooperate with Buyer and its employees, attorneys, accountants and other agents and, generally, act in reasonably good faith to timely carry out the purposes of this Agreement and the consummation of the transactions contemplated by this Agreement, including

without limitation to effect the following at or before the Closing: (i) the repayment of the Outstanding Indebtedness and the unconditional release of any liens related thereto, and (ii) the acquisition by Seller of the right, title and interest, as applicable, to all Acquired Assets.

Section 9.03. **Supplements and Updates**

The Seller shall promptly deliver to Buyer any supplemental information updating the information set forth in the representations and warranties 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, the Seller shall promptly advise Buyer of any facts of which it has Knowledge which would constitute a breach of a representation or warranty as of the date made or a default in a covenant contained in this Agreement. For the avoidance of doubt, no such supplemental information or facts provided pursuant to this Section 9.03 shall be deemed to alter any Schedules without the prior written consent of Buyer (such consent not to be unreasonably withheld, conditioned or delayed).

Section 9.04. **Governmental Approvals**

Promptly after the execution of this Agreement, or as required by Law, except as provided in Section 7.06 or otherwise expressly provided herein, the Seller shall file all applications and reports that are required to be filed by Seller with any Governmental Authority as provided on Schedule 4.05 to the Buyer. The Seller shall also promptly provide all information that any Governmental Authority may require in connection with any such application or report. The Seller shall use commercially reasonable efforts to obtain all required material consents, waivers, authorizations or approvals of any Governmental Authority, or of any other Person in connection with the transactions contemplated by this Agreement, including as required under any Assigned Contract. All authorizations of any Governmental Authority necessary to consummate the transactions contemplated by this Agreement shall be in form and content reasonably satisfactory to Buyer and the Seller before Closing and must be final and non-appealable. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, the Buyer and the Seller may agree to proceed to consummate the transaction.

ARTICLE X.

PRE-CLOSING COVENANTS OF BUYER

Section 10.01. **Actions Before the Closing Date**

Buyer shall not take any action that will 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 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 of third parties required to be obtained by Buyer to effect the transactions contemplated by this Agreement.

Section 10.02. **Governmental 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 which are required to be filed by Buyer with any Governmental Authority as provided 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. Buyer shall use commercially reasonable efforts to obtain all consents, waivers, authorizations or approvals of any Governmental Authority, or of any other Person necessary to consummate the transactions contemplated by this Agreement.

Section 10.03. **Cooperation**

Buyer shall reasonably cooperate with the Seller and its employees, attorneys, accountants and other agents and, generally, do such other acts and things in good faith as may be reasonable to timely carry out 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 the Seller any supplemental information updating the information set forth in the representations and warranties 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. Following the Effective Date, Buyer shall promptly advise the Seller of any facts of which it has Knowledge which would constitute 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 THE SELLER

The obligation of the 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 the Seller in its sole discretion:

Section 11.01. **Consents and Approvals**

Receipt of all required 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 on 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). Seller shall obtain the consent of any Governmental Authority as required by the PaPUC or applicable Law.

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 shall 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 shall be true and correct in all material respects as of such specified date) and (b) qualified by materiality shall 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 shall be true and correct in all respects as of such specified date), and the Seller shall have received a certificate to the effect of the foregoing 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 the Seller and Buyer. If a party to the PaPUC proceeding appeals or files a petition for reconsideration of the PaPUC authorization of the transaction, the Buyer and Seller may mutually agree to proceed to consummate the transaction.

Section 11.04. **No Injunctions**

Neither Seller nor Buyer shall be 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 shall have performed and been in compliance in all material respects with all obligations and covenants required under this Agreement to be performed by Buyer on or before the Closing Date, and the Seller shall have received a certificate to that effect from Buyer dated the Closing Date.

Section 11.06. **Deliveries by Buyer**

Buyer shall have made delivery to the Seller of the documents and items specified in Section 13.03.

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, non-governmental third party consents and any other approvals necessary or advisable to consummate the transactions contemplated by this Agreement set forth on Schedule 4.05 and all consents, waivers, authorizations and approvals of any Governmental Authority required pursuant to Section 5.04, including without limitation all required EPA and PaDEP approvals/renewals 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 the Outstanding Indebtedness, and (B) discharge of any other outstanding debt issued by the Seller and payable to any current lender which is required to be repaid as a result of the consummation of the transaction contemplated by this Agreement and (ii) application of any related 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).

(c) Delivery of evidence that Seller shall have taken all actions to acquire right, title, and interest, as applicable, to the System which includes the Acquired Assets required to permit Seller to convey the System to Buyer as pursuant to this Agreement; and

(d) Delivery of evidence of the ownership by the Township of the 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 easement where the main is located within private property. Evidence may be established by providing Buyer with a certified copy of an Ordinance adopted by Seller designating ownership.

Section 12.02. **Representations and Warranties of Seller**

The representations and warranties made by the Seller in Article IV of this Agreement (disregarding all "materiality" and "Material Adverse Effect" or similar qualifications contained therein) shall 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 shall 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 the Buyer shall have received a certificate to that effect from the Seller dated as of the Closing Date.

Section 12.03. **PaPUC Approval**

PaPUC must have issued a Final Order authorizing the Buyer to operate as a public utility in the Commonwealth of Pennsylvania and Final Order(s) approving the acquisition of the System under terms and conditions that are reasonably acceptable to the Seller and Buyer. If a party to the PaPUC proceeding appeals PaPUC authorization of the transaction, the Buyer and Seller may agree to proceed to consummate the transaction.

Section 12.04. **No Injunctions**

The Seller and the Buyer are not 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 shall have made delivery to Buyer of the documents and items specified in Section 13.02.

Section 12.07. **Performance of the Obligations of Seller**

Seller shall have performed and been in compliance in all material respects with all obligations and covenants required under this Agreement to be performed by Seller on or before the Closing Date, and Buyer shall have received a certificate to that effect from Seller dated the Closing Date.

Section 12.08. **Phase 1 Environmental Site Assessment**

If applicable under Section 7.15 hereof, a Phase 1 environmental site assessment shall have been properly completed in respect of the System and the Real Property in form and substance acceptable to Buyer.

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 no later than 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 the 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., Township of East Coventry, PA time, on the day after the Closing Date (the "Closing Effective Time").

Section 13.02. **Deliveries by the Seller**

At the Closing, Seller, shall have delivered 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 hereto 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 hereto 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, and one or more assignments in recordable form reasonably acceptable to Buyer with respect to the Easements (exclusive of any Missing Easements);

(f) Copies or originals of all Files and Records, materials, documents and records in possession of the 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 procedures set forth in Article VI;

(j) A duly executed counterpart to the Escrow Agreement, in the form attached hereto as Exhibit C;

(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, duly executed and acknowledged by Seller, if necessary, and in a recordable form;

(k) A form W-9 properly completed by the Seller;

(l) If applicable, simultaneously with Closing, evidence of UCC-3 termination statements filed with the Secretary of State of the Commonwealth of Pennsylvania releasing all liens held in the Acquired Assets by or on behalf of the lender;

(m) If applicable, an executed release, if requested by the Buyer in form and substance acceptable to the Buyer, from any lender with a lien(s) which is not a Permitted Lien on any of the Acquired Assets, confirming the discharge of the Outstanding Indebtedness and release of any and all security interests in such Acquired Asset(s), subject only to the receipt by such lender of the amount to pay off such debt at Closing; and

(n) Copies of the duly adopted ordinance(s) and resolution(s) of the Seller authorizing the transactions contemplated by this Agreement.

Section 13.03. **Deliveries by Buyer**

At the Closing, Buyer shall have delivered or caused to be delivered to the Seller the following agreements, documents and other items:

(a) Payment of the Purchase Price in accordance with Section 3.01 hereof;

(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, by notice given in the manner provided in this Agreement, be terminated and abandoned at any time before completion of the Closing:

(a) By the consent of both of the Seller and the Buyer;

(b) By any of the Seller or the Buyer if:

(i) the Closing shall not have occurred on or before the Outside Date; except that (a) the Outside Date may be automatically extended as set forth in the definition of Outside Date in Article I hereof, and (b) the Buyer shall also have the one-time right to extend the Outside Date for up to one hundred twenty (120) days if, in the Buyer's sole discretion, any such amount of time up to one hundred twenty (120) days is necessary to obtain a required Governmental Approval; or

(ii) any Governmental Authority (other than a municipal authority or Seller), shall have issued an order, decree or ruling or taken any other immediately enforceable 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 will have become final and non-appealable, provided however, that the Party seeking

termination pursuant to this clause (b) of this Section 14.01 is not in breach in any material respect of any of its representations, warranties, covenants or agreements contained in this Agreement;

(c) By the Seller (if Seller is not then in material breach of any provision of this Agreement) in the event of a material breach of any covenant or agreement to be performed or complied with by the Buyer pursuant to the terms of this Agreement or of any representation or warranty of the Buyer contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following written notice thereof by the Seller to the 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 the Seller in writing); or

(d) By the Buyer (if Buyer is not then in material breach of any provision of this Agreement) in the event of a material breach of any covenant or agreement to be performed or complied with by the Seller pursuant to the terms of this Agreement or of any representation or warranty of the Seller contained in this Agreement, which breach (i) has continued without cure for a period of sixty (60) days following written notice thereof by the Buyer to the 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 the Buyer in writing).

This Agreement may not be terminated after completion of the Closing.

Section 14.02. **Effect of Termination**

If this Agreement is terminated by the Seller or the Buyer pursuant to Section 14.01, written notice thereof will forthwith be given to the other and all further obligations of the Parties under this Agreement will terminate without further action by any Party and without liability or other obligation of any Party to any other Party hereunder; except that no Party will be released from liability hereunder if this Agreement is terminated and the transactions abandoned because of any willful breach of this Agreement.

ARTICLE XV.

MISCELLANEOUS

Section 15.01. **Confidentiality**

Except as and to the extent required by applicable 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 Governmental Approvals, no Party hereto shall, directly or indirectly, disclose or use (and no Party shall permit its representatives to disclose or use) any Confidential Information with respect to any other Party furnished, or to be furnished, by such other Party hereto or its shareholders, directors, officers, agents, or representatives to the other Party hereto 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 applicable Law or listing rules of an exchange on which Buyer's parent corporation's stock is listed, and except as otherwise set forth in this Agreement, the initial public announcement relating to the transactions contemplated herein will be mutually agreed upon and jointly made by the Parties. Subsequent official public announcements by one Party are subject to review and approval by the other Party before issuance, such approval not to be unreasonably withheld, conditioned or delayed.

Section 15.03. **Notices**

The Parties shall make all notices, other communications and approvals required or permitted by this Agreement in writing, stating specifically that they are being given pursuant to this Agreement and shall be addressed as follows:

in the case of the Seller:

Township of East Coventry
855 Ellis Woods Road
Pottstown, PA 19465
Attention: Township Manager

with a copy to:

Township of East Coventry
855 Ellis Woods Road
Pottstown, PA 19465
Attention: Solicitor

in the case of the Buyer:

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 of 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 have no effect on 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 remain in full force and effect and in no way be affected, impaired or invalidated.

Section 15.06. **Entire Agreement**

This Agreement 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 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 because of such provision of this Agreement having been drafted on behalf of one Party rather than the other Party.

Section 15.07. **Amendments; Waivers**

This 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 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 precludes 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 provided in this Agreement, 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. **Successors and Assigns**

None of the Parties to this Agreement may assign any right or delegate any performance under this Agreement without the prior written consent of the other Parties, and any 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 respective permitted 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 Eastern District of Pennsylvania and the Court of Common Pleas of Chester 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/or the Court of Common Pleas of Chester 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 in this Agreement shall be effective service of process for any suit, action or other proceeding brought in any such court.

Section 15.11. **Specific Performance**

The Parties agree that irreparable damage would occur if any provision of this Agreement were not performed in accordance with the terms hereof and that the Parties are entitled to specific performance of the terms hereof, in addition to any other remedy to which they are entitled at law or in equity.

Section 15.12. **Interpretation.**

For purposes of this Agreement: (a) the words "include," "includes", and "including" shall be deemed to be followed by the words "without limitation"; (b) the word "or" is not exclusive; and (c) the words "herein", "hereof," "hereby," "hereto" and "hereunder" refer to this Agreement as a whole. The definition given for any defined terms in this Agreement shall apply equally to both the singular and plural forms of the terms defined. The Exhibits and Schedules referred to herein shall be construed with, and as an integral part of, this Agreement to the same extent as if they were set forth herein.

Section 15.13. **Counterparts; Electronic Mail; Facsimile Execution**

This Agreement may be executed in any number of counterparts which, taken together, shall constitute one and the same agreement. This Agreement will be effective when it has been executed by each Party and delivered to each Party. 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.

[THIS SPACE INTENTIONALLY LEFT BLANK;

SIGNATURES NEXT PAGE]

IN WITNESS WHEREOF, the Parties hereto have executed, or caused to be executed by their duly authorized Representatives, this Agreement as of the Effective Date.

TOWNSHIP OF EAST COVENTRY, CHESTER COUNTY

By: _____
Name: Ray Kolb
Its: Board of Supervisors Chair

ATTEST:

By: _____
Name: Eugene C. Biggs, Jr.
Its: Township Manager

PENNSYLVANIA-AMERICAN WATER COMPANY

By: _____
Name: Justin L. Ladner
Its: President, PAWC

ATTEST:

By: _____
Name: Andrew L. Sharpe
Its: Managing General Counsel

EXHIBIT A

Bill of Sale

EXHIBIT B

Assignment and Assumption Agreement

EXHIBIT C

Escrow Agreement

Execution version

ASSET PURCHASE AGREEMENT

By and Between

East Coventry Township, Chester 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 2.01(b)

Acquired Assets

EAST COVENTRY TOWNSHIP
SEWAGE FACILITIES ASSESSMENT
DECEMBER 2022

PREPARED FOR:

EAST COVENTRY TOWNSHIP
855 ELLIS WOODS ROAD
POTTSTOWN, PA 19465

PREPARED BY:

Carroll Engineering Corporation
949 EASTON ROAD
WARRINGTON, PA 18976

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APPENDIX A –SEWAGE FACILITIES MAP

1. INTRODUCTION

This assessment of the tangible assets of facilities and equipment of the East Coventry sanitary sewer system has been prepared in accordance with PA Act 12 and following the guidelines of the "Uniform System of Accounts for Class A Wastewater Utilities." Each facility and class of equipment has been coded per section 300 of the "Wastewater Utility Plant Accounts" section of the Guidelines. The Asset Survey includes five (5) pump stations, and approximately 13.5 miles of gravity sewers and force mains. Information was obtained from sanitary sewer GIS mapping. Site visits were conducted at each pump station to inventory and assess equipment.

2. OVERVIEW OF THE SEWER SYSTEM

East Coventry Township, Montgomery County, PA is bordered by Lower Pottsgrove and Limerick Townships in Montgomery County to the northeast, East Vincent Township to the south, South Coventry Township to the southwest, and North Coventry Township to the northwest. The Township covers an area of approximately 10.1 square miles and has a population of 7,068 as of the 2020 Census.

The wastewater system serves the northern corner of the Township, an area roughly bound by Bickels Run and Pigeon Creek to the south and East Cerdarville Road, Old Schuykill Road and Vaughn Road to the north. The system consists of approximately 10.5 miles of gravity sewer collection mains and interceptors in sizes ranging from eight (8) to fifteen (15) inches and approximately 0.5 miles of low-pressure collection mains in sizes ranging from 1.5 to 3 inches. There are five (5) dedicated pump stations and approximately 2.6 miles of force mains, sized three (3) to eight (8) inches.

The majority of the sewer system was constructed in 2005. The remainder of the sewer system was built over the intervening years mostly as new developments were built in the Township. An inventory of the physical assets of the sewer system is included in Section 3 of this report. The sewer mains have been categorized pipe size and purpose. The pump station inventory includes a description of each pump station and a list of equipment identified at each pump station.

Sewage flows from the Township are conveyed to North Coventry Township via the force main from Pump Station #1. Flows are ultimately treated at the North Coventry Municipal Authority Wastewater Treatment Plant. A map of the system is included in Appendix A.

3. SYSTEM INVENTORY

3.1 PUMP STATIONS

A. PUMP STATION NO 1

Facility Description

Pump Station No. 1 is located at 1675 New Schuylkill Road. Pump Station No. 1 was originally built in 2004. The entire East Coventry Township sewer system is tributary to this pump station, including Pump Station Nos. 2, 3, 4, and 5.

Sewage is discharged through an approximately 2,500 foot long, 8-inch diameter PVC and DIP force main to North Coventry Municipal Authority Wastewater Treatment Plant, located at 1485 E Schuylkill Road.

The pump station is housed in a 16' x 22'4" concrete block building. The 14' diameter wet well is outside of the building and can be accessed via three 30" x 48" aluminum hatches. The three submersible pumps are located in the wet well and the valves are located in a 10' x 16' valve vault outside of the building.

The 125 kW Cummins generator sits inside the pump station control building. It has an integral diesel tank and is controlled by a Cummins automatic transfer switch.

The property is surrounded by an 8' high chain-link and barbed wire fence and accessible via a paved driveway.

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Three (3) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5433V	
	Pump Serial Nos.	1050285-0, 1050285-1, 1050285-2	
	Type	Submersible	
	Pump GPM	600	
	Pump TDH Ft.	133'	
	Pump Size	4 inch	
	Motor HP	50	
	Motor Voltage	480/3/60	
	Wet Well Size	14' Diameter	Outer Diameter
	Hatchway	Three (3) 30" x 48" Hatches	
	Hatchway	One (1) 24" x 24" Hatch	
371.3	**VFD**	Three (3) VFDS	6-pulse, each in NEMA 1 enclosure
	Manufacturer	Saftronics	
	Model No.	FD4050-000	
	HP	50	
371	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Triplex, constant speed pump controller in a NEMA 12 enclosure
	Model No.	86303	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC35.40	
	Transducer Serial No.	405405-01	
	Floats Manufacturer	Pumpak	5 Anchor float with 30' cord SS cable for float mounting
371	**GRINDER**		
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	100504-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	100504-3-1	
	Hydraulic Power Pack	HPU7355A	
	Serial No.	D13T63	
364	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50/50097090	
	Serial No.	65015516000	

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Circular Chart Recorder Manu./Model	Endress & Hauser, Model RSC1 (392)	
360	**VALVES**		
	Valve Vault Size	10' x 16'	
	Valve Vault Hatchway	One (1) 36" x 36"	
	Type	Five (5) 8" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Three (3) 8" Air Cushioned Check Valves	
	Manufacturer	GA Industries	
	Type	Four (4) Pressure Guages	
	Manufacturer/Serial No.	Onyx Valve Co./11186	
	Type	2" PVC Ball Valve	Sump Pump Discharge
	Manufacturer/Model No.	Hayward/LB138	
396	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
371.3	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler - Hammer/YS2036	3 Phase/480 V
355	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGDK-5672618	
	Serial No.	E040645103	
	Generator KW	125 kW	
	Engine Model No./Serial No.	6BTA5.9G3/46395258	
	Fuel Tank (Gals)	336	
	ATS Manufacturer	Cummins	
	ATS Model No.	OTPC	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer	Penn Ventilation	
	Model No.	D18	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	004-303374-265	
	Serial No.	802577-01.	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Motorized Damper & Insect Screen
	Type	Damper Actuator	
	Manufacturer	Siemens GGD Series	
	Model No.	GGD221.1U/BR	
	Type	Fast Acting, Two Position Actuator	
	Manufacturer	Honeywell	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
371.3	**BIOXIDE CHEMICAL FEED SYSTEM**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550. Gallon HDXLPE Tank	4' Diameter, 6.5' High, Stock No. 1000540
	Chemical Storage Tank Model No.	V-04-03384	
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.2	**BUILDING**		

EAST COVENTRY TOWNSHIP PUMP STATION #1			
	Station Name	Pump Station #1	
	Location	Towpath Park (1675 New Schuylkill Rd, Pottstown PA 19465)	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Size	22'4" x 16'	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length	8'/289'10"	
	Paving and Walkways	Paved Driveway	
371	**CRAIN/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	Serial No.	5004-25512	
	MISCELLANEOUS		
	Field Conversion Kit (Man./Model No.)	Chromalox/PF491-2	
	Water Pressure Tank (Man./Model No.)	Well-X-Troll/WX-202	
	Emergency Eye Wash Station (Man./Model No.)	Porta Stream/Model 20000/330097	
	Sump Pump (Valve Vault)		
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Sump pump located in the valve vault was rusted.
Some rust of the the pipe and fittings/valves in the valve vault.
Pump Station Site and Control Building in good condition.
A lot of bugs in bathroom and chemical feed room
Pump Station is served by well water

B. PUMP STATION NO 2

Facility Description

Pump Station No. 2 is located at the intersection of Ellis Woods Road and Wood Lea Road. Pump Station No. 2 was originally built in 2004. The neighborhood along Wood Lea Road, Wintergreen Lane, and Oleander Lane is tributary to this pump station.

Sewage is discharged through an approximately 950 foot long, 3-inch diameter HDPE force main to Manhole No. 1A, located at 45 Buckwalter Road. The wastewater flows from Manhole No. 1A via gravity to Pump Station No. 4, located near the intersection of E Cedarville Road and Saylors Mill Road.

The pump station is housed in a 16' x 22'4" concrete block building. The 6' diameter wet well is outside of the building and can be accessed via a 42" x 54" aluminum hatch. The two submersible pumps are located in the wet well and the valves are located in a 6' x 9' valve vault outside of the building.

The 35 kW Cummins generator sits inside the pump station control building. It has an integral diesel tank and is controlled by a Cummins automatic transfer switch.

The property is surrounded by an 8' high chain-link and barbed wire fence and accessible via a paved driveway.

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5431MT	
	Pump Serial Nos.	1145425-0, 1145425-1	
	Type	Submersible	
	Pump GPM	50	
	Pump TDH Ft.	42'	
	Pump Size	2"	
	Motor HP	3	
	Motor Voltage	480/3/60	
	Wet Well Size	6' Diameter	Inner Diameter
	Hatchway	42" x 54"	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Duplex, constant speed pump controller in a NEMA 12 enclosure
	Model/Serial Number	86303	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504326-01	
	Floats Manufacturer	Pumpak	5 Anchor float with 30' cord and SS cable for float mounting
371	**GRINDER**		
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	101124-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101124-3-1	
	Hydraulic Power Pack	HPU7355A	
	Serial No.	M20T87	
364	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	6C028A16000	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360	**VALVES**		
	Valve Vault Size	6' x 9'	
	Valve Vault Hatchway	36" x 36"	
	Type	Four (4) 3" Plug Valves	

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Two (2) 3" Air Cushioned Check Valves	
	Manufacturer/Model No.	GA Industries/ 7032	
	Type	Two (2) Air Release Valves	
	Manufacturer/Serial No.	Crispin Valves/ 10078066	
	Type	Two (2) 2" SS ball Valves	
	Manufacturer/Model No.	Merit/V210FP-32	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
396	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
371	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler-Hammer/PRL-2A	3 Phase/480 V
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48D11S15N	
	Serial No.	J05D11332	
355	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGGD-5708962	
	Serial No.	D050766728	
	Generator KW	35 kW	
	Fuel Tank (Gals)	145	Model No./Serial No: CPG 0159-1484/634,139
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECA - 5709584	
	ATS Serial No.	C050759549	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Manufacturer	Penn Barry	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Model No.	D10	
	Serial No.	CCWTH/F00711	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	LUH	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Motorized Damper & Insect Screen
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4309F1005	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
371	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 7' High/Stock No. 1000540
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.2	**BUILDING**		
	Size	16' x 22'4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	

EAST COVENTRY TOWNSHIP PUMP STATION #2			
	Station Name	Pump Station #2	
	Location	Wood Lea Rd & Ellis Woods Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/211 LF/16.5 LF	
	Paving and Walkways	Paved Driveway	
371	**CRAIN/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	MISCELLANEOUS		
	Emergency Eye Wash Station	Bradley	
	Sump Pump (Valve Vault) Model No.	SPX50M2	0.5 HP
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Sump pump located in the valve vault was rusted.
Some rust on the the pipe and fittings/valves in the valve vault.
Pump Station Site and Control Building in good condition.
Pump Station is served by public water system

C. PUMP STATION NO 3

Facility Description

Pump Station No. 3 is located at the intersection of Rinehart Road and Old Schuylkill Road. Pump Station No. 3 was originally built in 2004. The Coventry Glen neighborhood bordered by Rinehart Road, Savanna Drive, Dare Lane, and Old Schuylkill Road is tributary to this pump station.

Sewage is discharged through an approximately 2,500 foot long, 6-inch diameter PVC force main to Manhole No. 3.3, located along the north end of Lubold Road. The wastewater flows from the manhole via gravity to Pump Station No. 1, located at 1675 New Schuylkill Road.

The pump station is housed in a 16' x 22'4" concrete block building. The 8' diameter wet well is outside of the building and can be accessed via a 42" x 60" aluminum hatch. The two submersible pumps are located in the wet well and the valves are located in a 6' x 13' valve vault outside of the building.

The 35 kW Cummins generator sits inside the pump station control building. It has an integral diesel tank and is controlled by a Cummins automatic transfer switch.

The property is surrounded by an 8' high chain-link and barbed wire fence and accessible via a paved driveway.

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5432MVK	
	Pump Serial Nos.	1174038-0, 1174038-1	
	Type	Submersible	
	Pump GPM	285 GPM	
	Pump TDH Ft.	55' TDH	
	Pump Size	4 inch	
	Motor HP	10	
	Motor Voltage	480/3/60	
	Wet Well Size	8' Diameter	
	Hatchway	42" x 60"	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	
	Model/Serial Number	86303-B	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504327-01	
	Floats Manufacturer	Anchor Scientific	
371	**GRINDER**		
	Manufacturer/Model	Muffin Monster/30005-008-DI	
	Serial No.	101521-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101521-2-1	
	Hydraulic Power Pack	HPU7355A	
364	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	50097090	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360	**VALVES**		
	Valve Vault Size	13' x 6'	
	Valve Vault Hatchway	36" x 36"	
	Type	Four (4) 6" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Type	Two (2) 6" Air Cushioned Check Valves	
	Manufacturer	GA Industries	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
	Type	2" PVC Ball Valve	Sump Pump Discharge
	Manufacturer/Model No.	Hayward/LB138	
396	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
371.3	**ELECTRICAL**		
	Circuit Breaker	Eaton Cutler - Hammer	
	Panelboard	Eaton Cutler-Hammer/PRL-2A	3 Phase/480 V
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48D11S15N	
	Serial No.	J05B12719	
355	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGGD-5708979	
	Serial No.	C050765062	
	Generator KW	35 kW	
	Fuel Tank (Gals)	145	Model No./Serial No.: CPG 0159-1484/634,137
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECA - 5707835	
	ATS Serial No.	C050757761	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	
	Model No.	D10	
	Serial No.	CCW TH/F00710	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Model No.	LUH	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	48" x 48"	Fixed w/ Motorized Damper & Insect Screen
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4309F1005	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
371	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 6'7" High
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	16'" x 22'4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/285.5 LF/16 LF	
	Paving and Walkways	Paved Driveway	

EAST COVENTRY TOWNSHIP PUMP STATION #3			
	Station Name	Pump Station #3	
	Location	Rinehart Rd & Old Schuylkill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371	**CRAIN/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	Self Retracting Lifeline	Miller/LB384	
	MISCELLANEOUS		
	Emergency Eye Wash Station	Bradley	
	Spare Pump	Fairbank Morse/ 1174038-0	
	Sump Pump Model No.	SPX50142	
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Pump Station served by public water system

Minimial rust in valve vault. Valve Vault and pipe in good condition

Pump Station Site and Control Building in good condition

D. PUMP STATION NO 4

Facility Description

Pump Station No. 4 is located along E Cedarville Road near the intersection of Saylors Mill Road and E Cedarville Road. Pump Station No. 4 was originally built in 2004. The area bordered by E Cedarville Road, S Sanatgoa Road, and Buckwalter Road is tributary to this pump station.

Sewage is discharged through an approximately 5,350 foot long, 4-inch diameter PVC force main to Manhole No. 26, which is located along E Cedarville Road. The wastewater flows from Manhole No. 26 via gravity to Pump Station No. 1, located at 1675 New Schuylkill Road.

The pump station is housed in a 16' x 22'4" concrete block building. The 8' diameter wet well is outside of the building and can be accessed via a 36" x 72" aluminum hatch. The pump station has two submersible pumps located in the wet well and two dry pit submersible pumps located in the 8' x 13' valve vault outside of the building.

The 125 kW Cummins generator sits inside the pump station control building. It has an integral diesel tank and is controlled by a Cummins automatic transfer switch.

The property is surrounded by an 8' high chain-link and barbed wire fence and accessible via a paved driveway.

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5435MV	
	Pump Serial Nos.	1224441-0, 1224441-1	
	Type	Submersible	
	Pump GPM	225	
	Pump TDH Ft.	148'	
	Pump Size	4 inch	
	Motor HP	40	
	Motor Voltage	480/3/60	
371.3	**PUMPS**	Two (2) Pumps	4 spare impellers
	Pump Manufacturer	Fairbanks Morse Pump Corp.	
	Pump Model No.	D5435WD	
	Pump Serial No.	1224425-0, 1224425-1	
	Type	Dry Pit Submersible	
	Pump GPM	225	
	Pump TDH Ft.	148'	
	Pump Size	4 inch	
	Motor HP	40	
	Motor Voltage	480/3/60	
	Pump Control	Simplex Control Panel	3 hydromatic float switches
	Wet Well	8' Diameter	
	Wet Well Hatchway	36" x 72"	
371.3	**VFD**	Two (2) VFDS	18-pulse in NEMA 1 enclosure
	Manufacturer	Saftronics	
	Model No.	HR104100	
	HP	100	
371.3	**CONTROL PANEL**		
	Manufacturer	Healy Ruff - Pumpak Ltd	Duplex, variable speed transducer based control system in NEMA 12 enclosure
	Model/Serial Number	86303-B	Capable of controlling all 4 pumps. Panel No. 50323
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	Sigma 6100.007.B.DS.SB.WC25.100	
	Transducer Serial No.	504328-01	
	Floats Manufacturer		5 Anchor float with 30' cord and 20' of SS cable for float mounting
371	**GRINDER**		

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacuture/Model	Muffin Monster/30005-008-DI	
	Serial No.	101799-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	101799-3-1	
	Hydraulic Power Pack	HPU7355A	
364	**FLOW METER**		
	Manufacuture	Endress & Hauser	
	Model	Promag 50	
	Serial No.	50097090	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360	**VALVES**		
	Valve Vault	8' x 13'	
	Valve Vault Hatchway	Three (3) 36" x 36"	
	Type	Four (4) 4" Plug Valves	
	Manufacturer/Model No.	Milliken/ 175 CWP A126 CLB	
	Type	Two (2) 4" Air Cushioned Check Valve	
	Manufacturer/Model No.	GA Industries/250-DSL	
	Type	Spring Loaded Elbow Surge Relief Valve	
	Manufacturer	GA Industries	
	Type	Three (3) Pressure Guages	
	Manufacturer	Onyx Valve Co.	
396	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
371.3	**ELECTRICAL**	Eaton Cutler - Hammer	
	Circuit Breaker	Eaton Cutler-Hammer/PRL3A	3 Phase/480 V
	Panelboard	Eaton Cutler - Hammer/YS2036	
	Dry Tpe Distribution Transformer/Model No.	Eaton Cutler-Hammer/S48M11S15N	
	Serial No.	J05G11887	
	Heavy Duty Limit Switch	Micro Switch	
	Model No./Serial No.	B/DPDT/LSV7L/LSG7L	
355	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	DGDK-5713212	

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Serial No.	E050781651	
	Generator KW	125 kW	
	Fuel Tank (Gals)	366	CPG 0159-1473/634361
	ATS Manufacturer	Cummins	
	ATS Model No.	OTECB-5713246	
	ATS Serial No.	E050782837	
354.3	**HVAC**		
	Type	Exhaust Fan	Control/Generator Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX11R	
	Type	Exhaust Fan	Chemical Room
	Manufacturer	Penn Ventilation	With Gravity Backdraft Damper
	Model No.	DX08S	
	Type	Supply Fan	Wet Well/Valve Vault
	Manufacturer	Penn Ventilation	
	Model No.	D10	
	Serial No.	F01389	
	Type	Electric Heater	Control/Generator Room
	Manufacturer	Chromalox	
	Model No.	004-303374-266	
	Type	Electric Heater	Chemical Room
	Manufacturer	Chromalox	
	Model	LUH	
	Type	Electric Heater	Bathroom
	Manufacturer	Chromalox	
	Model	HCH	
	Type	Exhaust Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Gravity Damper
	Type	Intake Louver	Control/Generator Room
	Size	64" x 56"	Fixed w/ Motorized Damper & Insect Screen
	Type	Actuator	
	Manufacturer	Siemens/GGD221.1U/BR	
	Type	Intake Louver	Chemical Room
	Size	24"x 24"	Fixed w/ Motorized Damper & Insect Screen
	Type	Intake	Bathroom
	Size	16" x 8"	Brick Vent w/ Opposite Blades Damper & Insect Screen
371	**Bioxide Chemical Feed System**		
	Manufacturer	USFilter Davis Process	

EAST COVENTRY TOWNSHIP PUMP STATION #4			
	Station Name	Pump Station #4	
	Location	E Cedarsville Rd near the intersection with Saylors Mill Rd, Pottstown, PA 19465	
	Start Up Date	2004	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 7' High, Stock No. 1000540
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diamter	1"	
	HP	0.34	
	Pump GPD	19	
	Max Pressure	40 psi	
354.3	**BUILDING**		
	Size	16' x 22' 4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/278 LF/18 LF	
	Paving and Walkways	Paved Driveway	
371	**CRAIN/HOIST**		
	Manufacuture	Thern Incorporated	Spur Gear Hand Winch
	Model	5124M3SS	
	MISCELLANEOUS		
	Emergency Eye Washing Station		
	Sump Pump (Valve Vault)		
	Bypass Connection	Tee w/ Blind Flange	Valve Vault

OVERALL BUILDING AND FACILITY ASSESSMENT

Minor rust on dry well and sump pumps.

Valve Vault, Pump Station Site and Control Building in Good Condition

Pump Station served by public water system.

E. PUMP STATION NO 5

Facility Description

Pump Station No. 5 is located at 225 Saw Mill Road. Pump Station No. 5 was originally built in 2008. A portion of Harley Road and Saw Mill Road is tributary to this pump station.

Sewage is discharged through an approximately 2,000 foot long, 4-inch diameter PVC and DIP force main to Manhole No. 35, which is located along Harley Road. The wastewater flows from Manhole No. 35 via gravity to Pump Station No. 1, located at 1675 New Schuylkill Road.

The pump station is housed in a 16' x 22'4" concrete block building. The 7'x 7' wet well is outside of the building and can be accessed via two 42" x 32" aluminum hatches. The two submersible pumps are located in the wet well and the valves are located in a 6' x 10'4" valve vault outside of the building.

The 125 kW Cummins generator sits inside the pump station control building. It has an integral diesel tank and is controlled by a ASCO automatic transfer switch.

The property is surrounded by an 8' high chain-link and barbed wire fence and accessible via a paved driveway.

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
371.3	**PUMPS**	Two (2) Pumps	
	Pump Manufacturer	KSB	
	Pump Model No.	KRTF 100-316/164XG	
	Pump Serial Nos.	879730, 880754	
	Type	Submersible	
	Pump GPM	120	
	Pump TDH Ft.	118'	
	Pump Size	4 inch	
	Motor HP	20	
	Motor Voltage	460/3/60	
	Wet Well Size	7' x 7'	
	Hatchway	26" x 56", Two (2) 42" x 32" Hatches	
371.3	**CONTROL PANEL**		
	Manufacturer	Sigma Controls	
	Model	Myriad DPC	
	Transducer Manufacturer	Sigma Controls	
	Transducer Model No.	6100RP-007-1-DS-So-SB-WC30-50	
	Floats Manufacturer	Sigma 100 Series	
371	**GRINDER**		
	Manufacturer/Model	Muffin Monster/30005-008-DI	
	Serial No.	103961-1-1	
	HP	5	
	Controller Model	PC2240	
	Controller Serial No.	103961-3-1	
	Hydraulic Power Pack	HPP 10504	
364	**FLOW METER**		
	Manufacturer	Endress & Hauser	
	Model	Promag 50	
	Serial No.	9505CC16000	
	Circular Chart Recorder Manu./Model	Eurotherm Recorders Limited, Model 392	
360	**VALVES**		
	Valve Vault Size	6' x 10'4"	
	Valve Vault Hatchway	Two (2) 33" x 33"	
	Type	Four (4) 4" Plug Valves	
	Manufacturer		
	Type	Two (2) 4" Swing Check Valves	

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Manufacturer		
	Type	Three (3) Pressure Gauges	
	Manufacturer	Onyx Valve Co.	
396	**AUTODIALER**		
	Manufacturer	Verbatim	
	Model	Raco 8 Channel	
371.3	**ELECTRICAL**		
	Panelboard	Square D/12247497130060000	
	Shielded General Purpose Transformer	Hevi-Duty/ES5HB25S	
355	**GENERATOR**		
	Manufacturer	Cummins	
	Model No.	125DSHAE-7019	
	Serial No.	H070100297 C	
	Generator KW	125	
	Fuel Tank (Gals)	366	CPG 0159-1473/655522
	ATS Manufacturer	ASCO	
	ATS Model No.	J7ACTSA30260 N58F	
	ATS Serial No.	411637 RE	
354.3	**HVAC**		
	Type	Unit Heater	
	Manufacturer	Qmark	
	Type	Two Position Direct Coupled Actuator	
	Manufacturer/Model No.	Honeywell/MS4120F 1006	
	Type	Fan Forced Wall Heater	
	Manufacturer/Model No.	Harley/CZ1512TB	
	Type	Wet Well Exhaust Fan	
	Manufacturer/Model No.	Loren Cook Co./120 CVR S	
	Serial No.	076S981448-00/0000701	
	Louver (Chemical Feed System)	16"x16"	
	Louver (Pump Station)	56" x 56"	
	Louver (Generator Exhaust)	64" x 56"	
371	**Bioxide Chemical Feed System**		
	Manufacturer	Siemens Water Technologies	
	Chemical Storage Tank	550 Gallon HDXLPE Tank	4' Diameter, 6'7" High
	Control Box	316SS, NEMA 3R	120 VAC/ 1 Phase / 60 Hz

EAST COVENTRY TOWNSHIP PUMP STATION #5			
	Station Name	Pump Station #5	
	Location	225 Saw Mill Rd, Pottstown, PA 19465	
	Start Up Date	2008	
CODE	**PUMP STATION EQUIPMENT**	**DESCRIPTION**	**COMMENTS**
	Calibration Stand	316SS	
	Chemical Feed Pump	Bellow Style Chemical Feed Pump	
	Chemical Feed Pump Model No.	15907-001	
	Bellow Diameter	1"	
	HP	0.34	
	Pump GPD	19	
	Flow Meter	Milltronics/7ML1034-1AA11/PBD/V0090114.	
354.3	**BUILDING**		
	Size	16' x 22' 4"	
	Main Structure Material	Concrete Blocks	
	Roof Type	A Frame/Shingles	
	Doors (number/material)	Five (5) Doors/Wooden	
	Bathroom	One (1) Toilet & One (1) Sink	
	Lighting	Three (3) Indoor Lights/ Two (2) Outdoor Lights	
	Fence (Type)	Chain Linked Fence w/ Barbed Wire	
	Height/Length/Gate Length	8'/275.67 LF/20 LF	
	Paving and Walkways	Paved Driveway	
371	**CRAIN/HOIST**		
	Manufacturer	Halliday products	
	Model	D2B/117130627-5	
	MISCELLANEOUS		
	Emergency Eye Wash and Shower Station		
	Water Pressure Tank	Amtrol/CH10050	
	Electric Mini Tank Water Heater	Ariston/GL4/030308	
	MDP TVSS Unit	Service Track ST	
	Two (2) Bypass Connections in VV		

OVERALL BUILDING AND FACILITY ASSESSMENT

Valve Vault Piping Exterior Coating Chipped and Rusted

Pump Station Site and Control Building in Good Condition

Pump Station served by well water

3.2 SEWER MAINS

The following summarizes sewer mains by type and main size.

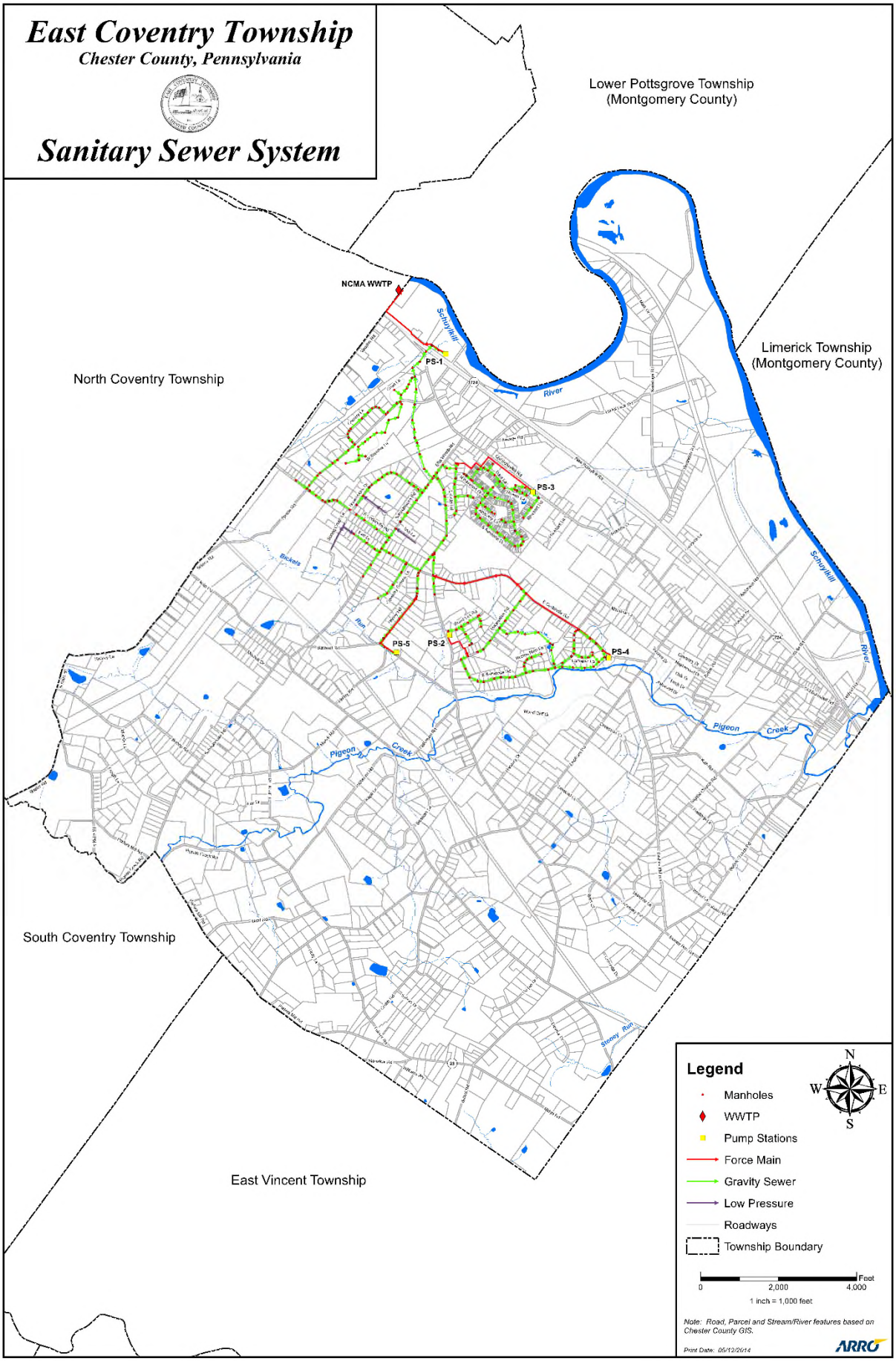
Main Size and Type	Length (ft)	Length (miles)
8" Gravity	47,359	8.97
10" Gravity	967	0.18
12" Gravity	6,056	1.15
15" Gravity	955	0.18
All Gravity	55,337	10.48
1.5" Low Pressure	1,045	0.20
2" Low Pressure	416	0.08
2.5" Low Pressure	654	0.12
3" Low Pressure	331	0.06
All Low Pressure	2,446	0.46
3" Force Main	965	0.18
4" Force Main	7,495	1.42
6" Force Main	2,563	0.49
8" Force Main	2,650	0.50
All Force Mains	13,673	2.59

Lateral Type	Length (ft)	Length (miles)
Gravity Laterals	12,028	2.28
Low-Pressure Laterals	314	0.06
All Laterals	12,342	2.34

Manholes: 291
Air Release Valves: 4

APPENDIX A

SEWAGE FACILITIES MAP


East Coventry Township
Chester County, Pennsylvania
Sanitary Sewer System
Lower Pottsgrove Township
(Montgomery County)
Limerick Township
(Montgomery County)
North Coventry Township
South Coventry Township
East Vincent Township
NCMA WWTP
PS-1
PS-2
PS-3
PS-4
PS-5
Schuylkill River
Pigeon Creek
Bickels Run
Stoney Run
Legend
Manholes
WWTP
Pump Stations
Force Main
Gravity Sewer
Low Pressure
Roadways
Township Boundary
N
W
E
S
0
2,000
4,000
Feet
1 inch = 1,000 feet
Note: Road, Parcel and Stream/River features based on Chester County GIS.
Print Date: 05/12/2014
ARRO

Schedule 2.02(h)

Excluded Assets

Fee simple ownership of the 13 acre parcel on New Schuylkill Road on which the Main Pump Station sits (Parcel No. 18-1-3). Easement to be transferred to Buyer.

Schedule 3.03

Allocation Schedule

(Prepared by Buyer)

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 Agreement with North Coventry Municipal Authority, North Coventry Township and East Coventry Township dated January 27, 2004

3. Pennsylvania Department of Environmental Protection Approval of the updated Act 537 Official Sewage Facilities Plan recognizing transfer of wastewater collection system from Seller to Buyer

4. PaDEP Approval of Transfer of WQM Permits (as listed on Schedule 4.12)

5. North Coventry Municipal Authority, North Coventry Township consent to assign Agreement dated January 27, 2004

Schedule 4.06

Undisclosed Liabilities

The following debt is associated with the Township's sewer system and will be defeased prior to transfer of the System to the Buyer.

SERIES OF 2021 BOND ISSUE PRINCIPAL (SEWER FUND)	
	Sewer Principal
12/1/2023	302,512
12/1/2024	311,281
12/1/2025	324,433
12/1/2026	328,818
12/1/2027	333,202
12/1/2028	350,739
12/1/2029	355,123
12/1/2030	359,507
12/1/2031	368,276
12/1/2032	381,429
12/1/2033	385,813
12/1/2034	390,197
12/1/2035	398,966
12/1/2036	403,350
12/1/2037	412,118
12/1/2038	70,148
12/1/2039	70,148
12/1/2040	70,148
12/1/2041	74,532
Total	**5,690,739**

Schedule 4.07

Absence of Certain Changes or Events

[None.]

Schedule 4.08

Tax Matters

None.

Schedule 4.09

Seller is endeavoring, with the assistance of its legal counsel, to prepare a schedule of Real Property and easements related to operation of the System which property would be conveyed to Buyer in the event of a sale. Attached is the map of an easement to be transferred by the Township to Buyer pursuant to the attached Permanent Easement and Right of Way to be executed at Closing.

Below shows the start of the additional work stream, which will continue through Closing.

East Coventry Township Schedule 4.09 Part 1 Real Estate

Number	Book and Page Number		Document Description	Parcel No.	Date	P.S.Name
1	8279	1414	Deed	18-4-132.79	11/1/2011	Creekview
2	7165	2295	Deed	18-4-105.1	5/22/2007	Sawmill Rd

East Coventry Township Schedule 4.09 Part 2 Easements

Number	Book and Page Number		Document Description	Date	Location
1	9898	634	Sewer Easement	3/25/2019	7 Wood Lea Road
2	8671	652	Assignment and Assumption Agreement	3/19/2013	Wood Crest Estates incl. Wood Crest Estates Pump Station S.S. Easement A S.S. Easement B
3	8796	94	Sewer Easement	8/22/2013	Coventry Glen incl. Coventry Glen Pump Station S.S. Easement SA-1 S.S. Easement SA-2 S.S. Easement SA-3 S.S. Easement SA-4 S.S. Easement SA-5 S.S. Easement SA-6
4	7165	2279	Sewer Easement	5/22/2007	Creekview Perm. S.S. Easement Area 2,649 SF & 6,953 SF
5	7125	1371	Sewer Easement	4/5/2007	150 Buckwalter Rd
6	7175	62	Sewer Easement	6/1/2007	2532 E. Cedarville Rd
7	7175	46	Sewer Easement	6/1/2007	2600 E. Cedarville Rd
8	7574	1529	Assignment of Easement Agreement	1/20/2009	Old Schuylkill Rd Schuylkill Rd PECO ROW
9	7574	1560	Assignment and Assumption Agreement	1/20/2009	Old Schuylkill Rd (near Ellis Woods Rd.)
10	7574	1582	Assignment of Easement Agreement	2/20/2009	Spiece Road (4,072 SF)
11	TBD	TBD	Parcel 18-1-3 (easement to be provided to Buyer for Main Pump Station)		New Schuylkill Rd **Towpath Park**

East Coventry Township Schedule 4.09 Part 3 Recorded Plans

Number	Book & Page Numbers	Document ID	Date	Location
1	16955 1 thru 6	10387703	3/9/2004	Orchard Ridge
2	17315 1 thru 2	10498070	1/18/2005	Wood Crest
3	17525 1 thru 8	10556207	7/26/2005	Creekview
4	17951 1 thru 11	10689179	9/22/2006	Coventry Glen

PERMANENT EASEMENT AND RIGHT OF WAY

THIS PERMANENT EASEMENT AND RIGHT-OF-WAY (hereinafter referred to as this "Easement"), is made as of this _____ day of _____, 2024, by and between the **TOWNSHIP OF EAST COVENTRY**, a municipality organized under the laws of the Commonwealth of Pennsylvania and having an office for the transaction of business at 855 Ellis Woods Road, Pottstown, Pennsylvania 19465, (hereinafter referred to as the "Grantor"), and **PENNSYLVANIA-AMERICAN WATER COMPANY**, a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, having an office for the transaction of business at 852 Wesley Drive, Mechanicsburg, Pennsylvania 17050 (hereinafter referred to as the "Grantee").

W I T N E S S E T H

The Grantor, in consideration of the covenants and agreements hereinafter recited and the sum of One ($1.00) Dollar, the receipt of which is hereby acknowledged, does hereby give, grant and convey unto the Grantee, its successors and assigns, forever, the following:

a. a permanent and exclusive easement and a free uninterrupted and unobstructed right of way, in, under, across and over a portion of the property of the Grantor (the "Grantor's Property"), situate in the Township of East Coventry, Chester County, as outlined on Exhibit "A" attached hereto and made a part hereof (hereinafter referred to as the "Exclusive Easement Area"); said right of way for the area under and surrounding an existing one-story building housing a pump station and appurtenant facilities (hereinafter referred to as "Building"), owned and maintained by Grantee; and
b. a permanent and non-exclusive easement and a free uninterrupted and unobstructed right of way, in, under, across and over a portion of Grantors Property as outlined on Exhibit "A" attached hereto and made a part hereof (hereinafter referred to as the "Non-Exclusive Easement Area," which together with the Exclusive Easement Area shall be hereinafter referred to as the "Easement Area") for pipes and pipelines now located within the Easement Area (the "Existing Pipe Lines"), for the purpose of the use of the Building and the Existing Pipe Lines and the access, ingress, egress and regress to the Building and the Existing Pipe Lines and the right to maintain, repair, and replace the Building and the Existing Pipe Lines and

Grantee's associated facilities related to its wastewater utility business as located within the Easement Area.

Together with the right to the Grantee, its successors and assigns, to (i) enter in and upon the Easement Area along the length of the Easement Area only with men and machinery, vehicles and material at any and all times for the purpose of maintaining, repairing, renewing or adding to the Building and the Existing Pipe Lines and appurtenances (provided, however, that any excavation, construction or installation shall only be performed with such Local, State and Federal Permits as may be required within the Easement Area, (ii) remove trees, bushes, undergrowth and other obstructions from the Easement Area interfering with the activities authorized herein, and (iii) for doing anything reasonably necessary, useful or convenient for the enjoyment of the easements herein granted in and to the Easement Area.

The right of the Grantor to freely use and enjoy its interest in Grantor's Property, exclusive of the Exclusive Easement Area, is reserved to Grantor, its successors and assigns insofar as the exercise thereof does not endanger or interfere with the construction, operation, and maintenance of Grantee's Building and Existing Pipe Lines and attached facilities. Notwithstanding the foregoing, and excluding future sewer connections requiring access to the Easement Area as approved by Grantee, no other pipes or conduits shall be placed within ten (10) feet of the Easement Area or Existing Pipe Lines, measured horizontally, except pipes crossing same at right angles, in which latter case, a minimum distance of two (2) feet shall be maintained between the pipes. All sewer pipes shall be laid below the water mains. No excavation or blasting shall be carried on in the Easement Area which in any way endangers or unreasonably interferes with the wastewater pipe lines and attached facilities.

TO HAVE AND TO HOLD the above granted easement and right of way unto the Grantee, its successors and assigns forever.

The Grantee agrees, by the acceptance of this Easement that, upon any opening made in connection with any of the purposes of this Easement, said opening shall be backfilled and resurfaced to as nearly as possible the same condition as existed when said opening was made, provided that Grantee shall not be obligated to restore landscaping, other than resodding any grass which was removed upon entry, all such work to be done at the expense of the Grantee.

Grantor and Grantee hereby covenant and agree as follows:

1. Grantor hereby covenants that it is the owner in fee simple of the Easement Area, and has good title to convey the same, having acquired said Easement Area from _____, by Deed dated _____, and recorded on _____ at _____.

2. Grantor hereby covenants and agrees that the Grantee shall quietly enjoy the easement and right of way as granted herein.

3. Grantor hereby covenants that the Easement Area is not subject to any mortgages.

4. Grantee hereby agrees that it shall keep the Easement Area in good order and condition and shall be responsible for and shall pay all costs associated with the maintenance, repair and replacement of any of Grantee's improvements upon the Easement Area.

5. Grantee hereby agrees that it shall use the Easement Area at its own risk. Grantee will at all times protect, defend, indemnify, save and keep harmless Grantor against and from any and all loss, damage or expense, including any injury to any person or property whomsoever or whatsoever arising out of or caused by any negligence of Grantee, or any employee, agent of Grantee. The obligations of this paragraph shall survive the termination, expiration or assignment of this Easement.

6. This Easement may be assigned without the consent of the Grantor.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the Grantor has duly executed this Easement as of the day and year first above written.

GRANTOR:

TOWNSHIP OF EAST COVENTY

ATTEST/WITNESS:

_____ By:_____

IN WITNESS WHEREOF, the Grantee has duly executed this Easement as of the day and year first above written.

GRANTEE:

ATTEST:

PENNSYLVANIA-AMERICAN WATER COMPANY

_____ By:_____

Name:_____

Title:_____

COMMONWEALTH OF PENNSYLVANIA)

) SS:

COUNTY OF CHESTER)

On this, the _____ day of _____, 2024, before me, a Notary Public, personally appeared, _____, a Pennsylvania _____, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained.

In Witness Whereof, I have set my hand and official seal.

Notary Public_____

My Commission expires:_____

COMMONWEALTH OF PENNSYLVANIA)

) SS:

COUNTY OF CUMBERLAND)

On this, the _____ day of _____, 2024, before me, a Notary Public, personally appeared, _____, known to me as _____ of PENNSYLVANIA-AMERICAN WATER COMPANY, a Pennsylvania corporation, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument, and as such officer, being authorized to do so, executed the foregoing instrument for the purposes therein contained.

In Witness Whereof, I have set my hand and official seal.

Notary Public_____

My Commission expires: _____

20'
75'
24'
140'
LS
60'
300'
175'
Note: Include a 100-ft. easement around the well head.
Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet. Projection: Lambert Conformal Conic
LS Lift Station
Gravity Main
Force Main
Exclusive Easement Area
Non-Exclusive Easement Area
Parcel
PENNSYLVANIA AMERICAN WATER
Date: 12/14/2023
1 inch = 150 feet
0
75
150
300
Feet
TO BE USED FOR REFERENCE ONLY
Although every effort has been made to ensure the accuracy of the information, errors and conditions originating from physical sources to develop the information may be reflected in the data supplied.
Document Path: \\amwaternet\GIS\Spaceman\data\Pennsylvania\Acquisitions\Chester County\EastCoventryTwp\Easement\PumpStation1\PS1_Easement.mxd
Pump Station 1 Easement
East Coventry Township
Chester County, Pennsylvania
Drawn By: BG
Checked By: MW

Schedule 4.10

Equipment and Machinery

The following details the machinery and equipment that will be transferred to the Buyer:

Portable crane – harness at each pump station

Extra pump at pump station #3 (Coventry Glen Pump Station)

Safety tripod with winch

Six 1 inch manhole risers

2 used manhole casting with lid

Used grind pump for pump station # 1 (Main Pump Station)

Manhole umbrella

Generator service kits for generator at pump station # 5 (Sawmill Road Pump Station)

Schedule 4.11

Noncompliance with Environmental Requirements

None.

Schedule 4.12

Authorizations, Licenses and Permits

1. The below permits issued by the Commonwealth of Pennsylvania Department of Environmental Protection:

Primary Facility	DEP Permit #
1. Main Pump Station	
2. Wood Crest Pump Station	
3. Coventry Glen Pump Station	
4. Creekview Pump Station	
5. Sawmill Road Pump Station	

2. Pennsylvania Department of Environmental Protection approval of the updated Act 537 Official Sewage Facilities Plan

Schedule 4.13

Assigned Contracts

Name of Contract	Parties to Contract	Date of Contract	Subject
Agreement	North Coventry Municipal Authority, North Coventry Township and East Coventry Township	1/27/04	Permitting East Coventry Township to send sewage flow to be treated at North Coventry Municipal Authority Plant **(Authority and North Coventry Township must consent to assignment)**
Shut-Off Agreement	East Coventry Township and PA-American Water Company	4/27/21	PA-American Water Company is required to shut off the water of a delinquent sewer customer upon notice from the Township

Schedule 4.14

Litigation Involving Seller

None.

Schedule 4.16(a)

Exception to Title to Acquired Assets

None.

Schedule 4.16(b)

Exception to Sufficiency of Acquired Assets

None.

Schedule 4.17

Pending Development Plans

Approved Pending Development Plans:

Coventry Chase: 112 single family home, 112 EDUs, projected to be completed in 2024.

Potential Pending Development Plans (not yet approved but for which the Township has notice):

Parker Ford: 235 single family homes

Village at Frick's Lock: 150 single family homes

Schedule 5.04

Buyer Consents and Approvals

1. Pennsylvania Public Utility Commission (the "PaPUC") Approval of Transaction

2. PaPUC Approval of Consent to Assignment to Agreement with North Coventry Municipal Authority, North Coventry Township and East Coventry Township dated January 27, 2004

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. PaDEP transfer of WQM Permits (as listed on Schedule 4.12)

Schedule 5.11

Buyer Litigation

[None.]

Schedule 6.05(e)

Missing Easements as of Closing Date

Schedule 7.04

Rates

Residential and Commercial:

Seller bills its customers quarterly a flat rate of $185 per EDU.

Exhibit A

Bill of Sale

Exhibit B

Assignment and Assumption Agreement

Exhibit C

Escrow Agreement

AGREEMENT

among

NORTH COVENTRY MUNICIPAL AUTHORITY

and

NORTH COVENTRY TOWNSHIP

and

EAST COVENTRY TOWNSHIP

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CJ

AGREEMENT

THIS AGREEMENT, made this :i._1:-Wlay of 8' _A.D. 2004, by and among:

NORTH COVENTRY MUNICIPAL AUTHORITY, a Pennsylvania Municipality Authority, whose office is located at 1485 East Schuylkill Road, Pottstown, North Coventry Township, Chester County, Pennsylvania, (hereinafter referred to as "Authority"); and

NORTH COVENTRY TOWNSHIP, a Pennsylvania Township of the Second Class, whose office is located at 845 South Hanover Street, Pottstown, North Coventty Township, Chester County, Pennsylvania, (hereinafter referred to as "North Coventry"); and

EAST COVEN.TRY TOWNSHIP, a Pennsylvania Township of the Second Class, whose office is located at 855 Ellis Woods Road, Pottstown, East Coventry Township, Chester County, Pennsylvania, (hereinafter refened to as "East Coventty"),

WITNESSETH:

WHEREAS, Authority has constrncted, owns, and is operating a municipal wastewat<;r collection system, a wastewater treatment plant, and related facilities in North Coventry Township, Chester County, Pennsylvania; and

WHEREAS, the Authotity's wastewater treatment plant has received a Pennit from the Pennsylvania Department of Environmental Protection (hereinafter referred to as "DEP") to treat up to 1,500,000 gallons of wastewater per day; and

WHEREAS, East Coventty and North Coventry are located in the northern pmiion of Chester County, both having a northern border along the Schuylkill River, and both sharing a common municipal boundary line; and

WHEREAS, East Coventty has adopted an Act 537 Sewage Facilities Plan, identifying a need for wastewater treatment plant capacity for 510,000 gallons of wastewater per day from pmtions of East Coventty Township which are experiencing malfunctioning on-site sewer systems and demands for new development; and

WHEREAS, Authority and North Coventry have determined that the currently reniaining treatment capacity of the. Authority's wastewater treatment plant 111ust be retained for property owners within North Coventry Township; and

WHEREAS, East Coventry has agreed to provide all constrnction and non-construction costs, as well as all other related expenses, for the Authority's expansion of the Authority's existing wastewater treatment plant to provide for 510,000 gallons per day of additi.onal

wastewater treatment capacity (hereinafter referred to as "Treatment Plant Expansion Project" or "Project"); and

WHEREAS, Authority and No1ih Coventry have agreed that Authority should construct the required additional facilities for the Treatment Plant Expimsion Project to increase the Autho1ity's Pe1mit by 5I0,000 gallons per day and to provide for treatment ofup to 510,000 gai\ons of wastewater per day from East Coventry; and

WHEREAS, in addition to paying all of the costs for the Treatment Plant Expansion Project, (estimated at. $2,353,000.00) which represents.oniy a minor expansion of the Authority's facilities because existing treatment units and infrastrncturc can be utilized for the additional capacity, East Coventry has agreed lo *pay* its proportionate share of the net costs for East Coventry's use of the Authority's existing treatment facilities and infrastrncture, as well as the purchase by Autho1ity of ad_ditional land, with East Coventry's proportionate share being One Million Fom:Hundred Sixty-four Thousand Dollars ($1,464,000.00); and

WHEREAS, East Coventry will lie constructing its own wastewater collection system within East Coventry Township for the conveyance of wastewater to the Authority's wastewater treatment plant; and

WHEREAS, North Coventry Municipal Autho1ity and North Coventry Township are agreeable to providing East Coventry Township with not more than 800 EDU's of treatment capacity during the period from signing the Agreement through constrnction to satisfy and accommodate East Coventry in accordance with the te1ms and provisions of this Agreement.

WHEREAS, the parties further wish to establish the sharing of the operation and maintenance costs of the Authority's expanded wastewater treatment pJa·nt after the completion of the Project; and

WHEREAS, the parties wish to establish the sharing of the costs of future repairs, . replacements, and upgrades to the Authority's wastewater treatment plant after completion of the. . Project.,

NOW, THEREFORE, the paiiies hereto, intending to be legally bound, agree as follows:

ARTICLE I

Pefinitions

I.I. Tenns and phrases defincdin this Section 1.01, for all purposes of this Agreement, . as herein.defined, shall have the meanings herein specified, unless the context clearly otherwise requires:

"AADF" shall mean Annual Average Daily Flow, a measurement of wastewater flow expressed in gallons per day, detelmined by dividing the total wastewater flow (in gallons) under consideration during a calendar year by the actual number of days in such year.

"Act 537" shall mean the Pem1Sylvania Sewage Facilities Act of January 24, I966, P.L. (! 965) 1535, No. 537, as amended, 35 P.S. §750.1, et seq.

"Act 537 Sewage Facilities **Plan"** shall mean the comprehensive plan, including all revisions thereto, for the provision of adequate sewage systems adopted by East Coventry and North Coventry, respectively, and subniitted to and approved by DEP as provided in and by Act 537 and the regulations ofDEP promulgated thereunder.

"Agreement" shall mean this document, its Exhibits, and all modifications, alterations, amendments and supplements hereto made and delivered in accordance with provisions hereof, which phrase sometimes is referred to in this document by use of such words as. "hereto", **"hereby'\ "herein'\ "hereof' or "hefeunder'**

"Authority" shall mean North Coventry Municipal Authority, a mnnicipality authority incorporated pursuant to the provisions of the Pennsylvania Municipality Authorities Act of 1945, pproved May 2, 1945, P.L. 382, as amended and supplemented.

"Authority's Treatment Plant" shall mean all facilities which shall be owned and operated by Authority, from time to time, for the treatment and disposal of wastewater, together with any additions or alterations therein.

"Authority's Wastewater System" shall mean the existing wastewater system, including, but not limited to, all interceptors, collection sewers, and pump stations, the Authority's Treatment Plant, and all related facilities, from time to time, connected therewith, located in and servicing North Coventry and all future additions and alterations thereto, exclusive of the East Coventry Wastewater Collection System; as that tennis hereinafter defined.

"Board" shall mean the governing body of the Authority.

"Construction Fund Account" shall mean the special battle account to be established and maintained by the Authority under Section 4.9 of this Agreement an\l to be used for the payment of all expenses of the Treatmenf Plant Expansion Project.

"Cost of **Treatment Per Gallon"** shall mean the quotient obtained by dividing the cost for operation of the wasteviater treatment plant during a given period of time by the number of gallons discharged by the plant during the same period of time.

"DEP" shall mean Department of Environmental Protection of the Commonwealth of Pennsylvania or its successor agency.

"Domestic Wastewater" shall mean the n01mal water-carried household and toilet wastes or wastewater from single or multi-family residences, buildings, structures, bu,sinesses, institutions, commercial establishments, and industrial establishments, specifically excluding industrial waste used in production of any commercial or industrial product or water to which there is any contribution of any deleterious, hazardous, toxic, or other waste as may be designated from time to time by the Ordinances, Resolutions, or administrative requirements adopted by the Board of the Authority.

"East Coventry" shall mean the Township of East Coventry, Chester County, Pennsylvania, a political subdivision of the Commonwealth of Pennsylvania, acting by and through its Board of Supervisors and, in appropriate cases, acting by and through its authorized representatives.

"East Coventry Wastewater Collection System." shall mean the wastewater collection system to be constructed in the Township of East Coventry, which will be owned and operated by East Coventry, and which will convey and transport wastewater so collected to the Authority's Treatment Plant under and in accordance with this Agreement.

"EDU" shall mean Equivalent Dwelling Unit, a measure of wastewater flow anticipated for planning purposes to be received from each Residence. For the purposes of this Agreement, the flow for each EDU shall be cakulated as 300 gallons per day.

"Engineer" shall mean a Person, who shall be Independent, appointed by the Board of the Authority or .the Board of Supervisors of a Township, qualified to pass upon engineering 9uestions relating to wastewater systems and having a favorable reputation for skill and. experience in connection with construction and operation of wastewater systems. Ifsueh Person shall be an individual, he shall be a professional engineer duly registered under laws of the Commonwealth of Pennsylvania. If such Person shall be a partnership, a corporation, or an association, it shall have a partner, officer, employee or member who is a professional ertgineer dnly registered under laws of the Commonwealth.

"EPA" shall mean the United States Environmental Protection Agency, or, where appropriate, the Administrator or other duly authorized official of said agency or its successor agency.

"Flow Proportioned Composite Sample" shall mean a sample of wastewater taken in propo1tion to the volume of flow in not greater than one hour increments for a specified period of time in order to accurately represent the wastewater characteristics in the total volume of wastewater being sampled.

"Gl'D" shall mean gallons per day of wastewater, calculated as total gallons recorded in a particular time period expressed in days divided by the total number or fractional part of days i,n the same time period.

"Grab Sample" shall mean an individual sample of at least I00 milliliters collected at a randomly-selected representative time over a period not exceeding 15 minutes (or as subsequently defined and amended by DEP relative to NPDES permits).

"Improved Property" shall mean any prope1ty, tract, lot, or parcel of real estate upon which is situate an occupied or occupiable strnctnre, building, establishment, use, or activity consistent with the-statutes of the Commonwealth of Pennsylvania, as would require wastewater facilities planning, service, and/or improvements as therein defined in Act 537, or other statutes of the Commonwealth of Pennsylvania, as amended,

"Independent" shall mean, with respect to an Engineer, a Person who is not a member of the Board, ·an officer or employee of the Authority or an elected or appointed official or , employee of East Coventry or North Coventry Township, or which is not a paiinership, a corporation or an association having a partner, di.rector, officer, member or substantial stockholder who is a member of the Board, an officer or employee of the Auth01ity or an elected or appointed official or employee of either Township; provided, however, that the fact that such Person is retained regularly by the Authoiity or the Municipality shall not make such Person an employee within the meaning of this definition.

"Industrial Establishment" shall mean any improved property used or intended for use, wholly or in part, for.the manufacturing, processing, cleaning, laundering, or assembly of any product, commodity, or article, or any other improved properly from which wastes, in addition to other than domestic wastewater, shall or may be discharged, and further subject to the terms, conditions, and provisions hereinafter set forth regarding industdal waste receipt, conveyance, pre-treatment, or treatment.

"Industrial Waste" shall mean any solid, liquid, or gaseous substance or fonn of energy emitted, expelled, exhausted, rejected, or escaping in the course of any industrial, manufacturing, trade, or business pfocess, or in the course of the development, recovery, or processing of natural resources, as distinct from Domestic Wastewater, as that term is herein defined.

"Maximum Monthly Average Daily Flow" shall mean a measurement of wastewater flow expressed in gallons per day, dete1mined by dividing the total wastewater flow (in.gallons) under consideration by the number of days since the last recorded.monthly reading, generally 31 days.

"MGD" shall mean inillion gallons per day of wastewater, calculated as the total gallons expressed in millions of gallons recorded in a particular time period divided by the total number or fractional part of days in the same tiine period.

"Month" shall mean a calendar 1nonth consisting of the days in the particular month (i.e. February has 28 or 29 days, depending \lpon leap year or not. April, June, September and November have 30 days, with the remaining months having 31 days).

"North Coventry" shall mean the Township of North Coventry, Chester Couilty, Pennsylvania, a political subdivision of the Commonwealth of Pe1111sylvania, acting by and through its Board of Supervisors and, in appropriate <;ases, acting by and through its authorized representatives.

"NPDES (National Pollution Discharge Elimination System) Permit" shall mean a permit or equivalent document or requirement issued pursuant to Section 402 of the Federal Water Pollution Control Act, also known as the Clean Water Act, 33 U.S.C.A. §1342.

"Project" shall mean the Treahnent Plant Expansion Project.

"Residence" shall mean any.room, group of rooms, motel unit, mobile home, or other enclosure occupied or intended for occupancy as separate living qua_rters by a family or oilier group of persons living together or by persons living alone, and shall include townhouse units, condominium units, apartment units, and apartments in converted single family dwellings, each such unit being deemed a single residence.

"Treatment Pinnt Expansion Project" or **"Pl'Oject"** shall mean the expansion of the Authority's Treatment Plant, as the same now exists, as such expansion is contemplated and provided for under and. by this Agreement.

"Wastewater" shall mean liquid and water carried Industrial Waste or Domestic Wastewater from dwellings, commercial buildings, industrial facilities and institutions, together with any groundwater, surface water and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the Autho1ity's Treatment Plant.

"24-Hour Composite Sample" shall mean a combination of at least eigh_t-sample aliquots of at least I00 n1illiliters, collected manually or automatically at periodic intervals during the operating hours of a facility over a 24-hour period. The composite must be flow propo1iional which can be achieved by one of three ways:

(1) Constant sample volume taken at time intervals, between samples, that are propmtional to the discharge flow.

(2) Constant time intervals between samples, with varying sample volume proportional to total discharge flow at the time of sampling.

(3) Constant time intervals between samples with varying sample volume proportional to total discharge flow since the last sample was taken.

(or as subsequently defined and amended by DEP relative to NPDES permits).

ARTICLE II

Aci-537 Plan Rcvisiom

2.1. North Coventry agrees that the Authority should prepare and present to North Coventrya revision to North Coventty's Act 537 Sewage Facilities Plan for adoption, providing for Authority's wastewater-treatment plant capacity to be increased to 2,010,000 gallons per day and to provide for the Authority's wastewater treatment plant to treat up to 510,000 gallons per day of wastewater from East Coventry.

2.2. East Coventry agrees to revise its Act 537 Sewage Facilities Plan to provide for up to 510,000 gallons per day of wastewater from East Coventry to be treated at the Authority's wastewater treatment plant, upon the capacity of the Authority's wastewater treatment plant being increased to 2,010,000 gallons per day, and upon the completion of the Treatrnent Plant Expansion Project.'_

2.3. Each party agrees to further amend its Act 537 Plans to be consistent with any approvals required by the Pennsylvania Department ofEnviromnental Protection. Each party shall endeavor to achieve approval by the Pennsylvania Department of Environmental Protection of the capacities stated above..

2.4. Each party shall attempt to implement its Act 537 Selected Plan Alternative in accordance with the proposed schedule found in Section 4.12 of this Agreement.

2.5. Each party to this Agreement agrees to prepare and submit an application for a Fifty Per Cent (50%) reimbursement provided by the Pennsylvania Department ofEnviromnental Protection for preiraration of Act 537 Plans and Special Studi.es.

2.6. East Coventryagrees to pay all costs incuned by North Coventry and Authority in planning and revising North Coventry's Act 537 Sewage Facilitie. Plan as the Plan relates to East Coventry Township. East Coventry shall have the opportunity to review and comment on the N01th Coventry/Auth01ity Engineer's estimated cost to prepare an Act 537 Plall'for North Coventry. These costs shall be a patt of the non-construction costs hereinafter required to be paid by East Coventr)'.,

ARTICLE III

Treatnwm Plant Expansion

3.1. Authority agrees that, provided East Coventry perfonns all of its obligations under this Agreement and pays to the Authority all amounts required under this Agreement, and upon obtaining the required approvals ofDEP, the Authority will constrnct an expansion of the Authority's wastewater treatment plant, as described in this Agreem_ent, and Auth01ity will, upon

completion of the Treatment Plant Expansion Project, accept and treat, in accordance with applicable regulations and permits, an amount of wastewater from East Coventry not to exceed an Annual Average Daily Flow, "AADF", of 510,000 gallons of wastewater per day, subject to the terms of this Agreement.

ARTICLE IV

Pro .dures to Implement Treatment Plant Exmmsion

4.1. The Authority's Engineer, Spotts, Stevens and McCoy, Inc., has prepared an opinion of estimated expansion project costs to increase the plant capacity for the Authority's wastewater treatment plant to 2,010,000 gallons per day. This opinion was last revised on December 3, 2001, to increase the total estimated Treatment Plant Expansion Project costs to $2,353,000.00. A copy of the December 3, 2001, cost opinion is attached hereto as Exhibit "A" and made a part hereof. The estimated Project costs listed below shall be revised in accordance with the Act 537 Plans of North Coventry and East Coventry Townships as approved by the Pennsylvania Department ofEnvironn1ental Protection. The components of the cost opinion are as follows:

Opinion of probable constrnction costs		
Major process units	$1,475,200.00	
Bonds and insurance (2%)	29,504.00	
Mobilization, demobilization (1.5%)	22,128.00	
General conditions (4%)	59,008.00	
Total Opinion of probable constrnction costs		$1,585,840.00
20% constrnction contingency		317,160.00
Non-constrnction (budget value only)		450,000.00
Total estimated expansion project costs		$2,353,000.00

4.2. The costs associated with increasing the capacity of the Authority's treatment plant consist of both construction and non-construction costs: Non-constrnction costs.include, but are not limited to, planning, legal, design, preparation of this Agreement, permitting, b1dding., redesign and rebidding (if necessary), construction observation, contract administration, testing, stait-up, anditor's fees, permit fees, and all other similar Project expenses.

4.3. East Coventry has requested to connect to the Authority's Treatment Plant shortly after the c,xccution of this Agreement to receive the immediate benefit of wastewater treatment before the Treatment Plant Expansion Project scope and costs are fully known or the construction is completed. There is a1isk that the scope, costs and completion time could change substantially as the Project develops. No planning, design or peimitting has yet been prepared or approvals obtained. No preliminaty treatment requirements for tlie Expansion Project have been received. No bids for the Expansion Projeel have been received. The premise of tho Project is that all

regulatory approvals can be obtained, and the concept for the plant expansion is based on 2001 regulations. East Coventry is to be solely responsible for the payment of all actual construction and non-constrnction costs of the 'freatinent Plant Expansion Project, which may be greater than or less than the estimated Project costs stated above in Section 4.1. The estimated costs of the ExpansionProject identified above arc cost opinions currently based on limited detail. East Coventry will be responsible for the payments due for all change orders and all other costs and expenses that arise dnri'ng the course of the Expansion Project: Neither North Coventry nor the Authority will be responsible for the payment of any of the Treatment Plant Expansion Project costs.

4.4. East Covenhy will pay Authority Three Hundred Thousand Dollars ($300,000.00) at the time of the signing of this Agreement, which amount is meant to be used for the payment of the engineering and other non-construction costs of the Treatment Plant Expansion Project anticipated through the time of the receipt of construction bids. This amount is to be placed in a separate Constrnction Fund Account by Authority and is to be used by Authority for the payment of actual invoices and costs incu1Ted in proceeding with the engineering fees, legal fees, pennits, and administration costs of the Treatment Plant Expansion Project. Payments will be made upon approval by Authority of Requisitions submitted. Copies of approyed Requisitions with supporting documentation will be provided to East Coventry.

4.5. After the execution of this Agreement and the Authority's receipt of the Three Hundred Thousand Dollars ($300,000.00) required in Section 4.4 above, the Authority's Engineer will begin the preparation of the requirements for DEP approval, design for bidding, and the bidding and contract drawings, specifications, and documents for the Treatment Plant Expansion Project, in accordance with the preliminary Anticipated Implementation Schedule in Seetion4.12 hereafter. Updated estimates of project costs (i.e. updated construction cost opinions, plus updated estimates of non-construction costs) shall be provideo by Authority to East Coventry at the following stages of the Expansion Project:

A. 30 days after completion of Preliminary Design Report. The Report will be based upon the Part 1 NPDES discharge pern1it issued by the Pennsylvania Department o.f Environmental Protection;

B. 30 days after.submittal of the Water Quality Management Part 2 Pennit application to the Pennsylvania Department of Environmental Protection;

C. 30 days prior to advertising for bids;

D. 30 days after receipt of bids.

East Coventry will be given the opportunity to review the design and bidding documents. East Coventry may make suggestions concerning these documetrts, but the decision concerning the final design, specifications, and bidding documents shall be made solely by Authority.

4.6. After receipt of bids, and provided that the total of the consttvction contract bids received from the apparent lowest responsible bidders does not exceed One Hundred Ten Per Cent (110%) of the last updated opinion of probable constrnction costs issued by \he Authority's Engineer prior to bidding, the Authority may proceed with the awarding of the constrnction contracts without any approval from East Coventry.

4.7. rt; after receipt of bids, the total of the constrnction contract bids received from the apparent lowest responsible bidders does exceed One Hundred Ten Per Cent (110%) of the last updated opinion.of probable construction costs issued by the Authmity's Engineer prior to bidding, Authority and East Coventry shall review the bids received and collectively evaluate what revisions, if any, may be possible to reduce the cost of the construction contracts. If, within forty (40) days of the receipt ofbids;both the Authority and East Coventry agree that the contracts should be awarded based upon the bids received, the Authority shall proceed with the awarding of the constrnction contracts.

Ifit is necessary to redesign the plant expansion and/or rebid the construction contracts, a revised opinion of probable constrnction costs shall be issued by the Authority's Engineer. After receipt of the "rebid", and provided that the total of the constn1ction contract bids received from the apparent lowest responsible bidders does not exceed One Hundred Ten Per Cent (110%) of the revised opinion of probable constrnction costs issued by the Authority's Engineer prior to the "re-bidding", the A,1thority may proceed with awarding of the constrnction contracts without any approval from East Coventry.

.If, after receipt of the "rebid", the total of the constrnction contract bids received from the apparertt lowest responsible bidders does exceed One Hundred Ten Per Cent (110%) of the revised opinion of probable constrnction costs issued by the Authority's Engineer prior to rebidding, East Coventry agrees that it will either:

A. Within forty (40) days of the receipt of the rebids, agree that the Authority proceed to award the consttuction contracts.

B. Stop any further connections to East Coventry's collection system that discharge into the Authority's system, until the Treatment Plant Expansion Project is funded at One Hundred Ten Per Cent (110%) of the total constructio.n contract bid amounts. (Note: the solution to the.eventual funding may be the result of further redesign, further rebidding, and/or further negotiation and cost sharing between the parties, or other alternatives, etc,)

4.8. Within thirty (30) days after the award of the construction contracts by the Authority, East Coventry agrees to pay to the Authority any additional sum of montly necessary to provide that the Authority's Construction Fund Account contains a balance at least equal to the remaining estimated non-construction Project costs and One Hundred Ten Per Cent (110%) of the Project construction costs (based upon the construction contracts awarded).

4.9. The atnounts paid by East Coventry to the Authority under Sections 4.4, 4.8, and 7.4(B) of this Agreement will be placed in the Auth01ity's Construction Fund Account by the Authority, and will be used by the Authority for the payment of construction costs, non-construction costs, change orders, and related Treatment Plant Expansion Project expenses. The Construction Fund Account shall be an interest-bearing account, with interest being used for the Project costs. Payments will be made from the Constrnction Fund Account upon the approval of .the Authority of Requisitions submitted. Copies of Requisitions with supporting documentation scheduled for action by the Authority will be provided to East Coventry seven (7) days prior to the Authority meeting where action is scheduled to be taken on the Requisitions.

The Authority's Engineer shall monitor the balance remaining in the.Constrnction. Fund Account, and compare the remaining balance with the amount of work, including change orders, remaining to complete the l'roject. If, during the const1{1ction phase of the Treatment _Plant Expansion Project, the amount remaining inJhe Construction Fund Account is less than the amount at any time or times determined by the Authority's Engineer to be needed to complete the wastewater Treatment Plant Expansion Project, East Coventry will pay to Authority the additional amount or amounts determined by the Authority's Engineer and the Authority to be necessary. The additional amount(s) are to be paid by East Coventry within thirty (30) days of the notification from the Authority to East Coventry of the additional amount(s) which, from time to time, are necessary.

4.10. After the Certificate of Substantial Completion has been issuec! by the Authority's Engineer and approved by the Authority, East Coventry will be a bulk customer of the Authority's expanded wastewater treahnent plant, subject to the limitations in this Agreer,nent _The Authority shall, at all times, be the sole owner of the original treatment plant facilities and of all of the additional treatment plant facilities constructed during the Treatment Plant Expansion Project.

4.11. After final payment to all of the constrnction contractors, the Authority's Engineer v.rill issue a Report of Final Project Costs. Provided that all payments required by this Agreement have been made by East Coventry to Authority, after approval by the Authority of the Report of Final Project Costs, any balance remaining in the Constrnction Fund Account, including remaining interest, if any, shall be paid to East Coventry.

4.12. Anticipated Implementation Schedule. A preliminary schedule for implementing the Project is included in this Section. The schedule is labeled "preliminary" at this time because the full scope of some activities in not fully known, nor is the response.time from governmental and regulatory agencies known. The schedule is subject to chang as the Project develops.

Task	Estimated Duration (months)	Cumulative TLme{mQ!1ths)
I - DEP conditional approval ofE. Coventry Act 537 Plan		
2 - Intennunicipal Agreements executed		
3 - Approval to receive limited flow from East Coventry prior to completion of Expansion Project (Note I)		
4 - Prepare and submit N. Coventry Act 537· Plan of Study		
5 - DEP approval ofN. Covenlty Act 537 Plan of Study	2	start of ti111e
6 - Prepare N. Coventry Act 537 Plan for Plant Expansion	3	3
7 - DEP review and approval ofN. Coventry Act 537 Plan	4	7
8 - Design, pe1mit applications, bid.documents (12 month duration)		
8(a) Preliminary Design Report and 30% Design Review	4	11
8(b) 60% Design Review	3	14
8(c) Submit Part 2 Permit Application to DEP	2	16
8(d) 95% Design Review	(2)	
9 - DEP review complete, all permits issued	4	20
8(e) Finalize Plans, Specifications, and Bid Documents	I	21
10 - Authorization to advertise for bids	1	22
1 J - Copy, distribute documents, receive bids	2	24
1'2 - Review bids, bid recommendation	1	25
13 - Notice to East Coventry of required funds, if any	---	25
14- Receipt of project funds from East Coventry (30 days)	1	27
15 - Issue Notice of Award to lowest responsible bidders	---	27
16- Preparation, review, exccut.ion of contract documents	2	29
17 -· Issue Notice to Proceed	I	30
18 - Construction (14 month duration)		
18(a) 30% Construction review	4	34
18(b) 60% Constrnction review	4	38
!8(c) Substantial Completion, Certificate of Substantial Completion to be issued, full flow allocation for East Coventry now		

available	4	42
18(d) Final inspection, final payment to contractors	2	44
19 - Project complete, Report of Final Project Costs to be issued, unused project fonds rntumed		45

Notes:
:(1) Beginning of actual discharge of flow from East Coventry is dependent on construction of certain East Coventry conveyance facilities. That construction will occur concurrently with the Expansion Project, but does not further impact completion of the above tasks.

ARTICLEV

Payment to Authority for Share ofExis.ting Fadlities

5.1. The Autho1ity has dete1mincd that the net cost basis of the Authority's existing treatment plant facilities is Five Million Six Hundred Thirty-eight Thousand Four Hundred One Dollars ($5,638,401.00). This cost basis is calculated based upon ihe actual expenditures at th treatmei,t plant since I960 and escalated to September, 2002 values, as provided in Exhibit H.

5.2. In addition to all amounts required to be paid by East Coventry to Authority for the • Treatment Plant Expansion Project, East Coventry agrees to pay to Authority One Million Four Hundred Sixty-four Thousand Dollars ($1,464,000.00), which represents East Coventry's· contribution toward the portion of the Authority's existing wastewater treatment plant anticipated to be used by East Coventry and East Coventty's conhibution toward the Purchase Price of the additional 4.45 acres of land being purchased by the Authority from East Coventry Township. The required payment of One Million Four Hundred Sixty-four Thousand Dollars· ($1,464,000.00) is based upon East Coventry's allocation ofSJ0,000 gailons of available treatment capacity per day of the 2,0I 0,000 gallons per day total treatment plant c1 1pacity available after completion of the Treatment Plant Expansion Project. East Covenfry's 25.4% of $5,638,401.00 equals $1,432,154.00, together with $31,750.00 toward the land acquisition, for a . total of$1,463,904.00, which is rounded to $1,464,000.00. East Coventry agrees to pay to the Authority the $1,464,000.00 as follows:

(a) $1,250,000.00 at the same time as East Covenhy is required to pay to the Authoiity the 110% of the total of the construction contract bid amounts received .from the apparent lowest responsible bidders for all of the required consh'Uction contracts under Sections 4,6 and 4.7 of this Agreement.

(b) $214,000.00 on or before thirty (30) days afte1' the issuance of the Certificate of Substantial Completion by the Auth01ity's Engineer.

In accordance with the provisions of Section 7.4 of this Agreement, payment by East Coventry for sewer permits in excess of the Project construction costs and Project non-

constrnction costs shall be credited against the above $1,464,000.00. The above payments, as received, will be deposited to the Atithority's accounts.

5.3. The payment by East Coventty of One Million Four Hundred Sixty-four Thou·sand Dollars.($1,464,000.00) is a fixed cost, and is not subject to fu1ther cost escalation after execution of this Agreement.

5.4. All of the Authority's existing treatment plant facilities shall continue to be solely owned by the Authority. No payments made by East Coventry pursuant to any provision of this Agreement shall entitle East Coventry to ownership of the existing or expanded treatment plant, or any interest therein, except for the treatment capacity as expressly granted to East Coventry pursuant to this Agreement.

ARTICLE VJ

East Covently Sewer System

6.1. East Coventry shall, at its sole cost and expense, construct its own wastewater collection facilitiei within East Coventry Township. The East Coventry wastewater collection system shall be solely owned by East Coventry, and East Coventry will be responsible for the proper repair and maintenance of the East Coventry wastewater collection system.

6.2. East Coventiy's Engineer shall inspect the constrnction of the East Coventry wastewater collection system, and shall, upon completion of each section of constrnction of the East Coventry conveyance/collection system, issue a written Certificate of Completion to East Coventry and the Authority for each section of the constrnctionwhich could discharge wastewater for treatment that this section of the East Coventry wastewater collection system has been properly completed and is available for conveyance of wastewater to the Authority's wastewater treatment plant.

6.3. East Coventry's wastewater collection system shall connect to the Authority's treatment plant facilities at a location or locations approved,by the Authority:

6.4. East Coventiy service area is the East Covent1y Act 537 Plan sqwer service area as approved by the Pennsylvania Department of Environmental Protection. The initial service area proposed by East Coventry is generally north ofBickel's Run and north of Pigeon Creek and within the East Coventry Township _boundaries, as shown on Exhibit "C" attached hereto. Nevertheless, East Coventry may not exceed the flow limitations of this Agreement, or any modifications thereto..

6.5. Existing Improved Properties located in East Coventty Township which are cunently connected to the Authotity's wastewater collection and treatment system will remain customers of the Authority and will not become cu.stomers of East Coventry. The flows from

these Improved Properties will not be included as a part of the East Coventry flow allocation under this Agreement.

ARTICLE VII

. Acceptance of East Coventry Sewage Flows Prior to Completion of Treatment Plant Expansion Project

7.1. The Authority has previously established 300 gaUons per day as the equivalent flow for each residential unit or for each EDU. East Coventry agrees with the use of300 gallons per day per EDU for the period prior to the completion of the Treatment Plant Expansion Project.

7.2. Within 120 days of the date of this Agreement, East Coventry shall purchase sewer connection permits from the.Authority for 800 EDU's of capacity by payment to the Authority of Four Million Six Hundred Thousand Dollars ($4,600,000.00). Credit shall be given to East Coventry for the Three Hundred Thousand Dollars ($300,000.00) paid.under Section 4.4 of this Agreement. Upon receipt of the net payment of Four Million Three Hnndred Thousand Dollars ($4,300,000.00), the Authority shall issue ii bulk sewer permit for these 800 EDU's. East Coventry, in its sole discretion, shall thereafter allocate the EDU's which East Coventry has purchased to those property owners within East Coventry Township. East Coventry shall give· written instructions from its Township Secretary to North Coventry Township and the A,uthority to sign sewer modules for specific projects within East Coventry Township which have been allocated wastewater capacity by East Coventry as a part of the 800 EDU's purchased herein, and stating the number ofEDU's allocated to that particular project by East Coventry.

7.3. The Autho1ity agrees to begin accepting wastewater from the East Coventry collection system upon approval of sewer planning modules from East Coventry projects by DEP and upon the receipt of the Certificate of Completion by East Coventry's Engineer that the East Coventry wastewater collection system has been properly completed.

7.4. Upon receipt of the Four Million Three H1mdred Thousand Dollar ($4,300,000.00) payment from East Coventry, the. Authority shall:

A. Deposit One Million Four Hundred Sixty-fo\lr Thousand Dollars ($1,464,000.00) as funds of the Authority, which represents the amount required to be paid by East Coventry as its contribution under A1ticle V of this Agreement.

B. Deposit Two Million Eight Hundred Thhty-six Thousand Dollars ($2,836,000.00) into the Authority's Construction Fund Account to be credited by the Authority against the payments required to be made by East Coventry for the Project construction costs and the Project non-construction costs that are required to be paid by East Coventry under Article IV of this Agreement.

7.5. Until completion of the Treatment Plant Expansion Project, East Coventry shall give no allocation to industrial users discharging process wastewater that would require pre-treatment of sewage effluent and wastewater in accordance with the United States Environmental Protection Agency (U.S. EPA) guidelines, procedures and categorical standards published in 40 CPR and future revisions thereto.

7.6. By the 10th day of each month after East Coventry has begun to allow connections to tts wastewate!' collection system, East Coventry will provide the Authority with a written report of the number ofsingle family units and other EDU's which have been connected to the East Coventry wastewater collection system during the previous month and the date of each connection based upon "Use and Occupancy Permits" as have been issued for the particular uses connected to the East Covenlly Township collection and conveyance system. Sewer rental bills during the first quarter that an EDU is com1ected will.be pro-rated on a daily basis in that qna1ter, beginning with the date that the East Coventry Township's Use and Occupapcy Permit was issued. Quarterly bills for all connections made to the East Coventry wastewater collection system will be sent as a bulk bill to East Coventry on or about the 15th day following each calendar qua1ter. In computing the bill to East Coventry, the amount of the quarterly sewer rental for each EDU connected to the East Coventry wastewater collection system will be the same amount charged by the Authority to its customers (currently One Hundred Dollars {$100.00} per quarter). Payment of invoices shall be as stated in Section 10.7 of this Agreernent. These quarterly EDU charges to East Coventry shall continue untilthe Authority's Engineer'has issued the Certificate of Substantial Completion for the Treatment Plant Expansion Project.

7.7. The maximum available EDU's for purchase by East Coventry shall remain at 800 EDU's until the Ce1tificate of Substantial Completion has been iss1;ed by the Authority's Engineer for the Treatment Plant Expansion Project.

7.8. Until such time as the Certificate of Substantial Completion of the Treatment Plant Expansion Project has been issued, it is recognized that the capacity for the Authority's treatment plant to accept wastewater from East Coventry Township could be limited by cominitted EDU's within North Coventry Township and the actual flows recorded at the Authority's wastewater treatment plant. East Cpventry releases Authority, and its Board members, from any and all claims, actions, causes of action, of any kind whatsoever, both in law or in equity; that East Coventty now has or may have, should. the Authority be unable to accept wastewater flow from East C.oventry in accordance with this Agreement because ofdelays in the completion of the .construction of the expansion of the Authority's treallnent plant, the cettification that the treatment plant has been completed, or because of a prohibition, ban, or restriction from accepting new connections to the Authority's sewer treatment plant imposed by the County of Chester, the Commonwealth of Pennsylvania, the DEP, the Enviromnental Protection Agency, or• any other department or agency of the Conllllonwealth of Pennsylvania or the United States of America, or any governmental unit, agency, or subdivision thereof, whatsoever. All projections and evaluations shall be perfotmed by the Autlicirlly or its Engineer in accotdance with Title 25, Chapter 94, of the Pennsylvania Department ofEnviromneritai Protection Rules and Regulations in effect at the time the evaluation is perfomi.ed.

7.9. At any time that the treatment plant, after completion of the Project, is repermitted at a higher capacity, then the excess of such total actual cajiacity over the designed and rated capacity shall he allocated Seventy-four and Six-Tenths Per Cent (74.6%) to Authority and Twenty-five and Four-Tenths Per Cent (25.4%) to East Coventty. Likewise, after the completion of the Project, if the total actual treatment plant capacity shall be less than the design or rated capacity of the upgraded treatment plant due to a change in regulations to more stringent effluent .standards or to other causes beyond the control of the Authority, then such.reduced capacity shall he similarly ailocated, Seventy-four and Six-Tenths Per Cent (74.6%) reduction to Authority and Twenty-five and Four-Tenths Per Cent (25.4%) reduction to East Coventry, as a reduction in the respective capacities after the completion of the Project.

ARTICLE VIII

Flow Meteling and Wastewater Sampling.

8.1. All wastewater flow discharged from one party's system into another party's system shall be metered. Flow meters shall be the continuous measming type that establishes daily flow measured as gallons per day, that includ.e a totalizer and recording chatt and may utilize digital recording of flow data with telemeteling.

A. All flow that is pumped or flow that is under pressure in a.pipeline shall utilize a. magnetic flow meter having a minimum system accuracy at the meteling point of plus. or minus three per cent of actual flow (meteling system includes primary measuring element, transmitter, totalizer, recorder and re-transmitter.)

B. All flow that is not pumped, and is conveyed by gravity, shall utilize an area-velocity flow meter having a minimum system accuracy at the meterlng poi.nt of plus or minus five per cent of actual flow (metering system includes primary mcas\ll'ing element; transmitter, totalizer, recorder and re-transmitter). In addition to the area-velocity flow meter, 'the installation shall include a standard flume (Palmer Bowlus, Parshall or other non-clog design) which shall be used as a calibration standard for the area-velocity flow meter.

Flow meter system accuracy shall be determined as the square root of the sum of the squares of the accuracy statement of each individual component of the system. All flow meter installations shall be installed in accordance with the manufacturer's recommendations and good design practice. Based on the type of meter installation, these recommendations may include requirements for smooth, tranquil upstream flow conditions, smooth, level flow through fli:lmes, free discharge from flumes, minimum length of straight pipe upstream of the primary measuring device, NEMA 4X classification, and corrosion resistance.. Flow meter requirements are subject to change to incorporate future improveh1ents in technology and the most i-eceilt specifications from the manufactqrer.

Flow Metering of East Coventry Flows Discharged Into Authority System

8.2. The East Coventry sewer service area, under consideration in this Agreement, is proposed to be connected to the Authority's wastewater facilities at only one location. That location is at the Authority's wastewater treatment plant. A magnetic flow meter will be installed on the discharge pipe from the East Coventry's collectio11 system, where the pipe enters ,the wastewater treatment plant. The magnetic' flo\v meter will include a totalizer, recording chart, and meter bypass for maintenance of the meter. The cost of the flow meter is included in the cost for the Treatment Plant Expansion Project.

8.3. Upon completion of construction, the Authority will own any flow meters that measure flow from East Coventry into the Authority system. The Authority shall be.responsible to schedule with the meter manufacturer or other qualified testing agent, on at least a semi" annual basis, the calibration of the flow meter. Copies of the meter calibration ce1iification shall be sent to East Coventry. East Coventry may contest the meter calibration certification report. within thirty (30) days ofreceipt of the meter calibration report. If the meter calibration certification report is not contested within the thirty (30) days, the report shall be deemed accepted, and not subject to further dispute.

8.4. The flow meter shall be owned by the Authority, and the Authority shall be responsible for the operation, maintenance, and replacement of the flow meter. Where clearly identifiable, the costs of operation, maintenance and replacement of the flow meter will be invoiced to East Covep.try. Certain costs that are common for all equipment/instruments at the plant, like electric, which is not easily definable for the specific flow meter, will be included in the overall operation and maintenance costs of the treatment plant, which costs will be shared by East Covenlty and Authoi-ity in accordance with this Agreement.

8.5. ln the event the flow meter is out of service, an estimate of flow will be perfonned by the Authority based on flow records of the recent past. The estimate will incorporate sound engineering prinqiples, and be adjusted as necessary to account for any unique circumstances. Unique circumstances that would require an adjustment to h.istmical flow records, would include items like extreme wet weather events (hurricane, flood), tlie recent addition of.a large number of connections in East Coventry that would not be reflected in the historical flow records, or other circnmstances. If the East Coventry sewer service area is serviced by a water system, water meter readings maybe utilized to perfonn the estimate. The Authority will provide an explanation and calculations for any estimated flows.

8.6. East Coventry connections to the Authority's system at additional point(s) other than contemplated in Section 8.2.can only be made upon approval of the Authority. A flow meter will be required at each point(s) of connection. The flow meter shall be similar in all respects to the meter described above. Design and specifications for additional flow meters shall be submitted to the Authority for review and approval. The costs for flow meters at additional connection points than that described in Section 8.2 shall be paid entirely by East Coventry. Once construction is certified to be complete by the Engineer for East Coventry, and the meter is

installed, calibrated, and ce1tified, the Authority will assume responsibility thereafter for calibration and any future maintenance or replacement. The actual costs of calibration, operation, maintenance and replacement of the flow meter will be included in the operating and maintenance costs of the treatment plant to be shared by East Coventry and Authority in accordance with this Agreement.

8.7. If wastewater flows are insufficient at future points of connection to provide an accurate measurement by a flow meter, the amount offlow·shall be determined by the Authority. First, the Authority will determine the number of-EDU's connected in the non-metered sewer service area of East Coventry. The number ofEDU's will be based on the Autho1ity's adopted "Schedule ofEDU's for Type of Use". Next, the number ofEDU's will then be multiplied by the Authority's then prevailing unit rate of flow for an EDU (currently, the Authority ha established 300 gallons per day as the equivalent flow for each residential unit or for each EDU). The resultant product will be the calculated average daily wastewater flow from the non-metered sewer service area in East Coventry.

The calculated average daily wastewater flow will then be multiplied by the number of days in that month to dete1mine the total flow that month fi:om the non-metered sewer service area, which will then be added to the metered jlow from the East Coventry collection system to determin() the total flow from the East Coventry collection system that is discharged into the Authority's wastewater facilities. This value for total flow will be used in A1ticlc 10 to calculate the charges for treatment of East Coventry wastewater.

The Authority has previously established 300 gallons per day as the equivalent flow for each residential unit or for each EDU. After completion of the Expansion Project, East Coventry may request the use of a different value, and the Authority will consider the request. Any request to use a different value should include documentation that incorporates sound engineeling principles. An example method to calculate the gallons per day for an EDU would be to divide the total recorded daily flow through an individual collection system flow meter by the number ofresidential units of the same or similar type connected to and flowing through_ that individual flow meter.

8.8, Samples of wastewater discharged by East Coventry to the Authority's wastewater facilities may be sampled and analyzed by the Authotity on a random basis to insure compliance with the terms of this Agreement. However, compliance with the allowable discharge criteria shall be the responsibility of East Coventry. The costs of sampling and l1 1boratory analysis will be included in the operation costs of the treatment plant.

Flow Metering of Authority Flows Qiscbarged into the East Coventry Collection System

8.9.. There is no sewer service area in North Coventry under consideration at this time that is proposed to be connected to any East Coventry collection system. If, however, at some fuh1re time, due to topography, cost effectiveness, etc., a sewer se1vice area from Notth Coventry is connected to an East Covenhy collection system, all wastewater flow discharged from North

Coventry into.the East Coventry collection system shall be metered. Meler requirements shall comply with Section 8.1.

8.10. Upon completion of construction, East Coventry will own any flow meters that measure flow from Authotity into the East Coventry system. East Coventry shall be responsible to schedule with the meter manufacturer or other quali_fied testing agent, on at least a semi-.annual basis, the calibration of the flow meter. Copies of the meter calibration certification shall be sent to Authority. The Authority may contest the meter calihration certification report within thirty (30) days ofreceipt of the meter calibration report. If the meter calibration certification report is not contested within the thirty (30) days, the report shall be deemed accepted, and not subject to further dispute.

8.11. The flow meter shall be owned by East Coventry, and East Coventry shall be . responsible for the operation, maintenance, and replacement of the flow· meter. The actual costs of operation, maintenance, and replacement of the flow meter shall be the responsibility of the Authority and invoiced in arrears quarterly by-East Coventry.

.8.12. In the event the flow meter is out of service, an estimate of flow will be performed by East Covenhy based on flow records of the recent past. The estimate will incmporate sound engineering principles, and be adjusted as necessary to account for any unique circumstances. Unique·circumstances that would require an adjustment to historical flow records' would include items like extreme wet weather events (hurricane, flood), the recent addition of a large number of connections in No1ih Coventry that would not be reflected in the historical flow records, or other circumstanc,es. If the Authority sewer service area is serviced by a water system, water meter readings may be utilized to perfonn the estimate. East Coventry will provide an explanation and· calculations for any estimated flows.

8.13. Authority connections to the East Coventry system-can only be made upon approval of East Coventry. A flow meter will be required at each point(s) of connection. The flow meter shall be similar in all respects to the meter described in Section 8.1. D'esign and specifications for flow meters shall be submitted to East Coventty for review and approval. The costs for flow meters shall be paid entirely by Authority, Once constrnction is certified to·be complete by the Engineer for Authotity and the meter is installed, calibrated and cetiified, East Coventry will assume responsibility thereafter for calibration and atiy future maintenance or replacement. The actual costs of calibration, operation, maintenance, and replacement of the flow meter will be the responsibility of Authority and invoiced in arrears quarterly by East Coventry.

8.14, If wastewater flows are insufficient at future points of connection to provide an accurate measurement by a flow tneter, the amount of flow shall be detennined by East Covently. First, East Coventry will dete1ruine the number ofBDU's connected in the non-metered sewer servke area of Authority. The number ofEDU's will be based on the Authority's adopted "Schedule ofEDU's for Type of Use". Next, the number of EDU's will then be multiplied by the Authority's then prevailing unit rate of flow for an EDU (currently, the

Authority has established 300 gallons per day as the equivalent flow for each residential unit or for each EDU). ·The resultant product will be the calculated average daily wastewater flow from the non-metered sewer service area in No1th Coventry.

The calculated average daily wastewater flow will then be multiplied by the number of days in that month to determine the total flow that month from the non-metered sewer _service area, which will then be added to the metered flow from the Authority's collection system to determine the total flow from the Authority's collection system that is discharged into the East Coventry collection facilities. This value for total flow will be deducted from East Coventry total wastewater flow used in Article IO to calculate the charges_ for treatment of East Coventry wastewater.

The Authority has previously established 300 gallons per day as the equivalent flow for each residential unit or for each EDU. If, in the future, connections from an Authority sewer service area are collllected to the East Coventry collection system, the Authority m·ay request the use of a different value, and East Coventry will consider the request. Any request to use a different value should include documentation that incorporates sound engineering ' principles. An example method to calculate the gallons per day for an EDU would be to divide the total recorded daily flow through an individual collection system flow meter by the number of residential units of the same or similar type connected to and flowing through that individual flow meter.

8.15. Samples of wastewater discharged by Authority to the East Coventry collection system may be sampled and analyzed by East Cov ntry on a random basis to insure compliance with the tern1s of this Agreement. However, compliance with the allowable discharge ctiteria shall be the responsibility of Authority. The costs of sampling and laborato1y analysis will be . the responsibility oftheAuthority.ifthe Authoi:ity is not in co1npliance with the standards contained in this Agreement. If the Authotity is in compliance with the standards in this Agreement, then the costs shall be b01'ne by East Coventry.

AR'fICLEIX

Flow Allocation and Allowabie Strength of Wastewater

9.1. Upon completion of the Treatment Plant Expansion Project and issuance of a Certificate of S-µbstantial Completion by the_ Authoriti's Engii1i,er, the Authority will allocate . 510,000 gallons per day (gpd) of wastewater t;reatment capacity to East Coventry. East Coventry agrees that its flow is limited to specific Discharge Criteria, both flow and qua1itativc, as defined in Exhibit "D", attached hereto and made a part hereof. Further, East Coventry agrees that it will not discharge any Prohibited Wastes as defined in Exhibit "E", attached hereto and made a part hereof.

9.2. The allocation of510,000 gpd is subject to regulatory action and acts of nature, and therefore shall not be construed to be an absolute value. Changes in the discharge criteiia of the treatment plant, or changes in the definition of standard strel lgth domestic wastewater by DEP or other regulatory agencies, may result in a lesser allocation. Acts of nature, beyond the control of the Authority, including hunicanes, floods, tornadoes, etc., may temporarily delay East Covenlty's full use of the allocated capacity.

9.3. Compliance with all Discharge C1iteria as stated in Exhibit "D" shall be the sole responsibility of East Covenlty. On a monthly basis, the Authmity will share flow met_ering data, and will share the results of any periodic sampling that is conducted. It is not anticipated that the Authority would initiate a sampling of flow from East Coventry at the early stages when there will be limited initial flow from East Coventry unless the Authority's plant is not meeting the criteria under the Authority's permit or an unusual occul l'ence is noted at the Authority's treatment plant.

9.4. The Authority will notify East Coventry, in writing, when the flow from East Coventty is measured at 80% ofits Ann,ual Average Daily Flow as shown on Exhibit "D". Upon notification, East Coventty shall implement a Wasteload Management Program to monitor and, if necessary, restrict additional connections to its system in order to meet East Coventry's responsibility that the Flow Criteria listed in Exhibit "b" are not exceeded. The Authority will provide similar notice to East Coventry when the flow from East Coventry is measured at 80% of its maximum monthly average flow, maximum weekly average flow, maximum daily flow, or peak instantaneous flow as shown on Exhibit "D". Upon notification, East Coventry agrees to investigate and, thereafter, report to the Authority, within ninety (90) days of the date of the Authority's notice, East Coventry's plan to manage/reduce flows in order to not exceed the Flow Criteria.

9.5. The Authority will notify East Coventry, in writing,'when the flow from East Coventry is measured at 90% of its Anmial Average Daily Flow as shown on Exhibit "D". To prevent an overload and/or permit violation to the treatment plant, East Coventry shall thereatler consult with the Authority before issuing any building pe11nits which would provide for connections of Improved Prope1ties to the East Coventry wastey.,ater collection system. The Authority will provide similar notice to East Coventry when the flow from East Coventry is measured at 90% of its maximum monthly average flow, maximum weekly average flow, maximum daily flow, or peak instantaneous flow as shown on Exhibit "D". Upon notification, East Covenhy agrees to investigate and, thereafter, report to the Authority, within ninety (90) days of the date of the Authority's notice, East Coventry's written plan to manage/reduce flows in order _to not exceed the Flow Criteria. The written plan shall include; but not be limited to, a description of the proposed methods to reduce flows, a schedule to limit new connections and/or a commitment to plan for, and fund additional treatment capacity. The Authority shall review East Coventry's plan and may make suggestions concerning the plan. The Authority's review shall be to determine if the plan is reasonable, incorporates proven methods to manage/reduce flows and is implementable. The Authority will notify East Coventry, in writing, when the pla is acceptable. East Coventry agrees to consider suggestions from the Authority.

If, at any time after the ninety (90) day investigation period, East Covently's flows exceed 95% of the allowable flows due to infiltration and/or inflow problems, East Coventry agrees that it will not issue any building permits for uses on Improved Properties which would be connected to the East Covently wastewater collection system, unless _approval for the connection is made in advance by the Authority.

9.6. The Authority·will notify East Coventry, in writing, if the monthly flow from East Coventty exceeds the maximum monthly average flow and/or exceeds the annual average daily flow, as shown on Exhibit "D", for a period of ninety (90) consecutive clays.

A. Upon notification of exceeding ;my of the Plow Criteria in Exhibit "D", East Coventry agrees to.:

(1) Stop issuing any further building permits for uses which would connect to the East Coventry wastewater collection system, and

(2) Investigate and thereafter submit to the Authority, within one hundred twenty (i20) days of the date of thy Authority's notice, an Overload Remediation Plan to manage/reduce flows in order to maintain compliance with the Flow Criteria. Said Overload Remediation Plan shall include an implementation schedule showing the dates on which each step of the plan will be undertaken. Activities include, but may not be limited to, planning, design, financing, and construction, as may be necessary to provide the required capacities and/or eliminate the excess flows.

The Plan shall be reviewed by the Authority, and if deemed acceptable, a limited number of connections may be allocated to East Coventry during the implementation of the. Overload Remediation Plan.

B. If, upon completion of the Overload Remediation Plan, East Coventry is able to ·demonstrate a reduction of flows, then restrictions/prohibitions to further builcl1ng'permits and connections, that were temporarily instituted by East Cove1 1try, may be removed.

C. If, upon the completion of the implementation of the Overload Remediation Plan, East Coventry is not able to demonstrate a reduction of flows, then further connections to the .East Coventry system shall be prohibited until such time as additional treatment capacity has been made available at the plant and provisions have been made to increase ·the flow allocation to East Coventry.

D. If, ninety (90) days after notification, the East Coventry monthly flow exceeds the Flow Criteria stated in Exhibit "D", Subsection I, East Coventry agrees to pay Authority a surcharge on the excess flow above the allowable flow. The surcharge for flow in excess of the allowable flow shall be calculated at the rate of Two Hundred Per Cent (200%), multiplied by the cost of treatment per gallon of wastewater during the month, multiplied by the number of gallons from East Coventty that are in excess of the Maximum Monthly Average Flow. If the

Authority determines that East Coventry is not making a good faith effort to reduce the excess flows, at ihe end of the calendar year, a similar Two Hundred Per Cent (200%) surcharge is to be paid by East Coventry if the Annual Average Daily Flow from East Coventry exceeds the flow criteria.

E. East Coventry agrees to·pay any fines that are imposed by DEP or any other _governmental agency due to violations at the treatment plant that are attributable to East Covenlty's exceeding the Flow Criteria.

F. In addition to the penalty provisions of this Article, if: _at any time, the flow from East Coventry's wastewater collection system exceeds the Flow Criteria, Authority, to the extent_ pem,itted by law, may pursue any one or more of the following additional remedies:

(!) Require East Coventry to purchase reserve capacity, if the Authority determines that such capacity exists, and the Authority is willing to sell such capacity, with the price being established by the Authority;

(2) Pursue an injunction or any other equitable remedy in any Comt or agency of competent jurisdiction;

(3) Pursue damages or any other legal remedy in any Court of competent jurisdiction; or

(4) Pursue any other remedy or administrative order available at law, in equity, or administrative proceeding or otherwise.

9.7. The Authority will advise East Coven!ty, in writing, if the Authority's random sampling of the discharge from East Coventry does not comply with the Qualitative Criteria on Exhibit "D", or if the discharge contains any Prohibited Waste listed on Exhibit "E". Upon notification, East Coventry shall identify and eliminate the source of the Prohibited Waste.

A. The Authority will impose a surcharge for any non-conforming wastewater discharged from East Coventry to the Authority's system. The surcharge will be based on a composite flow propottioned sample taken at the point of connection to the Authority's system.

Tht: surcharge will be calculated based upon the following formula:

$$\% \text{ Stircharge} = 0.S(BOD_5 - 204) + 0.4(TSS - 240) + 0.05(NH_3\text{-}N - 30) + .05\ (P - 10)$$

The cost of treatment per gallon is multiplied by the percent surcharge for nonconfotming wastewater, and the resultant product is then added to the cost of treatment per gallon of wastewater to determine the Total cost of treatment per gallon. The Total cost of treatment per gallon will be multiplied by the total gallons recorded (and/or calculated), as discharged from East Coventry to Authority during that billing period, and then multiplied by the·

number of days in the billing period to determine the total treatment charge for East Coventry wastewater.

Notes:

1. When a value of BOD, TSS, NH_3N, and (or) Pis less than the maximum _allowable concentrations set fo1th i11 the fotmula, then the maximum allowable value shall be used.

2. The concentrations used in the fo1mula shall be the mean values for any samples · analyzed for that period.

3. All sample values are in rng/1.

Payment of the surcharge shall not be deemed as acceptance of a non-conforming waste by the Authority. In addition to the payment of the surcharge, East Coventry agrees that if repeated assessments of the surcharge occur, the Authority may (a) require pre-treatment of the offending wastewater by East Coventry, (b) compel East Coventry to terminate the particular discharger(s) responsible for the non-conforming waste from dfscharging into the East Cov.yntry system, or (c) if this discharger cannot be identified by East Coventry, require East Coventry to refose further connec;tions to the East Coventry collection system; all in order to prev<,nt discharges deemed hatmful or to have a deleterious effect upon·:e4e treatmc;nt plant or receiving stream.

B. The surcharge formula specified in 9.7A applies to non-confo1ming waste that exceeds normal strength sanitary sewage. East Coventry further agrees to pay any charges for any other non-conforming waste that contains any one or more of the prohibited substances listed in Exhibit "E" which can be shown as being directly attributable to East Coventry wastewater passing through one of the East Coventry connection points. Additional charges may include fines, repairs to the treatment process, additional laboratory expenses, additional sludge disposal expenses, legal expenses, engineering-expenses, etc.

9.8. The dischai·ge of any industrial wastewater into the Authority's sanitary sewer system, pump stations or treatment plant is prohibited, except as provided for below in this Section. Industrial wastes are typically more concentrated in nature, and contain toxins that are not amenable to biological treatment and/or may inl1ibit the normal biological process. East Coventry agrees to prohibit the discharge into the East Coventry collection system of all industrial wastewaters, unless written approval for such discharge is obtained from the Authority, imd East Coventry adopts pretreatment standards in compliance and with approval of EPA, DEP, the Authority, and other appropriate agencies. East Coventry agrees that if any form of industrial wastewaters are accepted in the furore by the Authority, East Coventry will pay all the costs for additional sampling, treatment, and administrative cha_rges for monitoring and processing of any industiial wastewaters discharge to East Coventry's collection system.

9.9. Private or Bulk Dumping Prohibited. East Coventry agrees that it.shall not permit the dumping of bulk wastewater, septage, sludge, or other wastes into its wastewater collection system by private haulers or other persons engaged in the business of transporting wastewater, septage, sludge, or other wastes.

ARTICLEX

Charges for Treatment of East Coventry Wastewat r

10.1. Upon completion of the Treatment Plant Expansion Project and issuance of a Certificate of Substantial Completion by the Authority's Engineer, East Coventry and the Authority will share the annual operating costs for the wastewater treatment plan._! in proportion to the volurne of wastewater discharged by each party into the wastewater treatment plant. Monthly billings to East Coventry based upon proportionate flow shall commence on the next full month after the Certificate of Substantial Completion is issued.

10.2. 1be Authority will separate its operating costs between treatment plant costs and collection system costs.

10.3. This Agreement envisions East Coventry connecting and discharging directly at the treatment plant and not utilizing any portion of the Authority's collection system. Under this concept, only East Coventry's proportionate share of the operating costs for the treatment plant would be assessed to East Coventry. If, however, East Coventry connects to the Authority's collection system at some future time, charges for use of the Authority's collection system may be applied, and East Coventry agrees to pay the charges.

10.4. The Authority's fiscal year is from Febrnary I to January 31. On an annual basis, the Authority will prepare an Estimate for the Operation Costs for the wastewater treatment plant for the upcoming year. The Estimate of Operation Costs will be fo1warded to East Coventry. Based on the Estimate, and the anticipated connections to the East Covenlly collection system during the upcoming year, East Coventry can establish an estimated user charge for its connections. East Coventry shall receive the Estimate for Operating Costs on or before February 28 of each year: On or before November I of each year, the Authority shall provide East Coventry with a Preliminary Estimate of Operating Costs based upon info1mation'then available, for East Coventry's use in preparing its budget in accordance with the Township Code.

10.5. On a monthly basis, the Authority will review the flow meter records, and calculate East Coventry's percentage share of the total flow recorded at the treatment plant. East .Coventry's percentage share will be multiplied by one-twelfth (1/12) of the Estimate of Annual Operation Costs for the wastewater treatment plant. The product of this multiplication will be the estimated monthly charge for treatment of East Coventry wastewater.

10.6. Based on the resultant charge in Section 10.5, the Authority will invoice East Coventry fifteen (15) days after the close of each month, an estimated monthly treatment charge, fodreatment services provided during the previous month. The minimum monthly payment of . Three Thousand One Hundred Twenty-five Dollars ($3,125.00), as provided in Section 10.9C, shall be applied.

10.7. Payment for wastewater treatmen! services, surcharges for flows which exceed th_e Discharge Ciiteria, and any other invoice sent in accordance with this Agreement shall be made by East Coventry within fmty-five (45) days of the date of the Authority's invoice. If payment is not made by East Coventty within forty-five (45) days of the date of the invoice; East Coventry agrees to pay to the Authority interest on the unpaid amount at the rate of Six Per Cent (6%) per annum, beginning forty-five (45) days after the date of the invoice and until full payinent is made.

10.8. At the end of the Authoiity's fiscal year, an audit of the operation and maintenance costs will be performed by an independent ce1tified public accountant. The operating and maintenance costs will be reduced by any operating grants received by the Authority. Based upon the audit of the previous year's operating costs for the wastewater treatment plant, and based on the total flows recorded as discharged from each party, a reconciliation calculation will be performed to dete1mine if there was any underpayrnent or ·overpayment on the amount due from East Coventry, based on the actual operating exp nses. East Covc try will be invoiced for any underpayments, and the payment of the invoice shall be due within fo1ty-five (45) days of the date of the invoice. East Coventry shall pay interest at the rate of Six Per Cent (6%) per annum after fmiy-five (45) days and until the invoice is paid. Overpayments will be applied to future invoices.

10.9. A listing of the items that are typically included in the operating cost of the wastewater treatment plant are included in Exhibit "F". A copy of the C'urrent Annual Budget for the Authority is attached as Exhibit "G", and a copy of each year's operating budget shall be forwarded to East Coventry within thitiy (30) days of the Authority's adoption ofthe budget.

A. The listing of items is notfixed, and items may be added or deleted as circumstances dictate.

, . 13. The parties acknowledge that not a\l costs for the operation of the treatment plant can be readily segregated, so, to simplify the calculations for cost shating, the following items and related percentages are adopted:

Item	Poltion Allocable to Tri; atment PJant
(1) Routine engineering services to Authority	50%
(2) Routine legal services to Alithority	50%

(3) Wages, taxes, benefits paid to Authority operating personnel	&0%
(4) Wages, taxes, benefits paid to Authority administrative personnel	50%
(5) Administrative expenses	50%
(6) General Insurance (not specific to plant)	80%

C. The patties acknowledge that in the initial period after the Treatment Plant Expansion Project is completed, East Coventry may only have a small number of connections discharging to the treatment plant. The proportioning of operating costs based only on the East Coventry share of total plant flow would create a disproportionateburden on the Authority. Certain expenses will be incun-ed by the Authority regardless of the amount of wastewater discharged by East Covenh·y. These "fixed" expenses will increase with the completion of the Treatment Plant Expansion Project and will increase with the additional treatment facilities requir d to be maintained and available for service.

After East Coventry becomes a bulk user, invoices wHI be sent to East Coventry . on a monthly basis. East Coventry agrees to pay to the Authority each 1honth (a) Eas.t Coventry's proportionate share of the operating costs of the treatment plant, based upon flow, or (b) a minimum monthly payment of Three Thousand One Hundred Twenty-five Dollars ($3,125.00), whichever is greater.

D. The Authority's budget for the current fiscal year is attached to this Agreement.

10.10. In the event ofa dispute regarding treatment charges, East Covenhy shall provide written objection to the Authority. The parties agree to review the calculations and attempt to resolve the dispute. Unresolved issues shall be settled in accordance with Article XVI. East Coventry shall continue to make full payment for each invoice until such time as the dispute is resolved. In the event East Coventry is con-ect in its assessment of treatment charges, all overpaymenfo shall be subject to simple interest at the rate of Six Per Cent (6%) per annum, beginning from the date when the overpayment was received by the Authority.

ARTICLE XI

Covenants of thtJJ'a1ties

11.1. Covenants of both East Coventry and Autho1ity: East Coventry and Authority covenant and agree with the other that each will, at all times:

A. Maintain its wastewater system in good repair, working order, and condition.

B. Continuously operate its wastewater system, subject to "force majeure" or all orders, directives, and regulations of the Chester County Health Department, DEP, the

Environmental Protection Agency, and any existing or successor agencies with aiithority to regulate and control the operations of the respective wastewater systems.

C. From time to time, make all necessary repairs, renewals, and replacements thereof, and all improvements thereto in order to maintain adequate service.

D. Make available at all reasonable times lo the other parties or their agents, 'servants, employees, and representatives access to all records insof(lr as the same relate to matters covered in this Agreement. Each party also agrees that the other parties, their agents, servants, employees, and representatives shall have access to the physical facilities of the other parties hereto at reasonable times in order to assure compliance with the terms and provisions of this Agreement.

11.2. Covenants of Authority: In addition to the covenants under Section 12.l, Authority covenants and agrees that it will, at all times:

A. Operate and maintain the wastewater treatment plant and make such alterations, repairs, replacements, renewals, and improvements thereto, and to keep the equipment and facilities therein as may be necessary to keep the treatment plant in good repair and efficient operating condition and to meet the standards prescribed by the DEP, United States Environmental Protection Agency, and any other state or Federal governmental authority having jurisdiction thereof. Operation of the plant shall be under the supervision of a treatment plant operator(s) certified by the Commonwealth of Pennsylvania,

B, At all times during the tenn of this Agreement, for the purpose of performing and carrying out the duties imposed upon the Authority's Engineer by this Agreement, employ as consulting engineers, an independent agency or firm or an independent professional engineer having a favorable reputation for skill and experience in the construction and operation of sewer systems and registered in the Commonwealth of Pennsylvania. The Authority's Engineer shall make and file annually with East Coventry a wlitten report upon the treatment plant and the operation thereof during the prior fiscal year, setting forth its recommendations for the ensuing year and an Estimate of Operating Costs for the treatment plant for the ensuing year. In addition, the Engineer shall provide a copy of the Authority's Chapter 94 Annual Wasteload Management Repo1t to East Coventry by March 31. Until notice to the contrary, the Authority's Engineer shall be Spotts, Stevens and McCoy, Inc., of Reading, Pennsylvania.

C, Maintain proper books or'account and records relating to the operation of the treatment plant and employ an independent Certified Public Accountant or firm of accountants registered in the Commonwealth of Pennsylvania to perform the functions and duties required by this Agreement. Such accountant(s) will fornish to Authotity and East Coventry, not more than one hundred eighty (180) days after the close of the Authority's fiscal year, a statement and report showing the Net Operating Costs of the treatment plant and the proper allocation thereof between the parties and any capital costs incurred and the proper sharing of those costs,

D. Constmct all new manholes, pumping stations, and other facilities ofthe Authotity's system in such a manner that the same shall be protected from physical damage by the 100-year flood, as determined by the Federal Emergency Management Agency. Pumping stations shall remain fully operational and accessible during the 25-year flood. Manholes subject to flooding shall be protected with solid (no vent holes in cover, no through pick holes) watertight covers.

11.3. East Coventry covenants and agrees that East Coventry will, at all times:

A. Chai'ge to its customers sewer rates and charges which will provide receipts of revenues sufficient, together with other funds available, to make all payments required to be made by East Cqventry under the provisions it't this Agreement.

B. Adopt and enforce Ordinances, Resolutions, Rules, Regulations, and Permits governing wastewater connections and the admission of wastewater into the East Coventry collection system, which Ordinances; Resolutions, Rules, Regulations, and Permits shall be at least as stringent as existing and future Ordinances, Resolutions; Rules, Regulations, and Permits of North Coventry and the Authority,. Copies of all such Ordinances, Resolutions, Rules, Regulations, and Permits shall be supplied to Authority within ninety (90) days after enactment by East Coventry of an Ordinance or Regulation.

C. Constrnct all manholes, pumping stations, and other facilities of the East Coventry collection system in such a manner that.the saine shall be protected from physical damage by the -100-year flood, as determined by the Federal Emergency M·anagement Agency. Pumping stations shall remain fully.operational and accessible <luting the25-year flood. Manholes subject to flooding shall be protected with solid (no vent holes in cover; no through pick hoJes) wate1iight covers.

D. Adopt, by Ordinance, recognized plumbing standards at.least as stringent as those adopted by North Coventry, the standards of BOCA Plumbing Code, and develop cmtain standards for the installation of"grease interceptors and oil separators"..

E. Require each non-residential establishment to meter its water consumption as of the date that such user connects to the East Coven!ty collection system.

F. Provide to Authority by January 31 of each year information as required by Authority to facilitate preparation of the Authority's Chapter 94 Annual Wastcload Management Report.

ARTICLE XII

As-Built Drawiugs

12.1. Upou completion of the East Coventry collection system, East Coventry shaU provide, without cost to Authority, one complete set ofreproducible as-built drawings of the East .Coventry collection system, for the use of Authority, showing complete information as to location, grade and depth of lines, location of manholes, design and location of pump stations, and, also, specifications and technical documents for all equipment installed as a palt of the same, and other similar relevant information.

East Coventry agrees to provide the above infonnation for any later expansions of the East Coventry collection system, within ninety (90) days of the completion of the expansion.

ARTICLE XIII

Future Plant Expansion Costs and Capacity

13.1. Future Plant Expansion -- Single Party Cause. The parties agree that the total Project costs of any expansion, renovation, revision, odmprovement to the Authority's wastewater treatment plant performed, to provide additional treatment capacity for one party, shall be borne solely by said party.

13.2. Future Plant Expansion - Overall Plant Upgrade. If additional treatment capacity is provided for both East Coventry and Authority, the costs of said future project shall be reviewed by the parties and shared pro rata, based on the proportional additional capacity assigned to each party.

13.3. FuturePlant Expansion Resulting from Meeting Regulatory Requirements - Sing)§ Party Cause. Authority and East Coventry agree that if the total project costs for future expansion, renovation, revision, oi: improvement of the Authority's wastewater treatment plant arc performed to upgrade the treatment facility to enable it to meet more stringent effluent standards required of one party's influent stream, then those costs are borne solely by that.party.

13.4. Future Plant Expansion Resulting from Meeting Regulatory Requirements - Both Paities. The total project costs for future expansion, renovation, revision, or improvement of the Authority's wastewater treatment plant performed to upgrade the treatment facility to enable it to meet more stiingent effluent standards and/or to provide for capital improvements or extraordinary repairs which will not increase the total treatment plant capacity shall be shared by Authority and East Coventry, pro rata, based on the proportional capacity assigned to each of these parties.

13.5. Future Plant Expansion Due to Third Parties Conttibuting to the System. Notwithstanding anything contained herein to the contrary, Authority agrees that the cost of any expansion, renovation, revision, or improvement to Authority's wastewater treatment plant required as the resuH of any contributing party other than .East Coventry shall not be passed through, charged, or paid in part by East Coventry.

ARTICLE XIV

Indemnification

14.1. Should any waste, substance, material, or gas be deposited or discharged into the East Coventry wastewater system and be released into and/or treated or discharged at the Authority's wastewater treatment plant, resulting in Authority being charged with a violalion of the Clean Streams Law, the tem1s, critetia, and conditions of the Authority's Operating Permit, and/or any other statute, administrative regulation, Ordinance, Code, or Order, East Coventry shall indemnify and save Authority hannless from any and all costs, expenses, and fines incurred and resulting therefrom, including any and all legal and administrative expenses incurred in defense of such action.

14.2. East Coventry shall be financially responsible for all iosscs incurred by Authority as a result of East Coventry's exceeding of the Discharge Criteria contained in this Agreement, and East Coventry does hereby further indemnify and hold hannless Authoiity against any and all costs, expense, loss, damage, financial liability, fines, and penalties, including any and all legal and administrative expenses inc;urred by Authority in regard thereto, that may be incurred by or imposed upon Authority by DEP, EPA, oi any other regulatory body with jurisdiction thereof, resulting in whole or in part by reason of wastewater being discharged from East Coventry into the.Authority's treatment facilities in violation of any of the Discharge C1iteri·a of this Agreement or any other terms, conditions, or limits set fo1th in this Agreement.

14.3. East Coventry agrees to indemnify and save harmless the Auth01ity against all costs, losses, or damage on account of any injmy to persons or property occurring in the performance of this Agreement due to the negligence of East Coventry or its agents or employees.

14.4. Authority,agrees to indemnify and save hannless East Coventry against all costs, losses, or damage on account of any inju1y to persons or property occm'ring in the perfonnance of this Agreement due to the negligence of Authority or its agents or employees.

ARTICLE XV

Pisputcs and Arbitration

15.1. In addition to any action that may be brought at law or in equity in a Court of competent jurisdiction, the parties hereto agree that if, at any time, a dispute shall arise between .them concerning factual determinations under the tenns of this Agreement, the matter of dispute may, by consent of both parties, be:

A. Referred to three (3) independent registered consulting engineers registered in the State of Pennsylvania, one to be appointed· by Authority, one to be appointed by East Coventry, and one to be appointed by the two appointees _so selected.

B. Provided, however, that in the event such appointees cannot agree on the third arbitrator, the President Judge of the Coutt of Common Pleas of Chester County; Pennsylvania, shall, upon petition of both parties, appoint the third arbitrator.

C. If the parties have mutually agreed to submit a matter to arbitration, the Decision or Award of the majority of such arbitrators shall be final and binding upon the parties hereto, and their respective successors and assigns. East Coventry and Authority shall each pay the costs of its own appointee and one-half of the costs of the third arbitrator.

ARTICLE XVI

Term of Agreement; Amendments

16.1. Term oftl1is Agreement. This Agreement shall be effective from the date of signing by all paities until terminated by mutual written consent of North Coventry, Authority, and East Coventry.

16.2. Amendment. This Agreement may be amended from time to time by written consent of the parties to this Agreement.

ARTICLE XVII

Miscella11eous

17.1. Insurance, Repairs, and Reconstruction. The Authority will insure, or cause to be insured, the Authority's wastev;ater treatment plant wit11 a responsible company or companies authorized and qualified to do business under the laws of the Commonwealth of Pennsylvania, against loss or damage by fire and such other risks (including public liability) and casualties and · in such amounts as are usua1ly can'ied on like properties in said Commonwealth and as approved

by the Authority's Engineer. The Authority does not cun-ently maintain flood insurance; and, nothing in this Agreement is to be interpreted as requiring the Authority to can-y flood insurance on its wastewater treatment plant. Immediately upon the occunence of any loss or damage to any paii of said Authority's wastcwatel' treatment plant which is covered by insurance, the Authority will commence and promptly complete, or cause to be so commenced and promptly completed, the repailing, replacement, or reconstrnction of the damaged or destroyed propelty .according to plans aiid specifications prepared by the Authority's Engineer and shall collect and apply, or cause to be applied, the proceeds of such insurance to the cost of such repait replacement, or reconstrnction.

17.2. Inspection. Each party to this Agreement shall provide the others, fyom time to time, all information relevant and appropriate to the proper administration of their respective responsibilities under this Agreement, or in respect to the interpretation hereof, as, and in such form and detail as, may be reasonably requested, and each shall, at all reasonable times and from time to time, permit their representatives to examine and inspect their respective records and physical facilities.relevant to the subject matter of this Agreement.

17.3. Force Majeure. Notwithstanding any other provision of this Agreement, no party to this Agreement shall be re. ponsible in damages to any other for any failure to comply with this Agreement resulting from an act of God or liot, sabotage, public calamity, flood, stlike, acts of terrolists, breakdown of the Authority's wastewater treatment plant, or of any party's collection system, or other event beyond its reasonable control. The party having the responsibility for the facilities so affected, however, shall proceed promptly to remedy the consequences of such event, with costs to be shared to the extent provided elsewhere herein.

17.4. Severabili!y. Should any provision hereof for any reason be held illegal or invalid; no other provision of this Agreement shall be affected; and this Agreement shall then be construed and enforced as if such illegal or invalid provision had not been contained herein.

17.5. Headings. The headings in this Agreement are solely for convenience and shall have 110 effect in the legal interpretation of any provision hereof.

17.6. Effective Date. This Agreement shall become effective as of the date of execution and delivery hereof by the parties hereto.

17.7. :Waiver. The failure of a paity hereto to insist upon strict performance of this Agreement or of any of the terms or conditions hereof shall not be construed as a waiver of any of its rights hereunder.

17.8. Counterpatts. This Agreement may be executed in any number of counterpaits, each of which shall be regarded for all purposes as an original, but such counterparts shall together constitute but one and the same instrnment.

17.9. Successors and Assigns. East Coventty may not voluntarily assign this Agreement without the consent of the Authority, except to a municipality authority incoi·porated by East Coventry, pursuant to applicable law. Subject.to the foregoing, this Agreement shall bind and inure to the benefit of the respective success01:s and assigns of the parties hereto.

17.10. Supersedes Prior Agreements. 'This Agreement supersedes and repeals any prior agreement, contracts, and understandings, written or oral, by or among the parties hereto with respect·to the subject matter contained herein. This Agreement contains the entire agreement among the parties hereto, and no oral statements or representations or prior written matter ·not contained in this instrnment shall have any force and effect.

17.11. Modification. This Agreement may not be modified or amended except in a w1iting signed by the parties hereto.

17.12. Pennsylvania Law. This Agreem ent shall be constrned according to, be subject to., and be governed by the laws of the Commonwealth of Pennsylvania.

ARTICLE XVIII

l.,ist of Exhibits

Exhibit "A" - Constrnction Cost Opinion for proposed treatment facilities, last revised 12-3-01.

Exhibit "B" - Wastewater Treatment Plaut Expansion to 2.01 MOD, by Spotts, Stevens and McCoy, Inc., last revised 7-23-03. '

Exhibit "C" - East Coventry Sewer Service Planning Areas, dated 10-20-99, last revised 2-4-03.

Exhibit "D" - Discharge Criteria (both flow and qualitative), 2.pages, last revised 1-14-03.

Exhibit "E" - Prohibited Wastes, 7 pages, last revised 1-14-03.

Exhibit "F" - Line Items Included in the Operating Cost for the Wastewater Treatment Plant, 3 pages, last revised 1-28-03.

Exhibit "G" - Cuncnt Annual Budget for Authority's fiscal year 2003-2004, 2 pages.

Exhibit "H" - Estimate of Cost of Existing Treatment Facilities, 4 pages, last revised 9-4-02.

IN WITNESS WHEREOF, the patties hereto have caused this Agreement to be execut d by their duly authorized appropriate officers and their respective seals to be affixed hereto, all as . of the day and year first above written.

NORTH COVENTRY MUNICIPAL AUTHORITY

By:. 1\&a ½ , -\to ••1/ Chairman

Attest:./3r Secretary

TOWNSH1P OF NORTH COVENTRY

By: Chairman

Atte Secre

TOWNSHIP OF EAST COVENTRY

By: hai-

Attest:.-:. :ecretary

EXHIBIT "A"

NORTH COVENTRY MUNICIPAi. AUTHORITY

CONCEPTUAL STUDY -WASTEWATER TREATMENT PLANT EXPANSION TO 2.01 GD.

COST OPINION FOR MAJQR£11QCES SJ1J\IJIS.

"Revised 12-3-01

lillm	DesCription		Construction Subalotal.
1	Relocate raw wastewater discharge piping to screen	$	15,000
2	Influent.Screen and Structure	$	273,000
3	Modifications to Oxidation Ditch	$	228,000
4	New Final Clarifier	$	384,000
5	Modifications to Flow Division Box	$	15,000
6	Modifications to Final Settling Tank	$	36,000
7	Outfall Pumps and Piping	$	38,000
8	New Aerobic Dlgesters and Blower Building	$	361;000
9	Site Work	$	29,000
10	Enclosure for Second Sludge Dumpster	$	39,000
11	E._Coventry Force main, Flow meters·, Sampler	$	37,200
12	**Miscellaneous**	$	20,000
	Subtotal, Major Process Units	$	**1,475,200**
	Bonds and Insurance **(2%)**	$	29,504
	Mobilization, Demobilization (1.5%)	$	**22,128**
	General Conditions (4%)	$	59·,008
	Total Opinion of Construction	$	**1,585,840**
	Construction Contingency (20%).	$	317,160
	Non-Construction (budget value only)	$	450,000
	Total Opinion of Probable Project Cost	$	**2,353,000**

FJ(HTBTT "D" - DISCHARGE CRITERIA

The Intermunicipal Agreement provides for treatment of wastewater from East Coventry Township based on specific discharge criteria.. The criteria are defined on the basis of flow parameters (gallons discharged) and on qualitative parameters (i.e. the strength of the wastewater discharged).

1 FLOW CRITERIA

The amount of wastewater treated from East Coventry is measured on a "bulk allocation" basis that is, by total flow received at the North Coventry Municipal Authority wastewater treatment plant, rather than by total connections, EDUs, hook-ups, customer bills, etc. that are in East Covently,

The allocation of treatment capacity for East Coventry is measured and hereby limited to the following flow criteria:

1. Annual Average Daily Flow (AADF) 510,000 gallons per day.
2. Maximum Monthly Average Flow (AADF x 1.2 =) 612,000 gallons per day.
   Calculated as a calendar month and as a maximum 30 d_ay running average.
3. Maximum Weekly Average Flow (AADF x 1.5 =) 765,000 gallons per day
   Calculated as a calendar week and as a maximum.7 day ruruiing average.
4. Maximum Daily Flow (AADF x 2.5 =) 1,275,000 gallons per day
5. Peak Instantaneous Flow (AADF x 4) 2,040,000 gallons per day

II Ol_IALITATIVE CRITERIA

The strength oi- quality of wastewater discharged by East Coventry into the North Coventry Municipal Authority wastewater treatment plant is measured and hereby limited to the following criteria:

A. CONCENTRATIONS

Critelia	Monthly Avg.	Weekly Maximum	Instantaneous Maximum
BODs	204mg/L	306mg/L	408 mg/L
Total Suspe ded S_olids	240mg/L	360mg/L	480mg/L
Ammonia asN	30mg/L	-----	MN-- -
Phosphorous	10 mg/L		

B. MASS UNITS

Cr:iteriiJ	Monthly Average	Weekly Maximum	Instantaneous Ma:xjmum
BOD5	868 lbs per day	1302 lbs per day	
Total Suspended Solids	I021 lbs per day	1532 lbs per day	
Ammonia as·N	127 lbs per day		
Phosphorous	42.5 lbs per day		

C. NPDES PERMIT LIMITS

The above criteria are based on.the cutTent treatment plant process design, and on the current NPDES discharge permityalues. Any future change of criteria as required in future NFDES pe1mits will he appHed proportionately to the East Coventry qualitative limits.

D. ANY PROHIBITED WASTE AS DEFINED IN EXHIBIT "E"

. END OF SECTION

EXHIBIT "E" -_PROIIIBITED WASTES

Prohibited wastes include any discharge other than that traditionally defined as Sanitary Sewage, where Sanitary Sewage means the normal water-carried household and toilet wastes frmh residences, aparhuents, business buildings, institutions, commercial and industrial (non-process discharges only) establishments or any other improved properiy.

The Authority reserves the right to refuse perrqission to.connect to the Sewer System, to compel discontinuance ofusc of the Sewer System, or to compel pretreatment oflndustrial Wastes by any establishments, in order to prevent discharges deemed harmful, or deemed to have a deleterious effect upon the Sewer System.

A discharge exceeds normal strength Sanitary Sewage and is a prohibited waste if any one or more of the following criteria enumerated in 1 through 6 (inclusive) are exceeded:

1. Any discharge exceeding no1mal domestic strength sanitary sewage, as defined by the followmg criteria:

BODs	204mg/L
Total Suspended Solids	240mg/L
Total Dissolved Solids	500mg/L
Settleable.Solids	10 ml/L
COD	500 mg/L
Ammonia-nitrogen	30mg/L
Organic Nitrogen as N	15 mg/L
Total Kjeldahl Nitrogen	45 mg/L
Phosphorus (as P)	10mg/L
Alkalinity (as CaCOi)	between 50 mg/L and 200 mg/I
pH (standard units)	between 6.5 and 9.0

2. Any discharge containing sto;m water, surface water, spring water, roof runoff, subsurface drainage, building foundation drainage, cellar drainage, drainage from roofleader connections.

3. The following discharges of any liquid or solid wastes, substances or matte!', are prohibited:

   A. Any discharge having a temperature higher than 140 degrees Fahrenheit, or less than 32 degrees Fahrenheit.

   B. Any discharge containing more than 100 milligrams per liter of dissolved fat, oil, wax, grease, either vegetable cir mineral, or containing any substance which may solidify between 32 and 100 degrees Fahrenlieit. Any discharge containing floatable . oils, fats or grease.

C. Any discharge of liquids, solids or gases which by reason of their nature or quantity are, or may be sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious fo any other way to the sewer facilities or to the operations of the sewer facilities.

At no time shall two successive readings on an explosion hazard meter at the point of discharge into the system (or at any point in the system) be more than five percent (5%) nor any single reading over ten percent (10%) of the Lower Explosive Limit (LEL) ofth<"meter.

Prohibited materials include, but are not limited to: gasoline, kerosene, naphtha, benzene, toluene, xylene, alcohols, ethers, ketone, aldehydes, peroxides, chlorates, perchlorates, bromate, carbides, hydrides, sulfides, fuel oil, motor oil, paint products, acid or other volatile, explosive or flammable substance which by reason of its nature or quality may cause fire or explosion, or be in any way injurious to persons, to the sanitary sewers or to the wastewater treatment facilities.

D. Any discharge containing toxic, noxious, poisonous or malodorous solids, liquids or gases, vapors, fumes or substance, which either singly or by interaction with other wastes, is capable of:

creating a public nuisance or hazard to life;
preventing routine entry into sewers for n01mal maintenance and repair;
may cause worker health and safety problems;
.interfering with any wastewater treatment process;
constituting a haza1·d to humans or animals;
causing , alone or in conj_unction with other sol!rces, the treatment plant's effluent to_ fail a·Whole Effluent Toxicity test;
creating ·a,iy hazard in the receiving waters or in the wastewater treatment plant.

Toxic wastes shall include but not be limited to wastes containing cyanide, chromium, copper and "nickel ions, or any pollutant identified pursuant to Section 307 ofthe Clean Water Act, as amended 33 U.S.C. 1251, et. seq.

·E. Any discharge containing any garbage from kitchen wastes that has not been properly shredded.

F. Any discharge, in quantities or of such size capable of causing obstructions in the sewers, pump stations or other interferences with the proper operation of the wastewater treatment facilities, containing, but not limited to:

animal guts or tissues, paunch manure, butchers, offal, bones, hair, hides or fleshing, entrails.
antifreeze
any solids greater than one-half inch in any dimension,
ashes

bentonite
blood or blood components or products
building materials
ceramic wastes
china
cinders
detergents, surfactants or other agents in quantities that cause excessive foaming at the wastewater treatment plant
feathers
glass, glass grindings or polishing wastes
grass clippings
hair
leather
lye
medical wastes
metal
mud
paper dishes, paper cups, paper or cardboard containe1's,
petroleum products (including pl_astics, gasoline, tar, asphalt residues, residues from refining or proces_sing of fuel or lubricating oil)
plastic
porcelain
rags
rubber
sand
sharps (needles, razor blades, syringes, scalpels, etc.),
shavings.
sludge, screenings or other residues from treatment processes of others
spent grains
spent hops
spenflime
straw
stone or marble dust
tar
waste paper
wood
or any other solids or viscous substances capable of causing obstruction to the flow in sewer system or other interference with the proper operation of the sewer system or wastewater treatment plant.

G. Any discharge containing ine1t, insoluble solids such as: asphalt, clay, slag, mill scale, or sludges and slurries:

H. A11y discharge having a pH lower than 6.5 or higher than 9.0, or having any other coi-rosive property capable of causing damage or hazard to structures, equipment or personnel:

I. Any discharge containing total solids of such character and quality that unusu_al attention or expense is required to handle such materials at the wastewater treatment plant.

J. Any dis.charge containing radioactive isotopes.

K. Any discharge of discolored materials containing trne colodi'om any source and of any hue with less than the equivalent luminesence and greater than the equivalent purity of a 250 color unit platinum-cobalt stock standard, as determined by spectrophotometric methods. Equivalent values shall be determined at the dominant wave length of the sample and compared to the values determined at the dominant wavelength of the stock standard.

Any discharge with sufficient color that is not removed by the treatment process that causes the plant effluent to have hue color. discharge in excess of 100 color units.

Any dye that is non-responsive to removal by alum coagulation to remove suspended or colloidal matter, and/or non-responsive to chlorine bleaching of the dissolved . dyes.

L Any discharge, that individually or in combinations with other wastes, exetts a chlorine demand in excess of 12 mg/L, at a detention time of 15 minutes, on the effluent of the plant after biological treatment and prior"to disinfection.

M. Any discharge which will cause the wastewater treatment plant to violate its NPDES and /or Water Management Permit, or violate the water quality standards for the receiving stream. Any discharge containing wastes which are not amenable to biological treatment or removal by the existing treatment processes, or arc only partially amenable to treatmet\t such that the plant effluent does not meet the regulatory requireinents; specifically, any discharge containing non-biodegradable c.omplex carbon compounds.

N. Any discharge containing suspended solids of such character and quantity that unusual attention or expense shall be required to handle,such water or waste at the wastewater treatment plant.

0. Any discharge containing more than 25 mg/L of petroleum oil, non-biodegradable cutting oils, or products of mineral oil otigin.

. P. Any discharge prohibited by any pe1mit or regulation of Pennsylvania Department of Environmental Protection, or the Environmental Protection Agency.

Q. Any discharge of waste slugs, such that the discharge exceeds the allocated flow criteria and the peaking factors associated with the flow allocation.

R. Any discharge of concentrations of anions, cations, and other various objectionable substances that woiild make the Authority responsible discharging such substances in excess of that amount permitted in the allocated portion of the critical flow of the receiving stream.

S. Any discharge from a trncked or hauled source.

T. Any discharge which may'cause the treatment plant's effluent or other prodµct of the treatment plant (such as residues, sludge, or scum) to be unsuitable for reclamation, disposal, and resuse, or to interfere with the reclamation process.

In no case shall a substance discharged to the sewer system cause the treatment plant to be in noncompliance with sludge use or disposal criteria, guidelines;_or regulations developed under Section 405 of the Clean Water Act, the Solid Waste Disposal Act, the Clean Air Act, the Toxic Substances Control Act, or state criteria applicable to the sludge management method being used at the treatment plant.

U. A11y waste stream with a closed cup flashpoint ofless than 140 degrees fahrenheit (that is, discharges whose vapors ignite and burn at less than 140 degrees fahrenheit.)

V. Any discharge containing detergents, surface active agents, or other substances which may cause excessive foaming in the treatment plant.

4. Any discharge which violates the Federal Categorical Pretreatment Standards as defined in 40 C.F.R., Subchapter N, Pmt 401 to 471, as amended and revised.

5. Any discharge which violates the Penrisylyania State Pretreatment Standards, where those state siandards are more stringent than Federal or the Authority's standards:

6. Concentrations for elements or compounds in excess of.the following:

Aluminum	5.00 mg/L
An1monia (i'ls N)	30.00 mg/L
Antimony	0.10 mg/L
Arsenic	0.05 mg/L
Barium	1.00 mg/L
Be1yllium (as Be)	0.10 mg/L
BODs	204.00 mg/L
Boron	1.00 mg/L
Bromides	250.00 mg/L
Cadmium (as Cd)	0.01 mg/L
Chemical Oxygen Demand	500.00 mg/L
Chlorides	SU.00 mg/L
Chrome	0.10mg/L

Chromium (hexavalent)	0.10 mg/L
Chromium {trivalent)	0.50mg/L
Cobalt	0.50 rng/1
Copper	1.00 rng/L
Cyanides (as CN)	0.20 mg/L
Endrin	0.0004mg/L
Fluorides	5.0rng/L
Hydrogen Sulfides	0.10 rng/L
Iron	5.0mg/L
Lead	0.05 mg/L
Lithium	2.50 mg/L
Lindane	0.008 rng/L
Magnesium	25.00mg/L
Manganese	0.20mg/L
Methoxyclor :	0.20 mg/L
Mehylene Chloride	0.40 mg/L
Molybdenum	0.10mg/L
Mercury	0.05 mg/L
Nickel	0.25 mg/L
Phenols	0.001 mg/L
Phosphates (as $P0_4$)	50.00mglL
Phosphorus (as P)	10.00mg/L
Selenium	0.01 mg/L
Silver	0.10mg/L
Sulfates	500.00 mg/L
Suspended Solids·	240.00 mg/L
Tin	1.00 mg/L
Total Dissolved Solids	500,00 mg/L
Total for all Priority Pollutants	15.0 mg!L
Total Halogenated Organics	2.00mg/L
TotalKjeldahl Nitrogen	45.00mg/L
Toxaphene	0.01 mg/L
Vanadium	0.10 mg/L
Zinc	0.50mg/L
2,4,5-TP Silvex	0.02 mg/L

Specific Toxic Substance Notification Levels (for manufacturing, commercial, mining, silvicultural discharges):

Acrolein	200 ug/L
Acrylonitrile	200 ug/L
2-, 4-Dinitrnphenol	200 ug/L
2-methyl, "4, -6 dinitrophenol	500 ug/L

The above criteria is subject to amendment based on process perfo1mance, new requirements from regulatory agencies, or technical developments.

Laborat01y analysis shall be performed on a representative 24-hour composite sample (or grab sample at discretion of the Authority) and all analytical procedures shall be consistent with the latest revised edition of Standard Methods for the Examination of Water and Wastewater.

END OF SECTION

EXHIBIT "F"
NORTH COVENTRY MUNICIPAL AUTHORITY

LINE ITEMS.JNCLUDED..J.t-LQP.ERATING r;_osr
for
WASTEWATER TREATMENT PLANT

	ilfiln	Fiscal Year 2003 Values for Cost Sharing
1.	Salaries, wages, payroll expenses, benefits at_80% =	$ 231,281.60
2,.	Parts, maintenance and repairs	$ 29,500,00
3,	Sludge Dewatering and Disposal	$ 53,400.00
4,	Chlorine and Chemicals	$ 3,600.00
5,	Electric	$ 65,000.00
6.	Heating (natural gas)	$ 2,500.00
7.	Laboratory analysis(includlng outside labs) and supplies	$ 2,000.00
8,·	Permit fees and testing (permit renewal every 5 years)	$
9,	Materials and Supplies	$ 4,000.00
10.	Computer system program and technical support at 80% '''	$ 3,200,00
11.	Plant Flowmeters: maintenance, repair and calilibration	$ 500.00
12	Engineering Services for Plant	$ 7,200.00
13	Legal Services for Plant	$ 500,00
14.	Insurance for Plant	$ 11,220,00
15.	Administrative Costs at 50%	$ 96,639,00
16.	less Act 339 Grant	$ (132,764.00)
	TOTAL NET OPERATING COST FOR PLANT	$ 377,776.60

EXHIBIT "F"
NORTH COVENTRY MUNICIPAL AUTHORITY

WORKSHEET - ITEMS INCLUDED IN PLANT OPER/,\TING COST

	Ilrun			Fiscal Year.2003 . Budget Value		Extension
1.	Salaries, wages, payroll expenses, benefits					
	Wages	$	200,382.00			
	Benefits and retirement	$	62,800.00			
	Unemployment compensation	$	520.00			
	Insurance , Workers compensation	$	10,070.00			
	Social Security	$	15,330.00			
				$ 289,102.00	80%	$ 231,281.60
2.	Parts, maintenance and repairs			$ 29,500.00		$ 29,500.00,
3.	Slud e Dewatering_ and Dlsp0$al					
	Belt press- maintenance and'supplies	$	9,500.00			
	Landfill costs	$	35,000.00			
	transportalion	$	8,900.00			
				$ 53,400.00		$ 53,400.00
4.	Chlorine			$ 3,600.00		$ 3,600.00
5.	Eleciric			$ 65,000.00		$ 65,000.00
6.	Heating (natural gas)			$ 2,500.00		$ 2,500.00
7.	Outside laboratory analysis and lab supplies			$ 2,000.00		$ 2,000.00
8.	Permit fees and testing (NPDES renewal every 5 yrs)			$		$
9.	Materials and Supplies			$ 5,000.00	80%	$ 4,000.00
10.	Computer system program and support			$ 4,000.00	80%	$ 3,200.00
11.	Plant Flowmeters: maintenance, repair and calibration			$ 500,00		$ 500.00
12.	Engineering Services for Plant			$ 7,200.00		$ 7,200.00
13.	Legal Services for Plant (allowance)			$ 500.00		$ 500.00
14.	Property Insurance for Plant			$ 11,220.00		$ 11,220.00

15. Administrative Costs

salaries and wages	$	90,120,00
benefits and retirement	$	28,600.00
unemployment compensation	$	208.00.
social s·ecurily	$	7,280.00
auditor fee	$	3,500.00
paying agentJee	$	1,100.00
officer.compensation	$	5,000.00
office supplies	$	3,400.00
telephone • Authority office	$	6,000.00
billing expenses	$	3,800.00
routine legal services	.$	12,200.00
legal e penses	$	1,000.00
routine engineering services	$	16,000.00
public officials E&'.O Insurance	$	4,100.00
insurance - gen. liability, auto, umbrella	$	7,000.00
bonding for Authority treasurer	$	470.00
vehicle maintenance & expenses	$,	3,500.00

$ 193,278.00 50% $ 96,639.00

Total Budgeted Plant.Operating Cost $ 510,540.60
less Act 339 Operating Grant $(132,764.00)
Net Plant Operating Cost $ 377,776.60

16 Non-Plant Items

collection system maintenance	$	18,000.00
pump station maintenance	$	25,000.00
electric •.purnp stations	$	20,500.00
misc. operating expenses	$	658.00
telephone - pump stations	$	3,500.00
property Insurance - pump stations	$	1,950.00
legal services	$	17,800.00
legal expe ses	$	1,000.00
engineering services	$	14,800.00
engineering services for special projects	$	20,000.00
miscellaneous	,$	577.00

$ 123,785.00

check calc, TOTAL 2003 Expenditures= $ 790,585.00

North Coventry Municipal Authority 2003 Budget

OPERATING FUND	2003 Budget
Operation Expenses	
Wages	$ 200,382.00
Transportation	$ 3,500.00
Plant - Operation & Maintenance	$ 30,0QO.OO
Collection System - Maintenance	$ 18,000.00
Pump Station • Maintenance	$ 25,000.00
Sludge Removal ; Landfill	$ 35,000.00
Sludge Removal ; Transportation	$ 8,900.00
Sludge Filter Press Main(; & Supply	$ 9,500.00
Computer Sys. Program & Support	$ 4,000.00
Chlorine	$ 3,600.00
Materials & Sunnlies	$ 5,000.00
Electricity Pump Stations .	$ 20,500,00
Electricity Treatment Plant	$ 65,000.00
Heating Natural Gas	$ 2,500.00
Outside Lab. Analysis & Supply	$ 2,000.00
Emeloyee Benefits & Retirement	$ 62,800.00
Unemployment Compensation	$ 520.00
Workers Compensation Insurance	$ 10,070.00
Miscellaneous	$ 658.00
Social Security	$ 15,330.00
Subtotal	$ 522,260.00
Administr..tion Expenses	
Wages	$ 90,120.00
Telephone Pump St<11ions	$ 3,500.00
Telephone Treatment Plant	$ 6,000.00
Billing Expenses	$ 3,800.00
gal Services	$ 30,500.00
Legal Expenses	$ 2,000.00
Engineer Services	$ 38,000.00
Special Engineer Services	$ 20,000.00
Auditor Fee	$ 3,500.00
Paying Agent	$ 1,100.00
Office Supplies	$ 3,400.00
Insurance-Gen. Liability,Auto,Umbr.	$ 7,000.00
Insurance-Prooerty Treatment Pt.	$ 11,220.00
Insurance-Property Pump Stations	$ 1,9/;i0.00
Insurance-Public Official	$ 4,100.00
Insurance- Treasurer Bond	$ 470.00
Employee-Benefits & Retirement	$ 28,600.00
-Unemployment Compensation	$ 208,00
Officers Compensation	$ 5,000.00
Social Security	$ 7,280.00
Miscellaneous	$ 577.00
Subtotal	$ 268,325.00
Total Expenditures	$ 790,585.00
Debt Service	
Principal	$ 220,000.00
Interest	$ 486,415.00
Subtotal	$ 706,415.00
TOTAL EXPENDITURES	$ 1,497,000.00

North Coventry Municipal Authority 2003 Budget

		2003 Budget
Receipts Anticip_ated		
Rentals	$	1:12s;000.00
Tapping Fees	$	'350,000.00 .
Earned Interest	$	53,100.00
Pa. Act 339 Subsidy	$	132,950.00
NCWA Reimbr. Personnel Time	$	30,000.00
Total Receipts_	$	1,691,050.00

Recommended Projects

Collection Line Repairs Creek Rd.	$	314,400.00
Collection Line TV Camera	$	7,500.00
Brick Manhole Repairs	$	80,000.00

..Geographical Information System

East Main St. P.S. Force Main &
Riverside Dr. Sewer Line

EXHIBIT "!!". ESTIMATE OF COST OF EXISTING TREATMENT FACILITIES

NORTH COVENTRY MUNICIPAL AUTHORITY
ESTIMATE OF COST OF EXISTING TREATMENT FACILITIES
fuunmary of Cost_comporum!s

1.0 Original Wastewater Treatment Plant -1960			ENR Index	Costs Indexed to .3L1l01
Construction	$ 296,822.49			
Non-Construction	$ 34,305.25			
	$ 331,127.74		7.62	$ 2,523,193
2.0 1989 Plant Upgrade				
Construction	$ .48,340.40			
Non-Construction	$ 16,483.54			
	$ 64,823.94		1.36	$ 88,161
3.0 Deduction for demolished facilities				
3.1 Deduction for demolished facilities				
1960 Project	$ 143,467.47		7.62	$ (1,093,222)
1989 Project	$ 39,917.00		1.36	$ (54,287)
3.2 Deduction for Grants, Assessments received				$ (268,229)
4.0 1997 Plant Expansion				
Construction	$5,803,912.72		1.0757	$ 6,243,269
Non-construction	$1,525,654.13			$ 1,525,654
	$7,329,566.85			
5.0 Deduction for Contributions received				$ (5,016)
6.0 Deduction for Portion of Plant-that benefits Existing Users				$ (3,585,816)
		Net Cost Basis for Treatment Plant		$ 5,373,707
		USE		$ 5,374,000
Update from March 2001 to Sept 2002				.1..IM.II2
				$ 5,638,401
		East Coventry share		2.5A%
				$ 1,432,154
		Round to		$ **1,432,000**

NORTH COVENTRY MUNICIPAL AUTHORITY

ESTIMATE OF COST OF EXSITING TREATMENT FACILITIES

A. COST OF TREATMENT FACILITIES

:Tol!ldedJiislrui.cali::ilfilS_MfilJ:md'.'.

General Formula:

Historical cost of facilities Indexed to current year
Deduct for grants & assesments received
Deducl for demolished facilities
Deduct for facilities which benefit existing users
then divide the adjusted net-cost basis by available capacity= cost per gallon

1.0 Original Wastewater Treatment Plant - 1960
(source - A339 file 5339-160)

Plant site asquisitlon	$ 6,365.00		
General Construction	$ 138,444.00		
Mechanical	$ 92,646.43		
Heating & Ventllating	$ 9,785.00		
Electric	$ 23,654.66		
Well	$ 857.70		
Interceptors	$ 25,069.70		
Subtotal Construction		$	296,822.49
Design	$ 16,581.27		
Legal	$ 2,995.45		
Financial costs	$ 543.43		
Interest during construction	$ 4,461.20		
Inspection	$ 9,723.90		
Subtotal, non-construction		$	34,305.25
Total project cost, 1960 dollars =		$	331,127.74

Update to March 2001 dollars

ENR 1960 = 824	6280/824 = 7.62	7.62	
ENR 3/01 = 6280			
	Indexed cost of 1960 treatment plant In March 2001 dollars	$	2,523,193.38

2.0 Expansion of Chlorine Contact Tank & Chopper pump-1989

Construction	$ 48,340.40		
Engineering	$ 16,308.04		
AdminIstratlve	$ 175.50		
Total project cost of 1989 additions	$ 64,823.94		

Update to March 2001 dollars

ENR 1989 = 4615	Factor" 6280/4615 = 1.36	1.36	
ENR 3/01 = 6280			
	Cost of 1989 additions in March 2001 dollars	$	88,160.56

COST OF EXISTING TREATMENT PLANT INDEXED TO MARCH 2001 'DOLLARS: $ 2,611,353.94

J

3.0 Adjustments

3.1 Deduction for demolished facilities (valuation per DEP In Act 339)

1960 project	$ 143,467.47	index to 3/01	7.62	$	(1,093,222.12)
1989 project	$ 39,917.00	index to 3/01	1.36	$	(54,287.12)

3.2 Deduction for proportionate share of grants, assessments, etc

Federal Grant (1959-60)	$	1i2,323.81
Federal Grant (196fi-66)	$	12,090.00
Resolution of Assesment (1959-60)	$	433,324.80
Resolution of Assesment (1965-66)	$	102,075.00
Resolution of Assesment (1971)	$	210,220.00
TOTAL GRANTS & ASSESMENTS	$	880,033.61

Proportion grants between existing plant and existing collection system:

Existing Plant In 3/01 dollars	$ 2,611,353.94				
Existing Lines In 3/01 dollars	$ 5,956,250.00	factor=	0.30479		
		$ 880,033.61	0.30479	$	(268,228.93)
	ADJUSTED COST BASIS OF EXISTING FACILITIES:			$	**1,195,615.77**

4.0 Estimated Final Construction Costs for New Plant

General	$	4,700,768.13
Concrete testing	$	16,316.47
Owner direct purchase	$	80,000.00
HVAC	$	78,083.23
Plumbing	$	160,262.00
Electrical	$	I (31),482 8 9
Total Cost for New Plant,	$	5,803,912.72

Update Construction Costs from receipt of bid November 1997 lo March 2001

ENR 11/97 = 5838	6280/583'8=1.0757	1.0757	$	6,243,268.91
ENR 3/01 = 6280				

5,0 Ratio of New Plant Construction Contracts to New Collection System Contracts

Plant - Contract #1	$	4,700,768.13
Plant - Contract #2	$	78,083.23,
Plant - Contract #3	$	160,262.00
Plant - Contract #4	$	768,482.89
Lines - Contract # 5	$	3,395,300.00
Lines - Contract# .6	$	3,349,092.66
Total Construction	$	12,451,988.91

Ratio of Plant to Total Construction=	0.4584
Ratio of Collection System to Total Construction=	0.5416

6.0 Non-Construction Costs

6.1 Engineering thru 12/31/00 for plant

Design (-107,-108,-109,-110)	$	215,000.00	
Permits (-1,11, -120)	$	8,774.77	
Construction Phase(130,131,132,133,-134)	$	236,692,66	
Operations Consulting	$	18,289.67	
Estimated engr to complete	$	5,000.00	
SUBTOTAL			$ 483,757.10

6.2 Non engineering costs to 12/31/00 for plant

Permit fees	$	6,600.00	
Initial start-up supplies	$	10,000.00	
SUBTOTAL			$ 16,600.00

6.3 Project development costs common to plant & lines:

Reimburse Authority advanced funding	$	145,991.36		
Planning Co.sis (un-relmbursed portion)	$	35,500.00		
Solicitor	$	23,684.72		
Bidding	$	28,923.35		
Project Admin-101	$	5,483.78		
Interest on Loan	$	508,153.45		
Capitalized Interest	$	1,041,996.17		
Insurance Premium	$	42,603.00		
OID	$	224,975.15		
Underwriter Discount	$	62,135.00		
Issuance cost - Loan	$	28,678.34		
Pennvest Application	$	12,014.51		
Issuance cost • Bonds	$	49,078.90.		
Misc. financing fees	$	3,234.89		
Engineers Assistance w/ financing	$	24,388.73		
SUBTOTAL			$2,236,841.35	
Project development costs proportioned for plant			0.4584	$ 1,025,297,03
TOTAL BASE COST FOR EXIST & NEW TREATMENT PLANT				'$ 8,964,538.81 .

7.0 Adjustments to Base Costs for treatment plant

7.1 Deduction for contributions toward construction
Spotts, Stevens, & McCoy. $ (5,016.00)

7.2 Deduct portion of cost that benefits existing users

Allow existing users are 0.6 mgd (AADF prior to construction)
then, benefit to existing user= 0.6 mgd/1.5 mgd = 40%

Deduct 40% of Base Costs	$	8,964,538.81	40%	Q,585,815.53)
NET COST BASIS for TREATMENT PLANT				$ **5,373,707.29**

ARRO Consulting, Inc.
321 North Furnace Street, Ste 200
Birdsboro, PA 19508
P: (610) 374-5285

February 14, 2022

Darryl A. Jenkins, P.E.
Vice President & Chief Engineer
Spotts, Stevens & McCoy
1047 North Park Road
P.O. Box 6307
Reading, PA 19610-0307

RE: East Coventry Township
2021 NCMA Chapter 94 Annual Municipal Wasteload Management Report
ARRO #11207.11

Dear Mr. Jenkins:

On behalf of our client, East Coventry Township, please find enclosed the Township's Annual Municipal Wasteload Management Report for inclusion within the 2021 NCMA Chapter 94 Report. We trust that you will find the enclosed information satisfactory.

Please feel free to contact me via email at bill.bohner@arroconsulting.com or by phone at 610-495-2102 if you have any questions or should you require any additional information.

Very truly yours,

ARRO CONSULTING, INC.

Willian L. Bohner, Jr., P.E.
Engineer for East Coventry Township

WLB:

Enclosure

c: David G. Kraynik, Township Manager – East Coventry Township (w/ encl.)
Ray A. Kolb, Public Works Director – East Coventry Township (w/ encl.
Mark A. Hosterman, Esq., Township Solicitor – Wisler Pearlstine, LLP (w/ encl.)

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT

2021
EAST COVENTRY TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

Prepared by:

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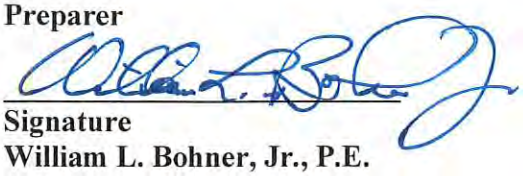

Signature
William L. Bohner, Jr., P.E.
ARRO Consulting, Inc.
Township Engineer

EAST COVENTRY TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

CHAPTER 94
MUNICIPAL WASTELOAD MANAGEMENT
ANNUAL REPORT
OPERATING YEAR 2021

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EXHIBITS

A. ECT – Hydraulic Loading
B. ECT – Organic Loading
C. ECT – Sanitary Sewer System Map with Proposed Development
D. ECT – Pumping Station Monthly Flow Information
E. ECT – Pumping Station Flows vs. Rainfall – Graphs
F. ECT – 1-Inch Plus Rainfall vs. Flow at Pumping Stations - Summary
G. ECT – 1-Inch Plus Rainfall vs. Flow at Pumping Stations – Graphs
H. ECT – Pump Station Flow Meter Calibration Report

1. INTRODUCTION

This Municipal Wasteload Management Annual Report is prepared in accordance with 25 PA Code Chapter 94 for the East Coventry Township (Township) sewerage collection and conveyance system tributary to the North Coventry Municipal Authority (NCMA) Wastewater Treatment Plant.

The Township owns and maintains the sanitary sewer collection and conveyance systems within East Coventry Township under Water Quality Management Permit No. 1503417.

The Township sanitary sewer collection system provides for collection of domestic sewage from East Coventry Township, a suburban residential area encompassing several watersheds. Wastewater from each of these watersheds flows by gravity to one of five pumping stations, which ultimately convey the wastewater to a wastewater treatment plant operated by the NCMA.

The sanitary sewer collection system is comprised of approximately 60,625 lineal feet of gravity sewer and 306 manholes. The conveyance systems are comprised of five (5) sewage pumping stations with approximately 13,711 lineal feet of force main and 2,446 lineal feet of low pressure force main.

The 2020 Chapter 94 reported 1,109 Equivalent Dwelling Units (EDUs) connected to the collection system at the end of the year. Additional connections to the collection system in 2021 brought the total connected EDUs up to 1,115 EDUs by the end of the year.

2. HYDRAULIC LOADINGS

Sewage flow from the Township system is measured at the Main Pumping Station (PS-1), which conveys wastewater directly into the NCMA collection system. During 2021, the measured sewage flow from the Township sewer system averaged approximately 135,170 gallons-per-day (gpd). This represents an increase of approximately 3,806 gpd versus 2020 flows.

3. 5-YEAR HYDRAULIC AND ORGANIC LOADING PROJECTIONS

The total number of EDUs connected at the end of 2021 was 1,115, which produced an average annual flow of 121.2 GPD.

A summary of flows over the last 5 years and a graph of past and projected flows are included in Exhibit "A".

During the next five (5) years, the number of EDUs is projected to increase as follows:

		Additional # of EDUs	*Total # of EDUs*	*Total Flow (GPD)**
Actual	*2021*		1,115	135,170
Projected	*2022*	25**	1,140	138,201
Projected	*2023*	103***	1,243	150,688
Projected	*2024*	11****	1,254	152,021
Projected	*2025*	5	1,259	152,627
Projected	*2026*	80*****	1,339	162,326

* Projected flows are based on 2021 estimated average per capita flow of 45 GPD.

** *Additional # of EDUs* accounts for 5 EDUs from miscellaneous sources and 20 EDUs from the Coventry Chase subdivision connecting to the East Coventry sanitary sewer system in 2022.

*** *Additional # of EDUs* accounts for 5 EDUs from miscellaneous sources, 6 EDUs from the Enclave at Ellis Woods and 92 EDUs from the Coventry Chase subdivision connecting to the East Coventry sanitary sewer system in 2023.

**** *Additional # of EDUs* accounts for 5 EDUs from miscellaneous sources and 6 EDUs from the Enclave at Ellis Woods connecting to the East Coventry sanitary sewer system in 2024.

***** *Additional # of EDUs* accounts for 5 EDUs from miscellaneous sources and 75 EDUs from the Parkerford Planning Area will connect to the East Coventry sanitary sewer system in 2026.

The estimated daily total lbs. of BOD_5 collected in 2021 is considered to be 254 lbs./day using an average BOD_5 rate of 225 mg/L. This calculates to be 0.086 lbs./day per capita for the estimated 3,011 persons connected to the East Coventry Township system. A

summary of organic loadings over the last 5 years and a graph of past and projected loadings are included in Exhibit "B".

4. SEWER EXTENSIONS

Exhibit "C" contains a map of the East Coventry Township sanitary sewer system and the proposed development within the Township that could be connected to the system. There were no new sewer extensions constructed in 2021.

5. PROGRAM FOR SANITARY SEWER MONITORING, MAINTENANCE, AND REPAIR

The sewer system is maintained by the Township Sewer Crew. This group is responsible for routine sewer and pump station maintenance and repairs. Sewer Crew personnel on a daily basis check all pump stations with various readings and notations made for each station as well as conditions and status of major operational components. Each pump station is equipped with various alarms and an automatic dialer to notify Sewer Crew personnel in the event of an equipment malfunction or an unusual system condition.

Township personnel formulate a plan to perform any necessary maintenance and repair, either in-house or with contracted services. All necessary repairs are made in a timely manner.

6. SEWAGE PUMPING STATIONS

The Township operates five (5) pumping stations all equipped with magnetic flow meters that measure the flows. All pumping stations are checked by the Sewer Crew personnel on a daily basis with various readings and notations made for each station as well as conditions and status of major operational components, and the maintenance of mechanical equipment is performed in accordance with the manufacturers' recommendations. Personnel take regular ampere readings on the pumps to ensure proper operating conditions. Standby generators are exercised under load on a regular basis.

The Main Pumping Station (PS-1) collects all flow from the Township sewer system and conveys it directly to the NCMA sanitary sewer system for treatment at the NCMA wastewater treatment plant. Exhibit "D" contains a summary of all Township pumping station monthly flow totals and the monthly rainfall. The monthly data is charted for each pumping station in Exhibit "E". Each pumping station operated within its permitted peak capacity with one pump on standby at 2021 metered peak flows during storm events of 1-inch or greater rainfall.

Pump Station	Permitted Peak Capacity with 1 pump out of service (gpd)	2021 Metered Peak Flow (gpd)
PS-1 *	1,728,000	439,600
PS-2	72,000	10,300
PS-3	410,400	147,300
PS-4	144,000	57,300
PS-5	44,100	14,600

* PS –1 has three (3) pumps and was designed and permitted to have two (2) operating simultaneously with the third pump as stand-by.

7. PUMPING STATION FLOW DURING MAJOR STORM EVENTS

The Department requires Chapter 94 Reports to include a discussion of metered flow data for the collection and conveyance systems, specifically during major storm events where 1.0 inch of rain or greater fell.

Exhibit "F" contains a chart of peak rain event flows at the five (5) pumping stations – Main Pumping Station (PS-1), Wood Crest Estate Pumping Station (PS-2), Coventry Glen Pumping Station (PS-3), Creekview Pumping Station (PS-4) and Sawmill Road Pumping Station (PS-5) for the sixteen (16) days in 2021 where rain fell 1 inch or more in a 24-hour period. As related to yearly average flow, the peaking factors for the five pump stations during the rain events are as follows:

	Yearly Avg. Flow (GPD)	Rain Events Peaking Factor High	Average	Design
Main Pumping Station (PS-1)	135,170	3.25	1.36	3.35
Wood Crest Pumping Station (PS-2)	4,974	2.07	1.30	4.20
Coventry Glen Pumping Station (PS-3)	53,404	2.76	1.35	3.80
Creekview Pumping Station (PS-4)	19,105	3.00	1.32	4.10
Sawmill Road Pumping Station (PS-5)	1,827	7.99	1.96	4.20

Based on the 2021 flow meter readings and the preceding rain event peaking factors, the current peaking factors are sufficient for the pumping stations under normal rainfall events. However, the abnormal 9-inch rainfall event on September 1, 2021 did cause the Sawmill Road Pumping Station (PS-5) to exceed its design peaking factor, but no sanitary sewer overflows were occasioned at the pump station. The flow and rainfall data for each pumping station is graphed in Exhibit "G".

8. CONDITION OF THE SEWER SYSTEM

During 2021, the sanitary sewer collection and conveyance systems operated as designed with no malfunctions. The highest 2021 average monthly flow at the Main Pumping Station was 135,170 gallons per day (gpd). The highest flow at the pump station during 2021 storm events of 1-inch or greater rainfall was 439,600 gpd. An 8-inch sewer main set at the PADEP minimum scouring slope of 0.005 is capable of carrying 551,000 gpd; therefore, any sewer main in the system was capable of carrying the 2021 average and maximum storm event flows.

9. INDUSTRIAL WASTES

There are no known industrial waste dischargers within East Coventry Township.

10. CALIBRATION REPORTS

A copy of the calibration report for all five (5) pump stations is included in Exhibit "H.

Exhibit A

East Coventry Township

Hydraulic Loading

EXHIBIT A1
EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING DATA (GPD)
2017 - 2021

Month	2017	2018	2019	2020	2021	2021 Rainfall (in.)
January	125,587	120,574	133,500	126,694	135,974	1.90
February	114,952	138,496	126,200	121,662	141,743	2.50
March	122,752	136,510	133,823	132,197	142,752	3.70
April	123,740	122,820	122,547	137,637	132,520	1.50
May	119,845	126,306	129,545	130,974	136,526	5.40
June	117,540	120,430	117,467	122,743	132,953	4.00
July	119,116	128,810	126,952	124,206	122,903	4.10
August	118,665	131,003	112,574	136,787	128,087	6.30
September	122,937	141,733	117,543	128,577	147,293	12.60
October	123,897	119,913	120,226	130,687	133,039	3.45
November	119,780	146,833	120,900	138,697	133,990	1.20
December	119,174	134,861	125,152	145,513	134,265	1.65
Average Annual Flow (MGD)	**120,665**	**130,691**	**123,869**	**131,365**	**135,170**	
					Total	**48.30**
Max. 3 Month Ave. Flow (MGD)	**122,205**	**136,160**	**131,174**	**138,299**	**140,156**	
PEAKING FACTOR						
Max. 3 Month Ave. Flow / Ave. Annual Flow	**1.010**	**1.040**	**1.060**	**1.050**	**1.040**	
Flow Peaking Factor: Average 5 Year Ratio	**1.040**					

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING

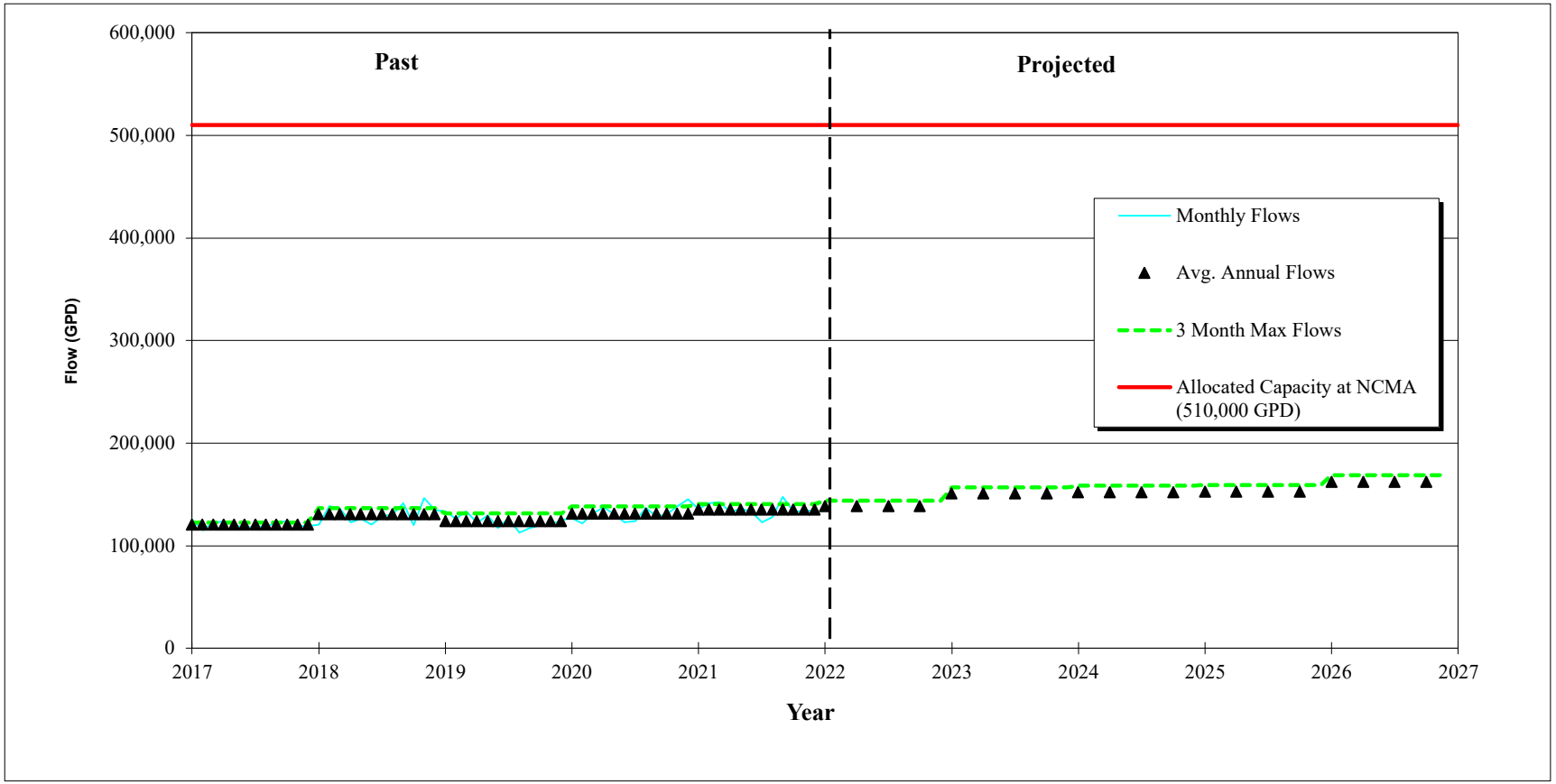

EXHIBIT A2

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
HYDRAULIC LOADING

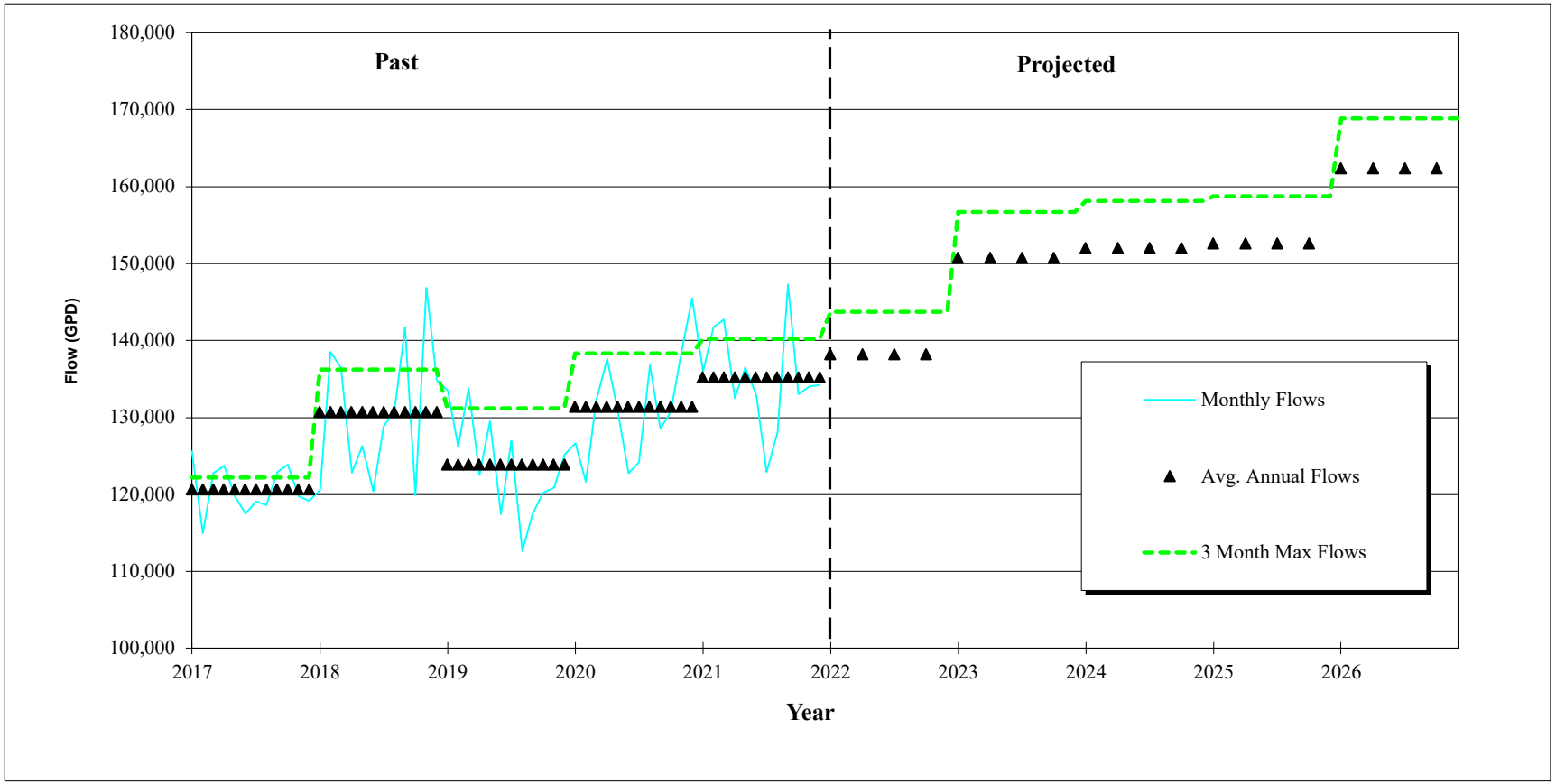

EXHIBIT A2a

Exhibit B

East Coventry Township

Organic Loading

EXHIBIT B1
EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING DATA (lbs BOD5/Day)
2017 - 2021

Month	2017	2018	2019	2020	2021
January	235.7	226.3	250.5	237.7	255.2
February	215.7	259.9	236.8	228.3	266.0
March	230.3	256.2	251.1	248.1	267.9
April	232.2	230.5	230.0	258.3	248.7
May	224.9	237.0	243.1	245.8	256.2
June	220.6	226.0	220.4	230.3	249.5
July	223.5	241.7	238.2	233.1	230.6
August	222.7	245.8	211.2	256.7	240.4
September	230.7	266.0	220.6	241.3	276.4
October	232.5	225.0	225.6	245.2	249.6
November	224.8	275.5	226.9	260.3	251.4
December	223.6	253.1	234.8	273.1	251.9
Average Annual BOD5 (lbs/Day)	**226.4**	**245.2**	**232.4**	**246.5**	**253.6**
Max. 1 Month BOD5 Loading (lbs/Day)	**235.7**	**275.5**	**251.1**	**273.1**	**276.4**
RATIO: Max. 1 Month BOD5 / Ave. Annual BOD5	**1.04**	**1.12**	**1.08**	**1.11**	**1.09**

Organic Peaking Factor:	
Average 5 Year Ratio	**1.09**

EXHIBIT B2
EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PAST AND PROJECTED LOADINGS

Year	EDUs	Connected Population	Average Total Flow (gpd)	Max. 3 Month Ave. Flow (gpd)	Per Capita Flow (gpcd)	Average Total BOD5 (lbs/day)	Per Capita BOD5 (lbs/day)
2017	1,008	2,646	120,665	122,205	46	226	0.086
2018	1,024	2,688	130,691	136,160	49	245	0.091
2019	1,064	2,793	123,869	131,174	44	232	0.083
2020	1,109	2,911	131,365	138,299	45	247	0.085
2021	1,115	3,011	135,170	140,156	45	254	0.084
Average		**2,810**	**128,352**		**45**	**241**	**0.086**
Projected Loadings							
2022	1,140	3,078	138,201	143,729	45	264	0.086
2023	1,243	3,356	150,688	156,715	45	288	0.086
2024	1,254	3,386	152,021	158,102	45	290	0.086
2025	1,259	3,399	152,627	158,732	45	292	0.086
2026	1,339	3,615	162,326	168,819	45	310	0.086

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
ORGANIC LOADING

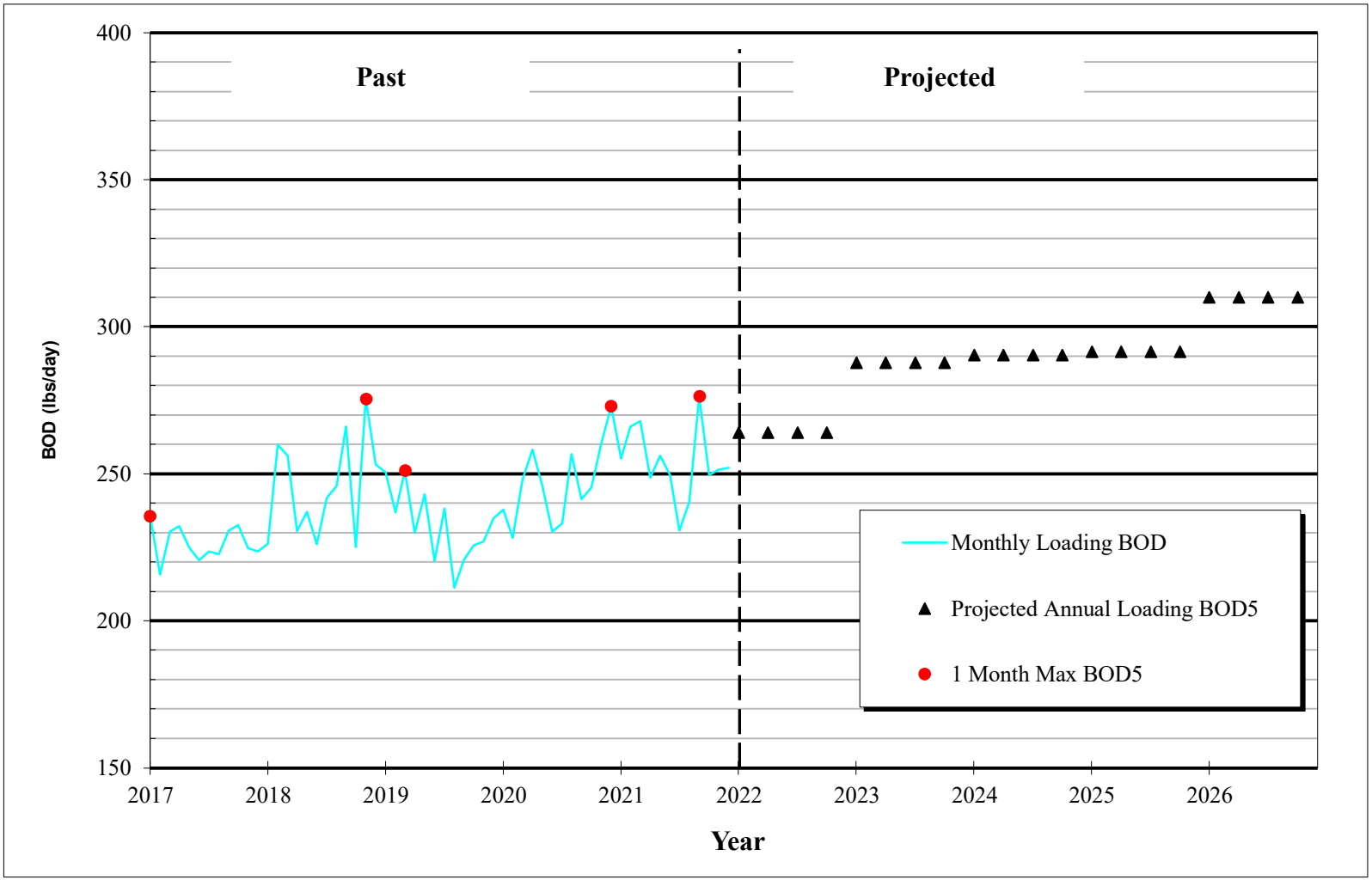

EXHIBIT B3

Exhibit C

East Coventry Township

Sanitary Sewer System Map

with

Proposed Development

Sanitary Sewer System

East Coventry Township
Chester County, Pennsylvania

NCMA WWTP

Lower Pottsgrove Township
(Montgomery County)

North Coventry Township

Schuylkill River

Bickels Run

PS-1 **PS-2** **PS-3** **PS-4** **PS-5**

Enclave at Ellis Woods
12 Proposed EDUs

Vaughn Rd
Crest Ln
Country Ln
Speece Rd
Mark Dr
Sanatoga Rd
Fricks Lock Rd
New Schuylkill Rd
Peterman Rd
LaDelle Ln
Savage Rd
Old Schuylkill Rd
Crater Ln
Brower Ln
Riverview Rd
Pleasant Ln
Roberts Cir
Gaugers Ln
E Cedarville Rd
Springhouse Ln
Brownstone Dr
Lubold Rd
Stonn Creek Ln
Earl Dr
Tisa Ln
Harley Rd
Schoolhouse Rd
Sawmill Rd
Mitchell Dr
Meadow Ln
Orchard Ln
Andersen Rd
Halleman Rd
Ellis Woods Rd
Hershey Dr
Wood Cliff Ct
Linwood Ct
Edelhare Rd

Legend

- Wastewater Treatment Plants
- Pump Stations
- Grinder Pumps
- Manholes
- Laterals
- Force Mains
- Gravity Sewers
- Low Pressure Sewers
- Municipal Boundaries
- Streams
- Rivers, Lakes & Ponds
- Proposed Developments
- Parcels

0 450 900 1,350 1,800 Feet
1 inch = 450 feet

Note: Road, parcel, municipal boundary, and river/stream information based on Chester County GIS.

Revised Date: 1/19/2021

ARRO

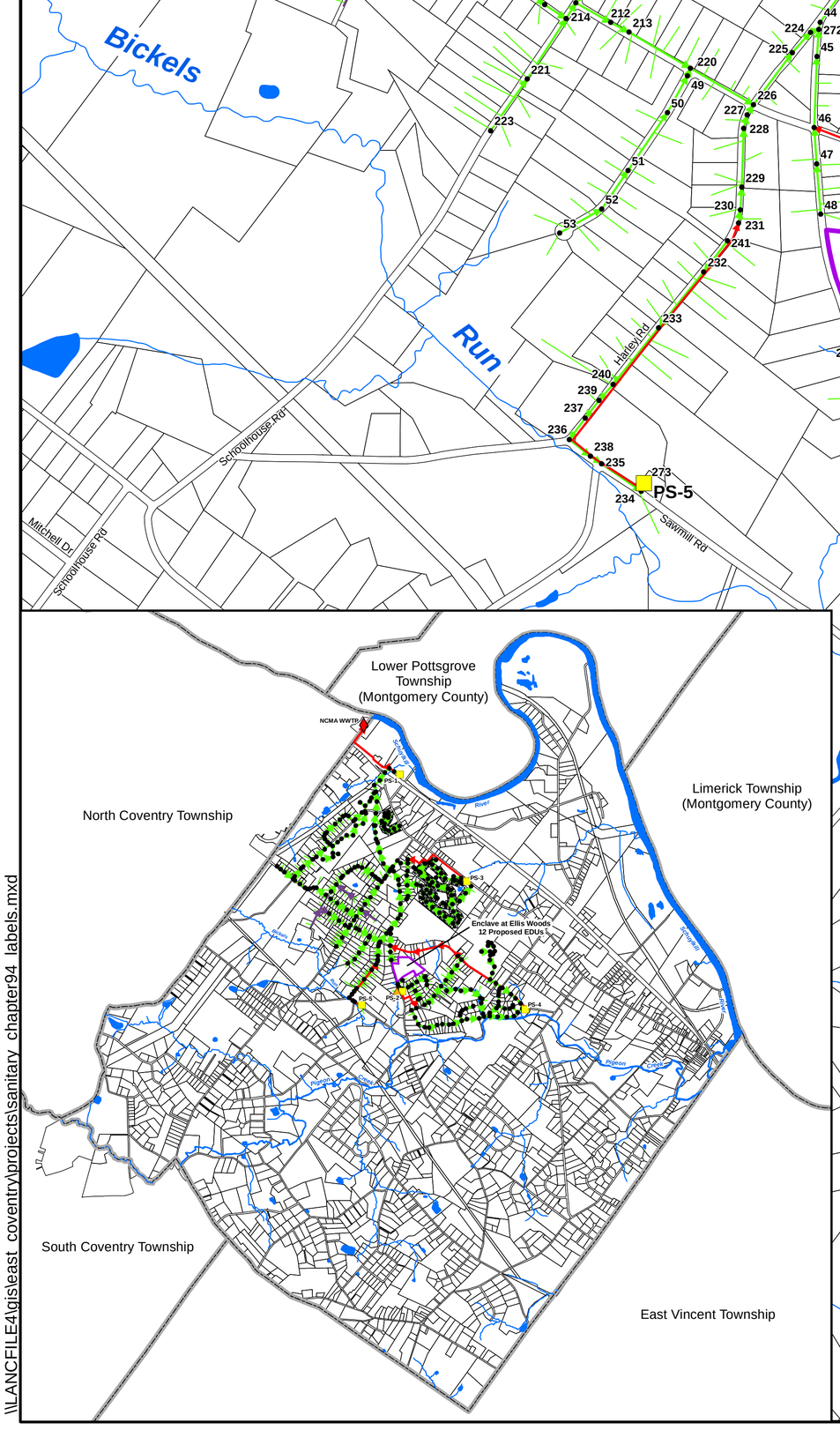

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Exhibit D

East Coventry Township

Pumping Station Monthly Flow Information

EXHIBIT D
EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
AVERAGE MONTHLY METERED PUMP STATION FLOW

PUMP STATIONS NO. 1, NO. 2, NO. 3, NO. 4 and NO. 5

Year	Month	Average Monthly Flow, GPD					Monthly Rainfall
		PS 1 Avg. Monthly Flow	PS 2 Avg. Monthly Flow	PS 3 Avg. Monthly Flow	PS 4 Avg. Monthly Flow	PS 5 Avg. Monthly Flow	
2021	January	135,974	5,142	56,245	19,426	1,761	1.90
	February	141,743	5,436	58,450	20,021	1,854	2.50
	March	142,752	5,110	59,387	20,123	1,726	3.70
	April	132,520	4,783	52,310	18,783	1,713	1.50
	May	136,526	5,023	54,868	18,613	1,813	5.40
	June	132,953	4,733	53,883	17,117	1,773	4.00
	July	122,903	4,523	46,771	16,526	1,716	4.10
	August	128,087	4,958	49,245	17,965	1,819	6.30
	September	147,293	4,893	57,853	21,157	2,163	12.60
	October	133,039	4,926	49,874	19,694	1,806	3.45
	November	133,990	5,223	51,233	20,070	1,867	1.20
	December	134,265	4,942	50,723	19,768	1,906	1.65
Avg Annual Flow (GPD) =		**135,170**	**4,974**	**53,404**	**19,105**	**1,827**	
Peak Avg Monthly Flow (GPD) =		**147,293**	**5,436**	**59,387**	**21,157**	**2,163**	
Pump Max * (GPD) =		**1,728,000**	**72,000**	**410,400**	**324,000**	**44,100**	

*** = With 1 pump on standby**

Exhibit E

East Coventry Township

Pumping Stations Flow vs Rainfall - Graphs

Main Pumping Station (PS-1)
Wood Crest Estates Pumping Station (PS-2)
Coventry Glen Pumping Station (PS-3)
Creekview Pumping Station (PS-4)
Sawmill Road Pumping Station (PS-5)

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION AVERAGE MONTHLY FLOW VERSUS RAINFALL

MAIN PUMPING STATION (PS-1)

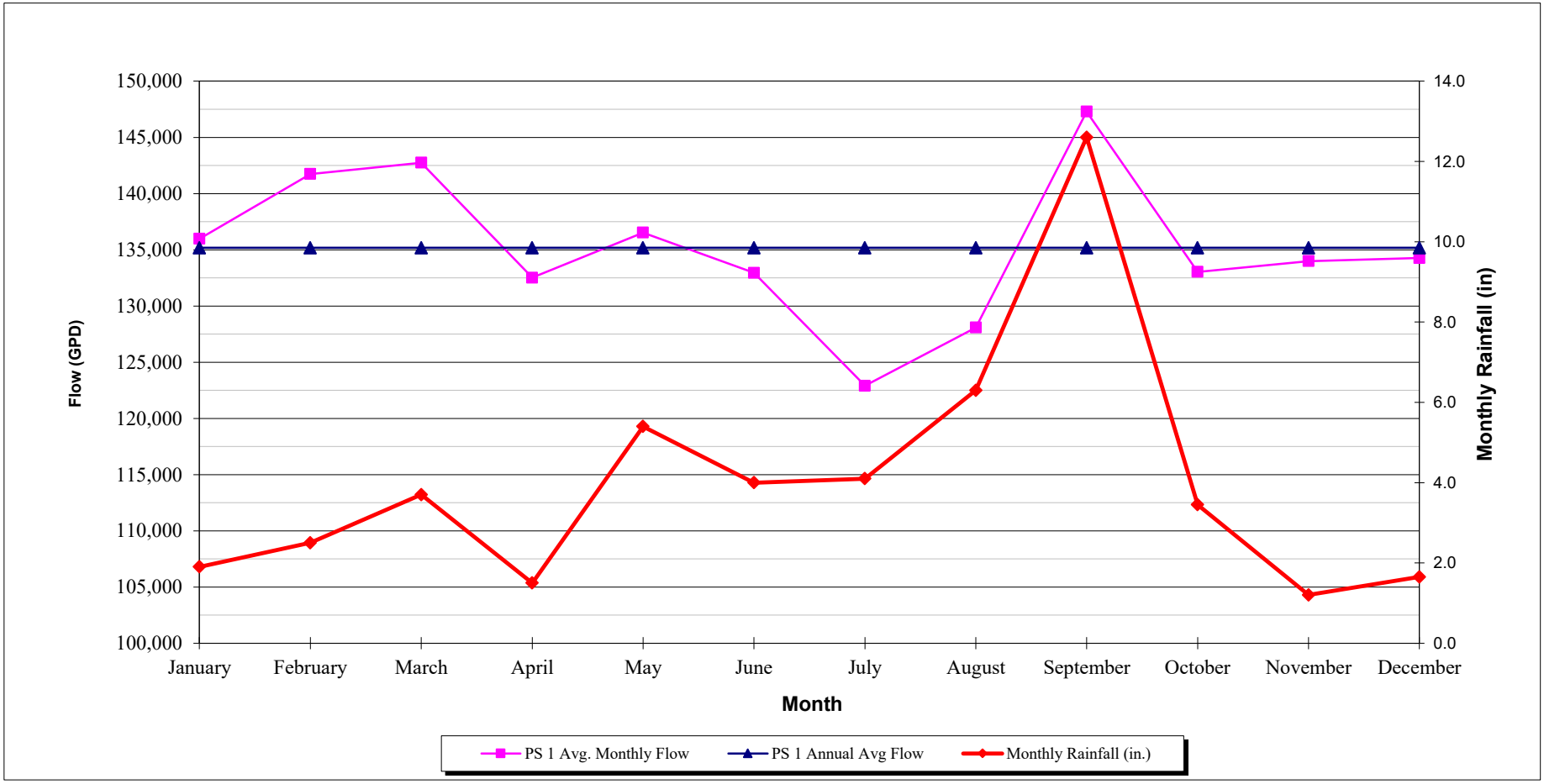

EXHIBIT E1

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION AVERAGE MONTHLY FLOW VERSUS RAINFALL

WOOD CREST PUMPING STATION (PS-2)

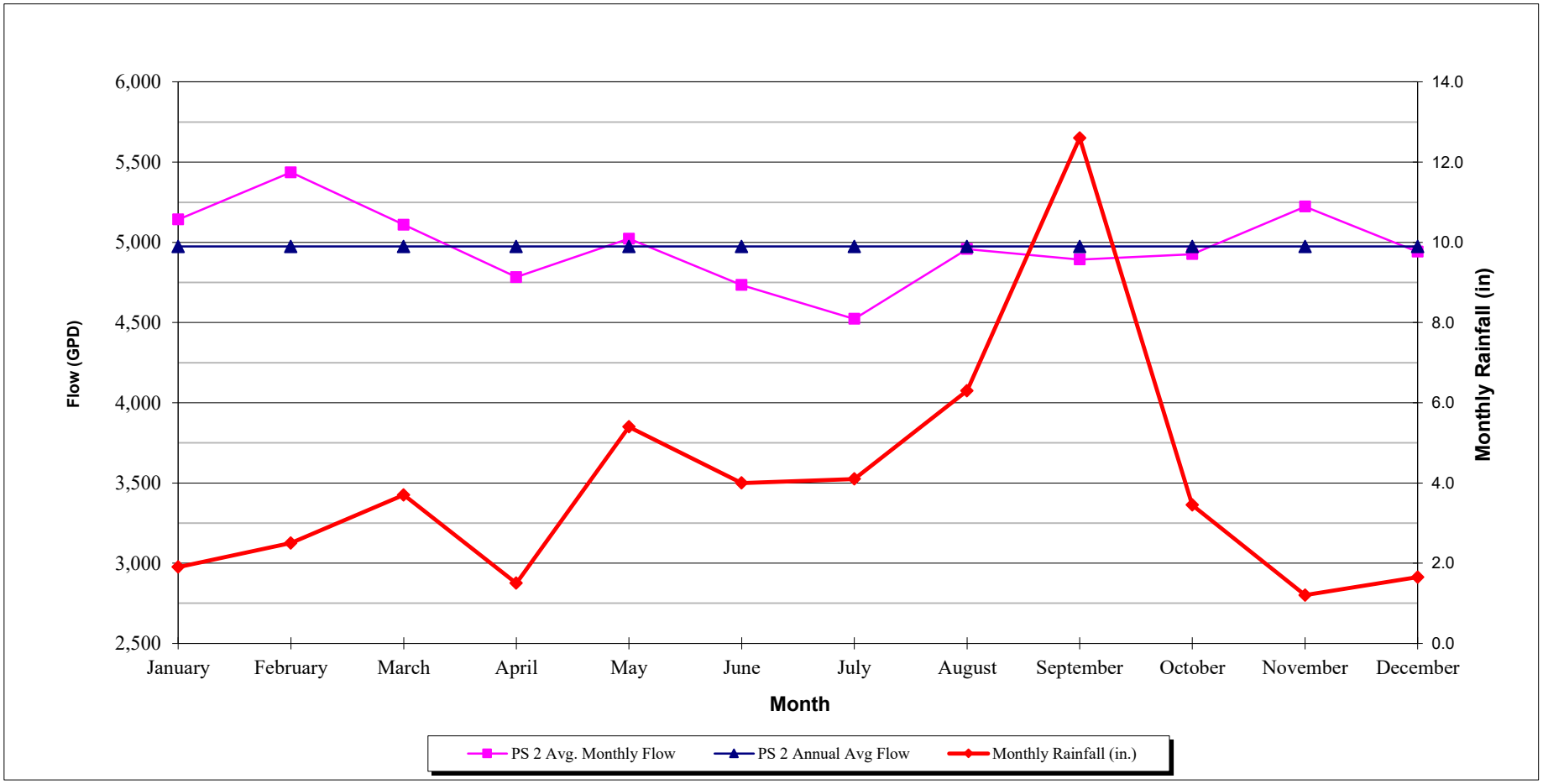

EXHIBIT E2

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION AVERAGE MONTHLY FLOW VERSUS RAINFALL

COVENTRY GLEN PUMPING STATION (PS-3)

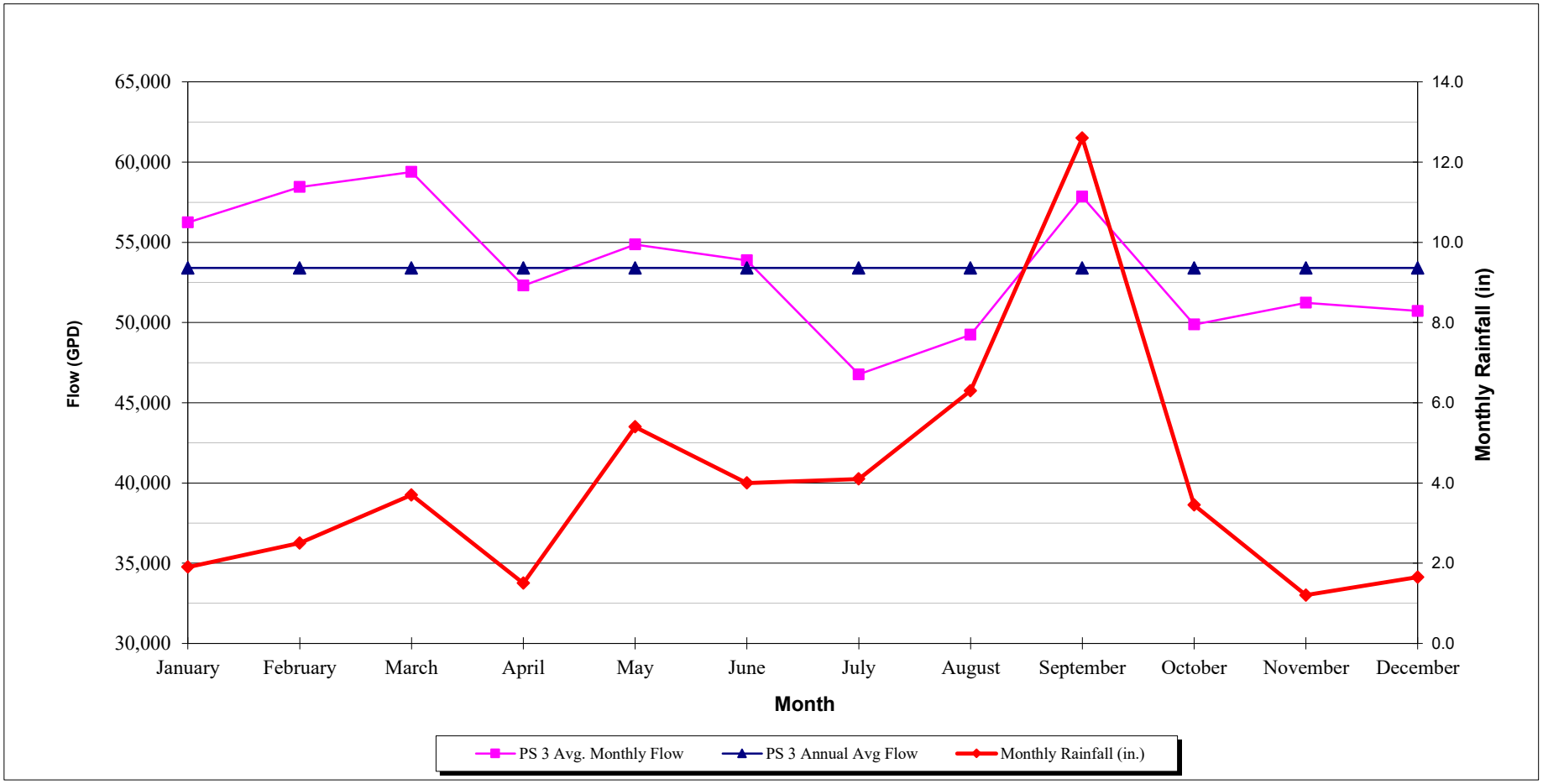

EXHIBIT E3

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION AVERAGE MONTHLY FLOW VERSUS RAINFALL

CREEKVIEW PUMPING STATION (PS-4)

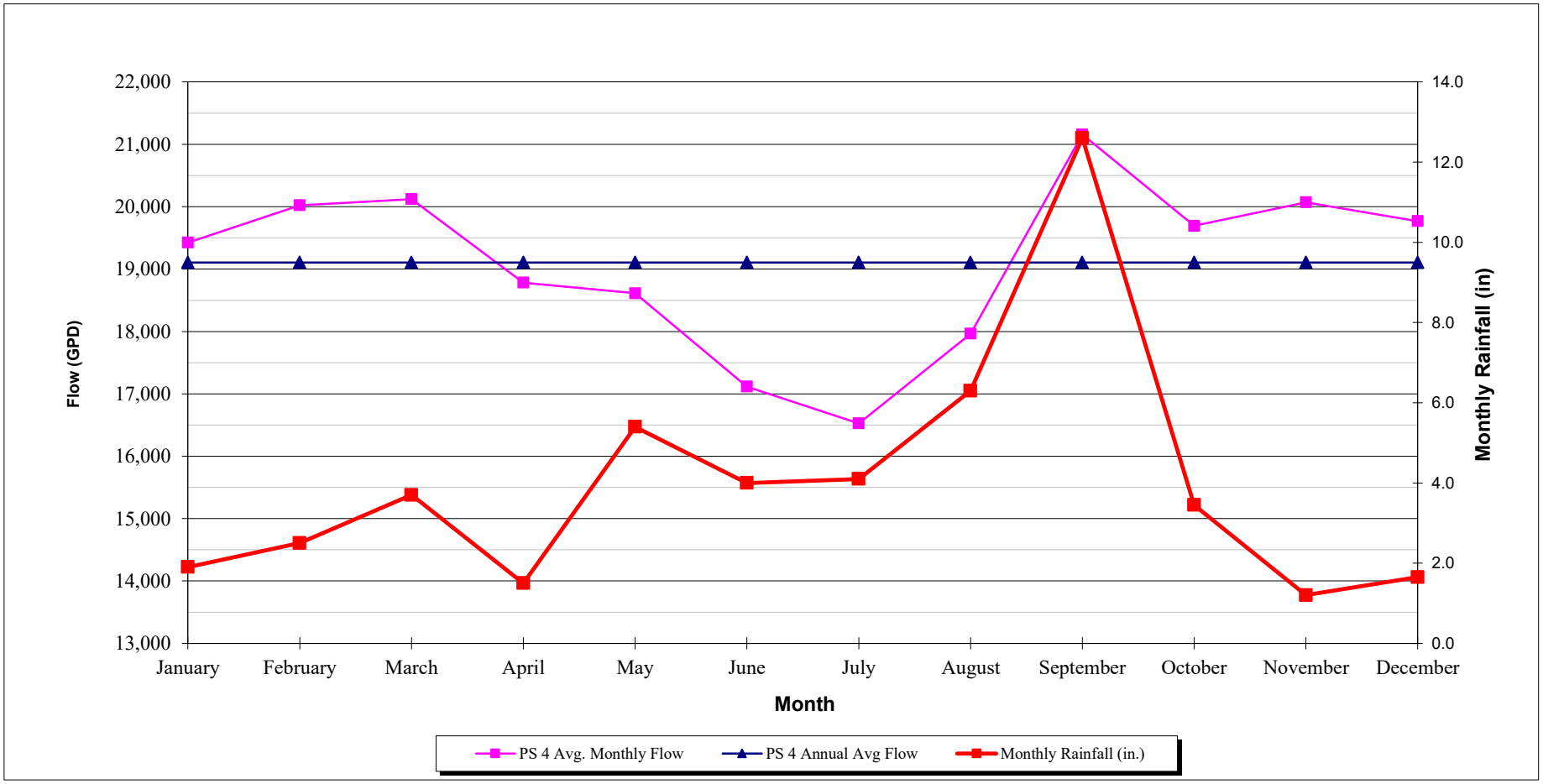

EXHIBIT E4

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION AVERAGE MONTHLY FLOW VERSUS RAINFALL

SAWMILL ROAD PUMPING STATION (PS-5)

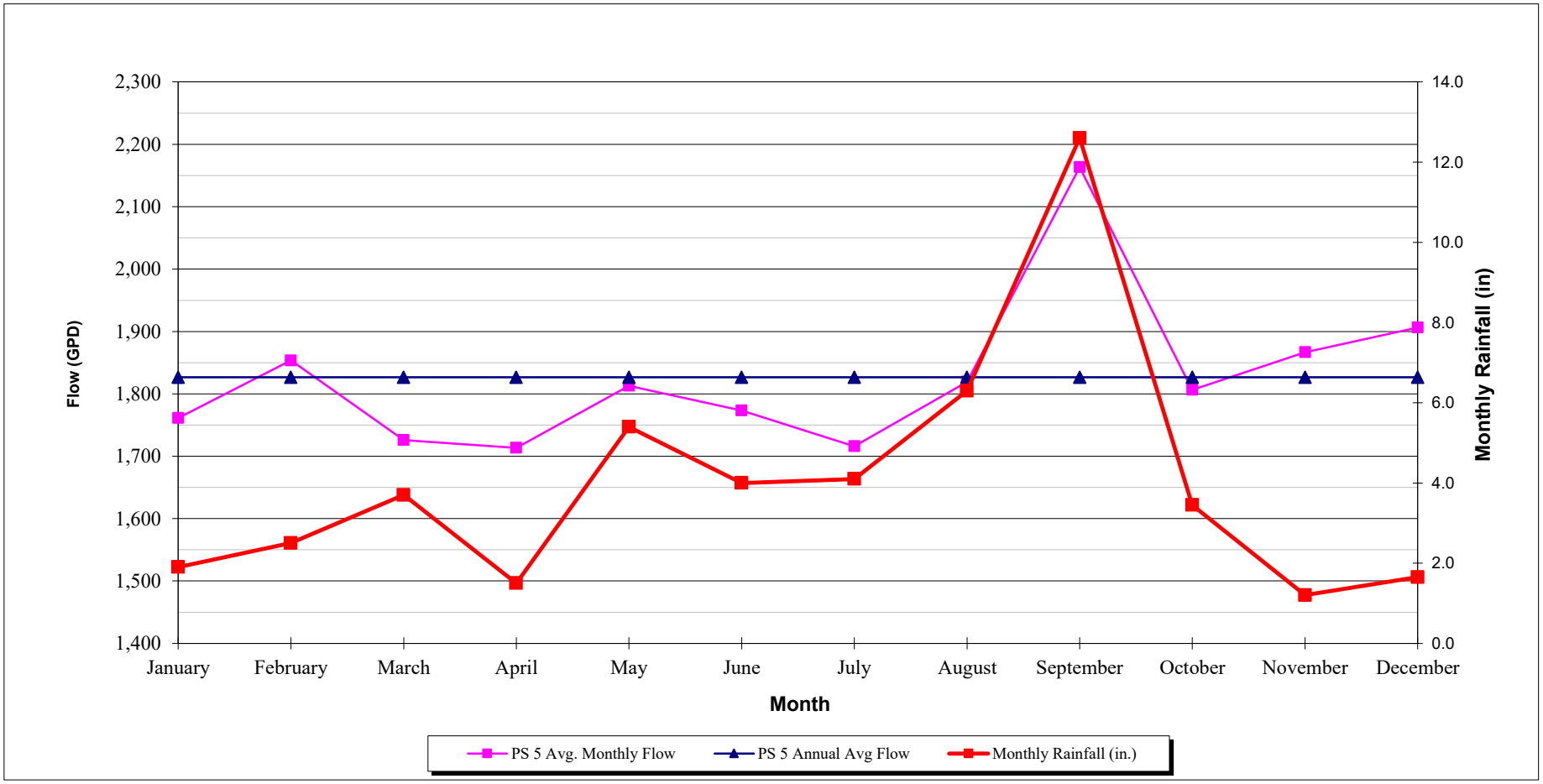

EXHIBIT E5

Exhibit F

East Coventry Township

1-Inch Plus Rainfall vs. Flow

At Pumping Stations – Summary

Main Pumping Station (PS-1)
Wood Crest Estates Pumping Station (PS-2)
Coventry Glen Pumping Station (PS-3)
Creekview Pumping Station (PS-4)
Sawmill Road Pumping Station (PS-5)

EXHIBIT F
EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

Rain Date	Daily Rainfall (in.)	PS 1		PS 2		PS 3		PS 4		PS 5	
		Rainfall Flow (GPD)	Measured Peaking Factor	Rainfall Flow (GPD)	Measured Peaking Factor	Rainfall Flow (GPD)	Measured Peaking Factor	Rainfall Flow (GPD)	Measured Peaking Factor	Rainfall Flow (GPD)	Measured Peaking Factor
01/01/21	1.00	157,900	1.17	6,100	1.23	62,900	1.18	22,200	1.16	2,700	1.48
02/15/21	1.00	173,400	1.28	6,700	1.35	73,000	1.37	26,200	1.37	2,100	1.15
02/28/21	1.10	242,600	1.79	10,300	2.07	104,500	1.96	37,000	1.94	4,800	2.63
03/18/21	1.00	143,900	1.06	5,800	1.17	57,200	1.07	19,900	1.04	1,700	0.93
03/24/21	1.60	188,400	1.39	7,800	1.57	73,400	1.37	29,200	1.53	3,600	1.97
04/11/21	1.00	159,300	1.18	6,000	1.21	60,700	1.14	22,600	1.18	2,800	1.53
05/26/21	1.20	137,300	1.02	4,700	0.94	56,700	1.06	19,000	0.99	2,000	1.09
05/30/21	3.30	181,100	1.34	6,700	1.35	90,900	1.70	19,100	1.00	1,700	0.93
06/03/21	2.00	180,900	1.34	6,200	1.25	73,100	1.37	22,800	1.19	3,700	2.03
07/01/21	1.60	134,400	0.99	5,000	1.01	51,600	0.97	15,800	0.83	2,600	1.42
08/18/21	3.00	150,700	1.11	4,900	0.99	55,300	1.04	21,700	1.14	3,700	2.03
08/22/21	1.40	159,000	1.18	5,400	1.09	61,700	1.16	20,600	1.08	2,900	1.59
09/01/21	9.00	439,600	3.25	9,300	1.87	147,300	2.76	57,300	3.00	14,600	7.99
09/23/21	2.00	164,600	1.22	6,400	1.29	58,600	1.10	24,600	1.29	3,600	1.97
10/25/21	1.50	154,800	1.15	5,800	1.17	58,900	1.10	24,300	1.27	2,800	1.53
10/29/21	1.25	163,300	1.21	6,200	1.25	67,300	1.26	22,200	1.16	2,000	1.09
Measured Annual Avg Flow (GPD) =		**135,170**		**4,974**		**53,404**		**19,105**		**1,827**	
Measured Peak Flow (GPD) =		**439,600**		**10,300**		**147,300**		**57,300**		**14,600**	
Permitted Average Flow (GPD) =		**510,000**		**5,775**		**106,575**		**75,337**		**10,500**	
Pump Max* (GPD) =		**1,728,000**		**72,000**		**410,400**		**324,000**		**44,100**	
Pump Max / Peak Flow Factor =			**3.93**		**6.99**		**2.79**		**5.65**		**3.02**
High Peaking Factor =			**3.25**		**2.07**		**2.76**		**3.00**		**7.99**
Average Peaking Factor =			**1.36**		**1.30**		**1.35**		**1.32**		**1.96**
Design Peaking Factor =			**3.35**		**4.20**		**3.80**		**4.10**		**4.20**

*** = With 1 pump on standby**

Exhibit G

East Coventry Township

1-Inch Plus Rainfall vs. Flow

At Pumping Stations - Graphs

Main Pumping Station (PS-1)
Wood Crest Estates Pumping Station (PS-2)
Coventry Glen Pumping Station (PS-3)
Creekview Pumping Station (PS-4)
Sawmill Road Pumping Station (PS-5)

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

MAIN PUMPING STATION (PS-1)

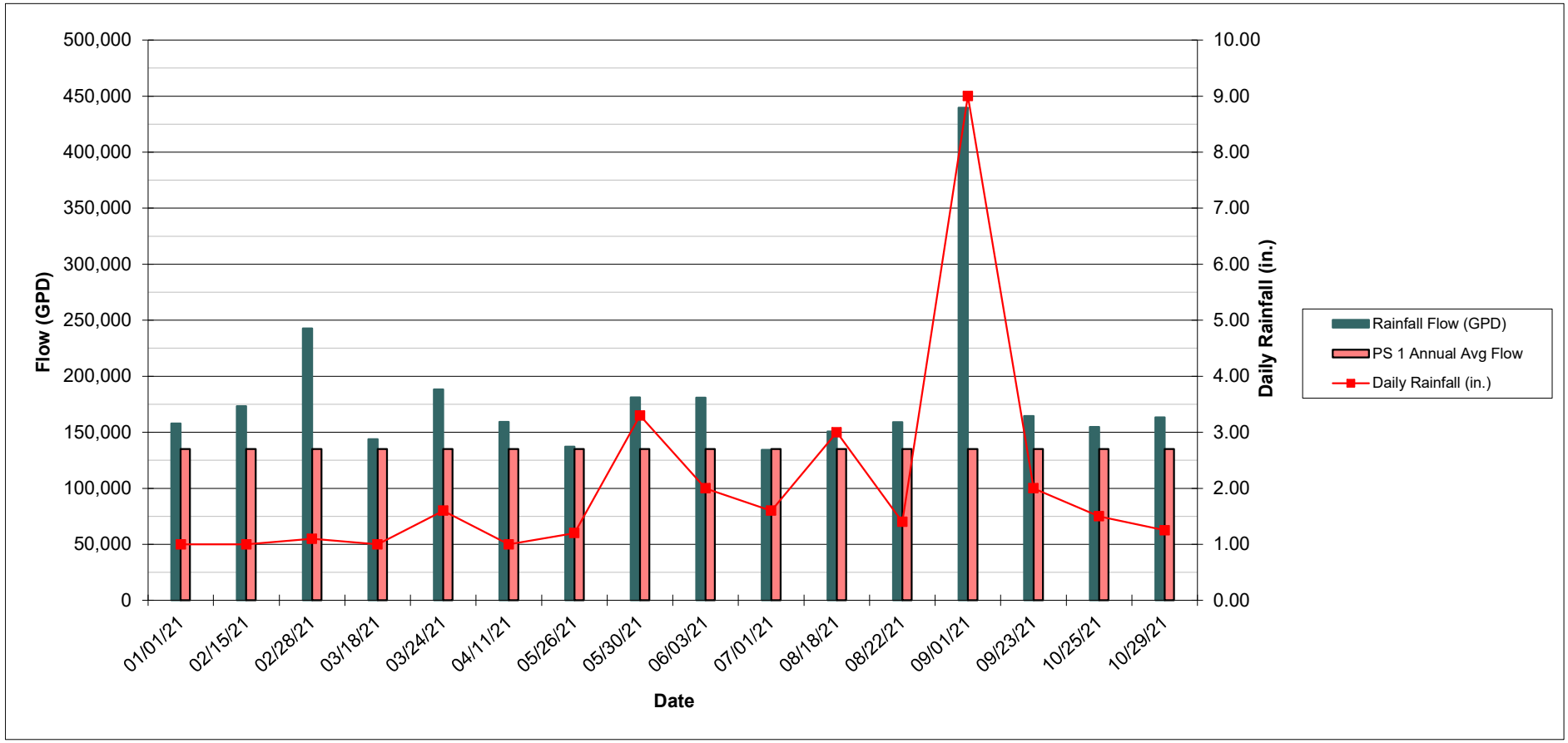

EXHIBIT G1

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

WOOD CREST PUMPING STATION (PS-2)

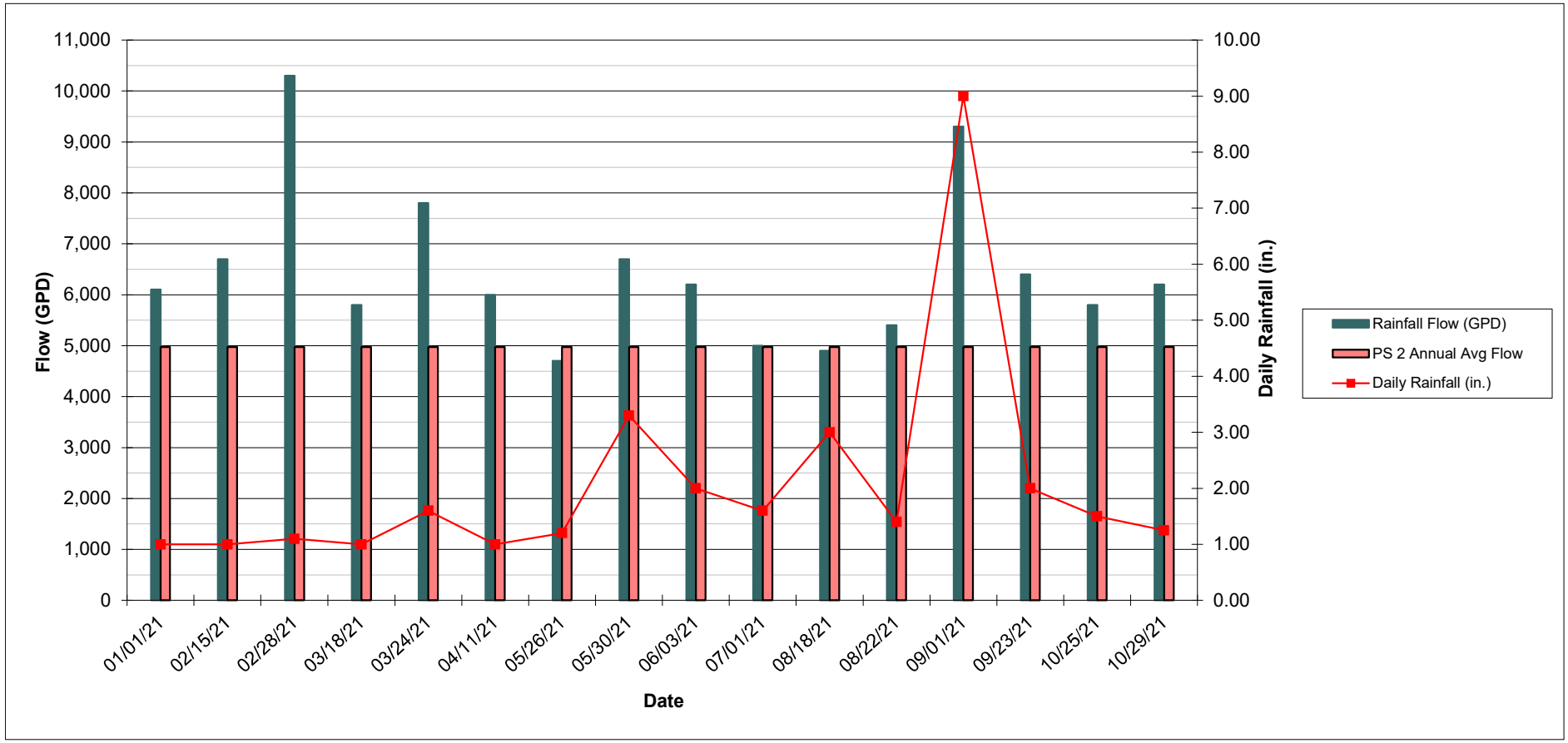

EXHIBIT G2

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

COVENTRY GLEN PUMPING STATION (PS-3)

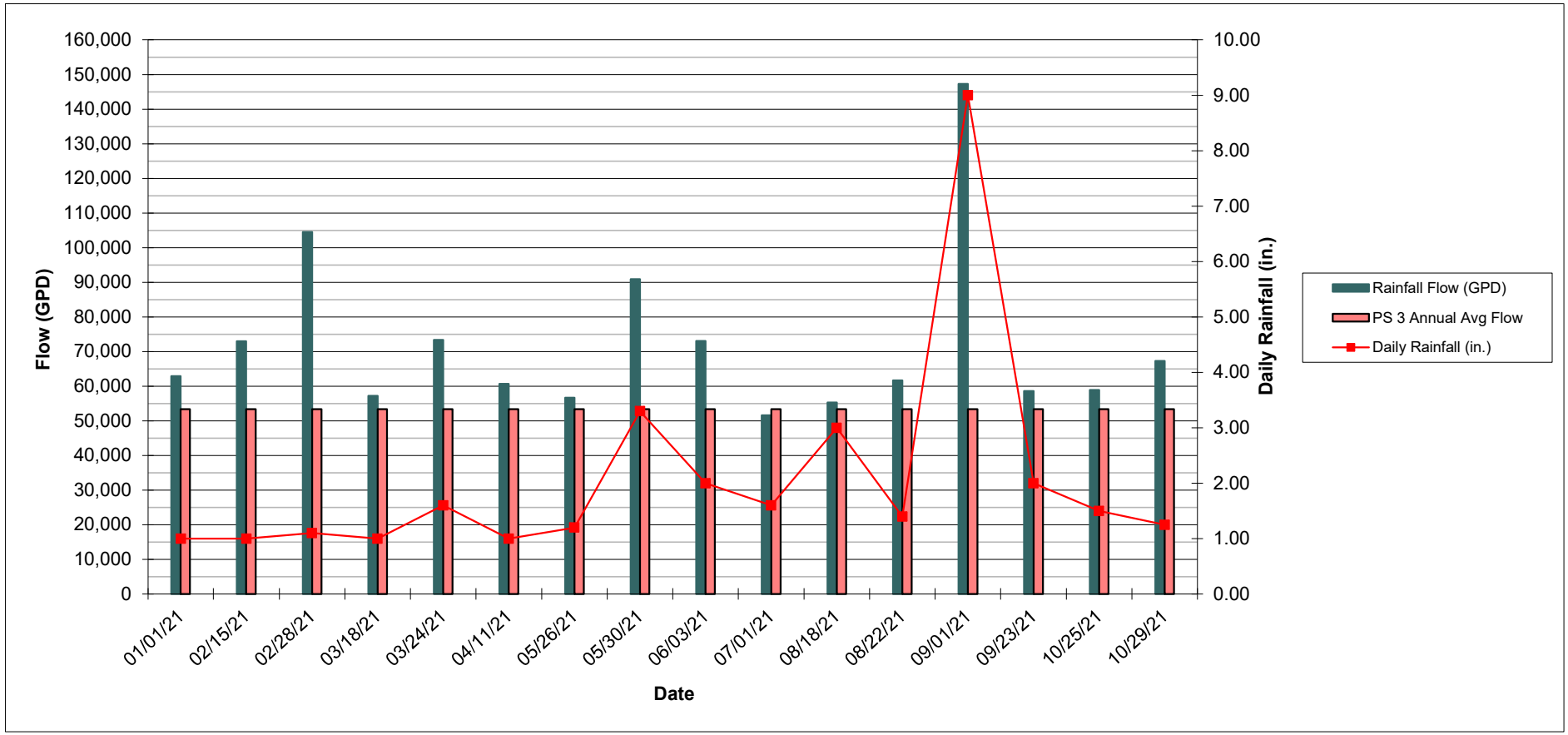

EXHIBIT G3

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

CREEKVIEW PUMPING STATION (PS-4)

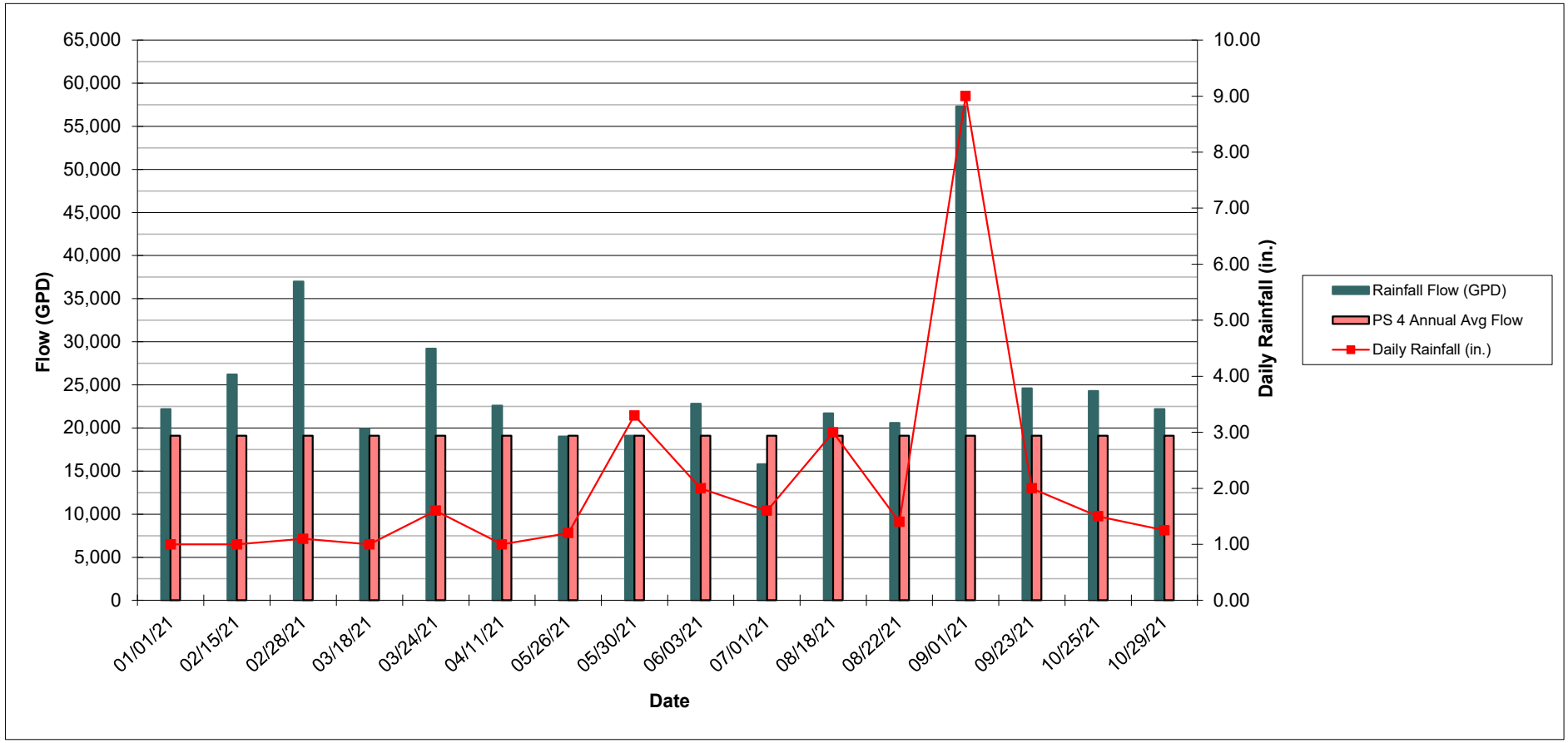

EXHIBIT G4

EAST COVENTRY TOWNSHIP
2021 ANNUAL CHAPTER 94 REPORT
PUMP STATION FLOW AT RAINFALL GREATER THAN 1.0 INCH PER DAY

SAWMILL ROAD PUMPING STATION (PS-5)

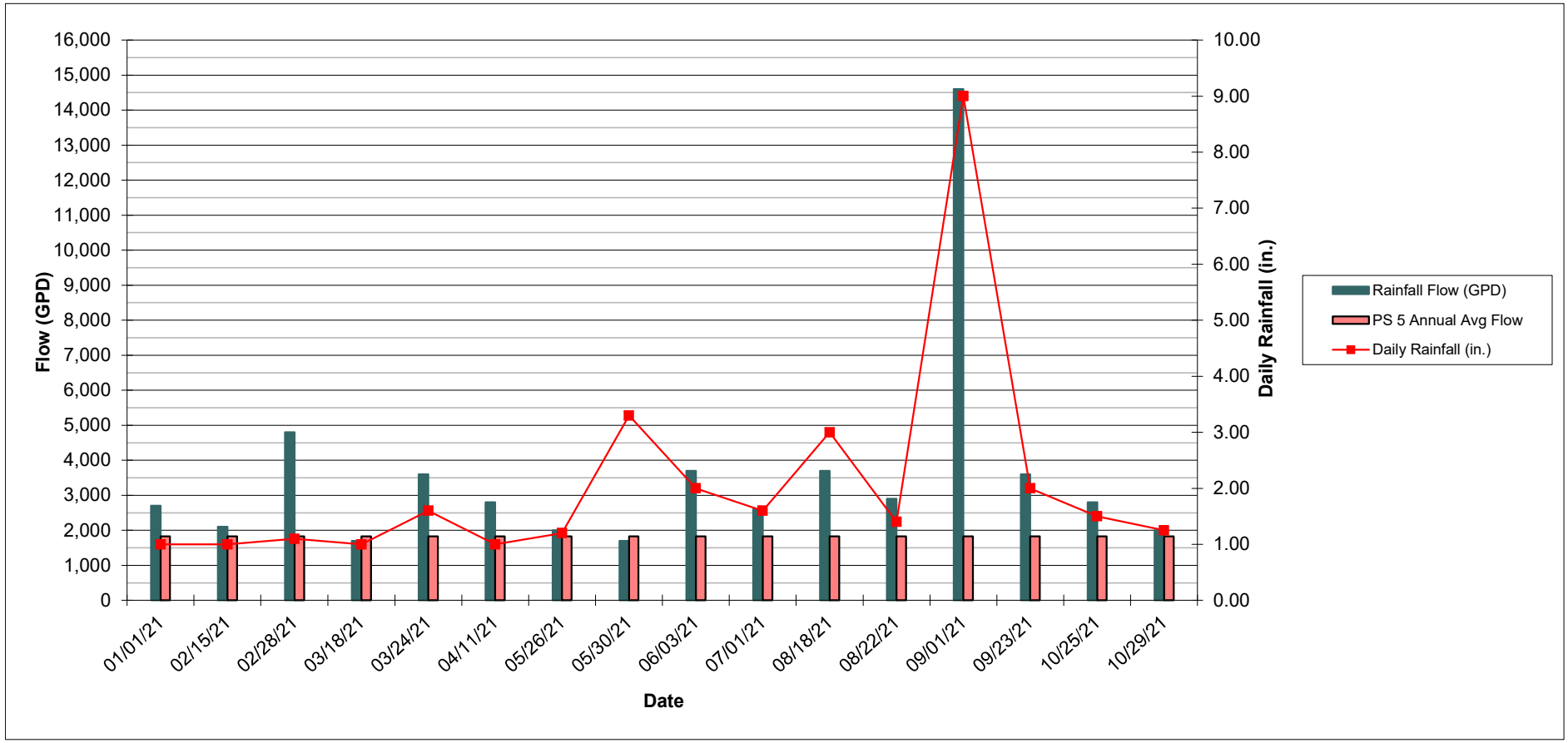

EXHIBIT G5

Exhibit H

East Coventry Township

Pump Station Flow Meter

Calibration Report

LRM, Inc

Instrumentation & Disinfection Systems

Appendix A-5.1

Calibration Date
10/24/2021

User
EAST COVENTRY TOWNSHIP
855 Ellis Wood Road
Pottstown
PA 19465

Job Site
PUMP STATION 1
ROUTE 724 & PETERMAN RD.
EAST COVENTRY, PA

Instrument Manufacturer/Model No:
ENDRESS & HAUSER
50W

Instrument S/N:
6501551600

Instrument Loop:
EFFLUENT

Input Type:
MAGMETER

Primary Signal Producer:
MAG PRIMARY

Calibrated Range:
0-1500 GPM

Instrument Settings:

Found

Zero	Span
0 GPM	1500 GPM

Changed To

Zero	Span
NA	NA

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.00 MA	0.0000
50 %	750.00 GPM	12.00 MA	0.0000
100 %	1500.00 GPM	20.00 MA	0.0000

Equipment Used: FIELDCHECK VERIFICATION

RECEIVED
NOV 15 2021
EAST COVENTRY TWP

Adjustments / Actions Taken: NONE

Comments:

Service Representative: Mike Sollazzo

Date: 10/24/2021

WO #: 4857

LRM, Inc

Instrumentation & Disinfection Systems

Appendix A-5.1

Calibration Date
10/24/2021

EAST COVENTRY TOWNSHIP

PUMP STATION ~~#4~~ #2

User
855 Ellis Wood Road
Pottstown
PA 19465

Job Site

Instrument Manufacturer/Model No:
ENDRESS & HAUSER
50W

Instrument S/N:
6C028A16000

Instrument Loop:
EFFLUENT

Input Type:
MAGMETER

Primary Signal Producer:
MAG PRIMARY

Calibrated Range:
0-100 GPM

Instrument Settings:

Found

Zero	Span
0 GPM	100 GPM

Changed To

Zero	Span
NA	NA

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.00 MA	0.0000
50 %	50.00 GPM	12.00 MA	0.0000
100 %	100.00 GPM	20.00 MA	0.0000

Equipment Used: FIELDCHECK VERIFICATION

RECEIVED
NOV 15 2021
EAST COVENTRY TWP

Adjustments / Actions Taken: NONE

Comments:

Service Representative: Mike Sollazzo

Date: 10/24/2021

WO #: 4858

LRM, Inc

Instrumentation & Disinfection Systems

Appendix A-5.1

Calibration Date
10/24/2021

EAST COVENTRY TOWNSHIP	PUMP STATION 3

User
855 Ellis Wood Road
Pottstown
PA 19465

Job Site

Instrument Manufacturer/Model No:
ENDRESS & HAUSER
50W

Instrument S/N:
7202691600

Instrument Loop:
EFFLUENT

Input Type:
MAGMETER

Primary Signal Producer:
MAG PRIMARY

Calibrated Range:
0-500 GPM

Instrument Settings:

Found

Zero	Span
0 GPM	500 GPM

Changed To

Zero	Span
NA	NA

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.00 MA	0.0000
50 %	250.00 GPM	12.00 MA	0.0000
100 %	500.00 GPM	20.00 MA	0.0000

Equipment Used: FIELDCHECK VERIFICATION

RECEIVED
NOV 15 2021
EAST COVENTRY TWP

Adjustments / Actions Taken: NONE

Comments:

Service Representative: Mike Sollazzo

Date: 10/24/2021

WO #: 4859

LRM, Inc

Instrumentation & Disinfection Systems

Appendix A-5.1

Calibration Date
10/24/2021

EAST COVENTRY TOWNSHIP

PUMP STATION 4

User
855 Ellis Wood Road
Pottstown
PA 19465

Job Site

Instrument Manufacturer/Model No:
ENDRESS & HAUSER
50W

Instrument S/N:
7402FE16000

Instrument Loop:
EFFLUENT

Input Type:
MAGMETER

Primary Signal Producer:
MAG PRIMARY

Calibrated Range:
0-500 GPM

Instrument Settings:

Found

Zero	Span
0 GPM	500 GPM

Changed To

Zero	Span
NA	NA

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.00 MA	0.000000000000
50 %	250.00 GPM	12.00 MA	0.000000000000
100 %	500.00 GPM	20.00 MA	0.000000000000

Equipment Used: FIELDCHECK VERIFICATION

RECEIVED
NOV 15 2021
EAST COVENTRY TWP

Adjustments / Actions Taken: NONE

Comments:

Service Representative: Mike Sollazzo

Date: 10/24/2021

WO #: 4860

LRM, Inc

Instrumentation & Disinfection Systems

Appendix A-5.1

Calibration Date
10/24/2021

EAST COVENTRY TOWNSHIP	PUMP STATION 5

User
855 Ellis Wood Road
Pottstown
PA 19465

Job Site

Instrument Manufacturer/Model No:
ENDRESS & HAUSER
53W

Instrument S/N:
9505CC1600

Instrument Loop:
EFFLUENT

Input Type:
MAGMETER

Primary Signal Producer:
MAG PRIMARY

Calibrated Range:
0-300 GPM

Instrument Settings:

Found

Zero	Span
0 GPM	300 GPM

Changed To

Zero	Span
NA	NA

Calibration Data

Input %	Input Value	Output Value	% Error After Calibration
0 %	0.00 GPM	4.00 MA	0.0000
50 %	150.00 GPM	12.00 MA	0.0000
100 %	300.00 GPM	20.00 MA	0.0000

Equipment Used: FIELDCHECK VERIFICATION

RECEIVED
NOV 15 2021
EAST COVENTRY TWP

Adjustments / Actions Taken: NONE

Comments:

Service Representative: Mike Sollazzo

Date: 10/24/2021

WO #: 4861

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Agreement to Provide Valuation Consulting Services Between

WAD Consultants

And

Pennsylvania America Water Company

For the Appraisal of the

East Conventry Township – Sewer System

DocuSign Envelope ID: D2D70F6F-A515-4FD7-84B7-9EFB4970813E

Agreement for Valuation Consulting Services

This Agreement for Valuation Consulting Services ("Agreement") is by and between Weinert Appraisal & 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 13, 2023. 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 water system assets currently owned by East Coventry Township. 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 February 13, 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 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 February 13, 2025 ("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 (WAD Consultants') offices in Greendale, Wisconsin.

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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	10,000	16,000	26,000	3,200
Initial Appraisal				
Pre-filed Direct testimony related to the above-described Valuation studies		3,000	3,000	250

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

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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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 disclosure, dissemination, or release shall be deemed a material breach of this Agreement.

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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. <u>Ownership of Paid-For Development, Use and Reservation of Rights:</u>

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.

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"**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. 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

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[$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 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)
414-529-5750 (fax)

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:

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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

Section 14. **Signatures:**

WAD Consultants (Supplier)

DocuSigned by:
Jerome C. Weinert
52D9D4D673CB44B...
Jerome C. Weinert
February 13, 2023
2/28/2023

Pennsylvania American Water Company

DocuSigned by:
Bernie Grundusky
30414BB93144451...
Bernard J. Grundusky
February 13, 2023
2/28/2023

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DocuSign

Certificate Of Completion

Envelope Id: D2D70F6FA5154FD784B79EFB4970813E
Status: Completed
Subject: Contract 48109 'SA WAD PAW East Coventry Engagement Letter ' requires your action
Source Envelope:
Document Pages: 10
Signatures: 2
Envelope Originator:
Certificate Pages: 5
Initials: 0
Mary Royer
AutoNav: Enabled
1 Water St
EnvelopeId Stamping: Enabled
Camden, NJ 08102
Time Zone: (UTC-05:00) Eastern Time (US & Canada)
Mary.Royer@amwater.com
IP Address: 54.236.3.38

Record Tracking

Status: Original
2/28/2023 10:03:01 AM
Holder: Mary Royer
Mary.Royer@amwater.com
Location: DocuSign

Signer Events	Signature	Timestamp
Jerome C. Weinert weinertj@auswest.net Principal and Director Security Level: Email, Account Authentication (None)	DocuSigned by: Jerome C. Weinert 52D9D4D673CB44B... Signature Adoption: Pre-selected Style Using IP Address: 67.53.186.2	Sent: 2/28/2023 10:08:45 AM Viewed: 2/28/2023 10:55:47 AM Signed: 2/28/2023 10:56:05 AM
Electronic Record and Signature Disclosure: Accepted: 5/31/2022 5:11:01 PM ID: 9e79ad26-6e7c-417a-aa54-26e3b84c4cad		
Bernie Grundusky Bernie.grundusky@amwater.com Senor Director - Business Development Security Level: Email, Account Authentication (None)	DocuSigned by: Bernie Grundusky 30414BB93144451... Signature Adoption: Pre-selected Style Using IP Address: 161.69.116.11	Sent: 2/28/2023 10:56:07 AM Viewed: 2/28/2023 1:16:42 PM Signed: 2/28/2023 1:16:55 PM
Electronic Record and Signature Disclosure: Accepted: 2/28/2023 1:16:42 PM ID: 5c25904b-53d5-4d10-9819-c94e40b3b4d0		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp
Scott Fogelsanger Scott.Fogelsanger@amwater.com Senior Manager - Business Development Security Level: Email, Account Authentication (None)	COPIED	Sent: 2/28/2023 1:16:57 PM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	2/28/2023 10:08:45 AM
Certified Delivered	Security Checked	2/28/2023 1:16:42 PM
Signing Complete	Security Checked	2/28/2023 1:16:55 PM
Completed	Security Checked	2/28/2023 1:16:57 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

Appendix A-5.1

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, American Water Works Service Company, Inc. (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

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Withdrawing your consent

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To contact us by email send messages to: bogdan.muresan@amwater.com

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To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at bogdan.muresan@amwater.com and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

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- Until or unless you notify American Water Works Service Company, Inc. as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by American Water Works Service Company, Inc. during the course of your relationship with American Water Works Service Company, Inc..

Application of Pennsylvania-American Water Company for Acquisition of the Wastewater Assets of East Coventry Township ("East Coventry")
66 Pa. C.S. §1329
Application Filing Checklist – Water/Wastewater

Docket No. A-2025-3053487

APPENDIX A-5.2

- LETTER FROM GANNETT FLEMING RE: SEPTEMBER 2025 REVISION
- FAIR MARKET VALUE APPRAISAL ON EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS BY GANNETT FLEMING

Gannett Fleming
Valuation and Rate Consultants, LLC

300 Sterling Parkway, Suite 200
Mechanicsburg, PA 17050
717.763.7211

September 8, 2025

Appendix A-5.2

Via email to ebriggs@eastcoventry-pa.gov

Eugene C. Briggs, AICP, CZO
Township Manager
East Coventry Township
855 Ellis Woods Road
Pottstown, PA 19465

Dear Mr. Briggs:

Fair Market Value Appraisal

In accordance with your request, we have reviewed the September 2025 revision to the "East Coventry Township Engineer's Assessment," original assessment dated April 2024, that was prepared by Carroll Engineering Corporation. The September 2025 revision reflects the removal of a one-foot section of 8-inch diameter force main, originally installed in 2004, from East Coventry Township's wastewater system assets inventory.

Based upon our review, we are of the opinion that the September 2025 revision to the East Coventry Township Engineer's Assessment does not alter our fair market value of the East Coventry Township's wastewater system assets, as of April 30, 2024.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC

HAROLD WALKER, III
Manager, Financial Studies

HW:mle

EAST COVENTRY TOWNSHIP
WASTEWATER SYSTEM ASSETS

FAIR MARKET VALUE APPRAISAL

AT

APRIL 30, 2024

Prepared by:

GANNETT FLEMING

GANNETT FLEMING

Gannett Fleming
Valuation and Rate Consultants, LLC

Corporate Headquarters
207 Senate Avenue
Camp Hill, PA 17011
P 717.763.7211 | **F** 717.763.8150

gannettfleming.com

July 31, 2024

Via email to ebriggs@eastcoventry-pa.gov

Eugene C. Briggs, AICP, CZO
Township Manager
East Coventry Township
855 Ellis Woods Road
Pottstown, PA 19465

Dear Mr. Briggs:

Fair Market Value Appraisal

In accordance with your request, we have prepared a fair market value appraisal of the East Coventry Township's wastewater system assets ("Wastewater System") consistent with the Engineer's Assessment's inventory date of April 30, 2024.

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, we are of the opinion that the fair market value of the Wastewater System is $15.4 million ($15,418,736 rounded), as of April 30, 2024.

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 opinion regarding the fair market value of the Wastewater System's assets of April 30, 2024. 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 below.

Valuation Approach	Indicated Value
Cost Approach	$19,209,967
Income Approach	17,221,801
Market Approach	9,824,441

We thank the East Coventry Township 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

HAROLD WALKER, III
Manager, Financial Studies

HW:mle

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INTRODUCTION

Introduction and Summary. The following narrative report presents our findings and opinion regarding the fair market value of the wastewater system assets of the East Coventry Township as of April 30, 2024. This report describes the valuation methodologies employed and the Exhibits that present the valuation results. Our conclusion of value is based upon the values indicated by the Cost, Income, and Market approaches to valuation. During our analysis we found measures of value that ranged from $9.8 million to $19.2 million. Based upon our analyses, we are of the opinion that the fair market value of the East Coventry Township's wastewater system assets is $15.4 million ($15,418,736 rounded), as of April 30, 2024.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by the East Coventry Township ("Township") to estimate the fair market value of the Township's wastewater system assets ("Wastewater System"), as of April 30, 2024, in compliance with the Uniform Standards of Professional Appraisal Practices ("USPAP"), considering the cost, market, and income approaches to valuation reflecting the Engineers Assessment's inventory.

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 USPAP, 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.

Standard and Premise of Value. The standard of value for this engagement is fair market value.[1] 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."[2]

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 running normally as a viable entity for the foreseeable future (i.e., not liquidated).

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. This subject is fee simple interest, is marketable but is not a liquid interest. The binding agreement governing this transaction is the asset purchase agreement.

Effective Date. The valuation date or effective date is the date on which the appraisal of the Wastewater System applies. The effective date is April 30, 2024.

Date of Report. The date of the report is the date on which the appraisal is transmitted to the client. The date of the report is July 31, 2024.

1 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 .
2 National Association of Certified Valuators and Analysts, s.v. "Fair Market Value," *The International Glossary of Business Valuation Terms*

Client and Users. The client is East Coventry Township. The intended users of the valuation are East Coventry Township, Pennsylvania American Water Company, Inc., and the Pennsylvania Public Utility Commission ("PUC").

Type of Property. The Wastewater System is a sanitary sewer collection and conveyance system that provides wastewater service in East Coventry Township in Chester County, Pennsylvania. The Wastewater System is a special purpose property.

Special Purpose Property. The Wastewater System is considered a special purpose property. Special purpose property is property that has limited use, is uniquely designed, or has other features that limit the property's use for purposes other than the one for which it was built and has no widespread market for the type of property. Examples of special purpose property include churches, schools, and public utilities.[3] Special purpose property often have special process-related equipment installed (e.g., filters, pumps, chemical systems, etc.) that cannot be removed without significantly altering the property's improvements. The function of the Wastewater System is the collection and conveyance of wastewater for customers in Chester County, Pennsylvania. The Wastewater System was specially built for the specific purposes for which it was designed and continues to be used for those purposes.

Highest and Best Use. The highest and best use for the Wastewater System is as a sanitary sewer collection and conveyance system. Since the property is specifically designed, configured, and constructed solely as a sanitary sewer collection and conveyance system, no alternate highest and best use was considered.

3 "Special-Purpose Property Law and Legal Definition," *USLegal, Inc.* Accessed 6/1/23. https://definitions.uslegal.com/s/special-purpose-property/#:~:text=This%20type%20of%20property%20has,for%20which%20it%20was%20built.

Market Participants. The market participants expected to be a buyer in a fair and open negotiation to purchase the Wastewater System are assumed to include large investor-owned utilities ("IOU") and larger regional municipal authorities ("MUNI") that are involved in owning and/or operating other water and/or wastewater systems.

Market Exposure. The time duration of market exposure for a sale, or asset purchase agreement, is estimated at one year.

Condition. Gannett Fleming relied on the engineering assessment of the Wastewater System's facilities report, "East Coventry Township Engineer's Assessment," dated April 2024, and related files prepared by Carroll Engineering Corporation, ("Engineering Assessment"), to confirm the condition of the Wastewater System's property and equipment. According to the Engineering Assessment, Carroll Engineering Corporation found the Wastewater System to be in excellent to good condition.

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 (i.e., 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. Additionally, the PUC requires the results of each valuation approach to be weighed evenly in reaching a conclusion of value unless good cause is given.

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 Township 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.

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 July 16, 2024. We also relied on Engineering Assessment of the Wastewater System 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:

"East Coventry Township Engineer's Assessment," dated April 2024, and related files prepared by Carroll Engineering Corporation;

Township provided electronic files (e.g., PDF and/or Excel);

Township's Audited Financials (2020-2023);

Township's Sewer Operations Budget (2021-2024);

Asset Purchase Agreement;

Wastewater System's Customer List;

Wastewater System's Maps;

Wastewater System's Fee Schedule;

Wastewater System's Act 537 Plan;

Wastewater System's 2022 Chapter 94 Report;

Township's Agreement with North Coventry Municipal Authority and North Coventry Township;

Blue Chip Financial Forecasts;

US Census Bureau, various data files;

Value Line Investment Survey; and

S&P Capital IQ.

Description of East Coventry Township. The Township is in northern Chester County, Pennsylvania. The Township The Township is bounded by the Schuylkill River and Montgomery

County to the north and the Townships of East Vincent, North Coventry and South Coventry to the south and west. The Township is the 37th largest land mass of Chester County's 73 municipalities and was the 33rd most populous with 6,752 people (2019) and 2,457 housing units (2018). The Township consists of 10.7 square miles and lies approximately 24 miles northwest of Philadelphia, Pennsylvania. According to U.S. Census figures, the Township's population grew 6.5% from 2010 to 2020, while population in Pennsylvania grew 2.4% and Chester County's population grew 7.1%.

Description of the Wastewater System. The Township owns and maintains the sanitary sewer collection and conveyance system within East Coventry Township under Water Quality Management Permit No. 1503417. The Wastewater System provides service to 830 customers, to a population of 2,945 people. The function of the Wastewater System is the collection and conveyance of wastewater for customers in Chester County, Pennsylvania. The Wastewater System assets consist of treatment capacity rights, five pump stations, about 15 miles of force, low-pressure, and gravity mains, approximately 290 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows are treated at the North Coventry Municipal Authority ("NCMA") 2.010 million gallons per day ("MGD") sewage treatment facility in North Coventry Township, Pennsylvania. The Wastewater System purchased 0.510 MGD of treatment capacity from NCMA in 2004. In 2022, the Wastewater System's average daily flow was 0.136 MGD (Exhibit 2) and has averaged 0.0131 MGD over the last five years (2018-2022).

The Wastewater System's five pump stations, Pump Station Nos. 1 through 5, were constructed in 2004 and 2008. Each the Wastewater System's pump stations have generators and have a total of 15,816 feet of 4 to 8-inch diameter force mains. The Wastewater System also has

2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains, which were installed in 2008, and 60,222 feet of 8 to 12-inch diameter polyvinyl chloride (PVC) and ductile iron pipe (DIP) gravity sewer mains. About 42% of the gravity mains were installed in 2004, 50% were installed between 2008 and 2011, and 7% were installed in from 2016 to 2017. There are 290 manholes and 853 service laterals in the system.

The Township utilizes an enterprise fund to account for the Wastewater System's operations. The Township's audited financial statements reflect the use of the modified cash basis of accounting, prescribed by the Pennsylvania Department of Community and Economic Development ("DCED"), provides limited information for the Wastewater System.[4] The modified cash basis of accounting uses elements of both the cash basis and accrual basis of accounting. The modified cash basis establishes a position part way between the cash and accrual methods. A modified cash basis is not allowed under Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).

The Township's annual budget reports provide more details on the Wastewater System's annual revenues and expenditures than the audited financial statements. Accordingly, we reviewed the Township's annual budget reports and audited financial statements for the Wastewater System for the years 2020 through 2023 and show those details on Exhibit 1. For the year ended December 31, 2023 (shown on Exhibit 1) the Wastewater System reported revenues of $0.841 million and expenses of $0.343 million. At the same point in time, on a modified cash basis, the Wastewater

4 See page 2 of the 2022 Independent Auditor's Report, "The financial statements are prepared on the modified cash basis of accounting within the format prescribed by the Department of Community and Economic Development of the Commonwealth of Pennsylvania, which is a basis of accounting other than accounting principles generally accepted in the United States of America. Consequently, revenues are recognized when received rather than when earned and expenditures are recognized when paid rather than when the liability is incurred. In addition, the Township does not include footnote disclosures. As a result, the financial statements may not be suitable for another purpose. Our opinion is not modified with respect to this matter."

System was capitalized with $3.115 million of fund equity and had no debt reported. At the same point in time, on a modified cash basis, the Wastewater System had total assets of $3.119 million, including no total net utility plant. The Township's annual budget reports and audited financial statements for the Wastewater System do not include deprecation charges. As stated, the Township's audited financial statements and annual budget reports provide limited information for the Wastewater System.

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 DCED versus Financial Accounting Standards Board ("FASB") method of accounting used by IOUs. 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.

As shown on Exhibit 2, the Wastewater System provides service directly to 830 customers (active), to approximately 1,115 Equivalent Dwelling Units ("EDU"), servicing a population of 2,945 people. The Wastewater System's EDUs are estimated to increase by 290 EDUs through 2027.

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, Chester County's population grew 7.1% and the Township's population grew 6.5% (Exhibit 3, Table 3.2). The Township's population growth was ranked 345 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 Delaware Valley Regional Planning Commission ("DVRPC") publishes population projections and employment projections for Willistown Township and the nine Delaware Valley counties ("Nine DVRPC Counties"). The DVRPC counties include Bucks County, Chester County, Delaware County, Montgomery County and Philadelphia County, in Pennsylvania, and Burlington County, Camden County, Gloucester County, and Mercer County, in New Jersey.

As shown on Page 2 of Exhibit 3, Table 3.3, the Township's population growth is projected to be more than 4-times the growth rate projected for the Nine DVRPC Counties during each five-year period from 2020 through 2050. The Township's project population growth places them in the upper 96 percent or 96th percentile of the 369 municipalities analyzed by DVRPC. Page 3 of Exhibit 3, Table 3.4 shows the Township's employment growth is projected to be about 2-times the growth rate projected growth rate projected for the Nine DVRPC Counties during each five-year period from 2020 through 2050. The Township's project employment growth places them in the upper 82 percent or 82nd percentile of the 369 municipalities analyzed by DVRPC.

Currently, there are approximately 7,182 people (Exhibit 2) in the Wastewater System's service area and 6,988 people in households. There are 2,611 occupied housing units in the

Wastewater System's service area, and the ratio of people to households is 2.68 persons per household. The Wastewater System's service area density is 3.5 people per customer based on an estimated service area population of 2,945 and 830 customers. The Wastewater System's service area density is similar to the 3.4 per customer density of water and water systems (see Table 2 in this report) indicating similar market penetration.

HISTORY AND NATURE OF THE BUSINESS

Economic Outlook. The valuation date (April 30, 2024) 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.

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 April 30, 2024. We focused on the forecasts and economic commentary presented in Blue Chip Financial Forecasts in the April 1, 2024, edition. Some of these economic forecasts are presented in Table 1.

Economic Indicators			
	Latest Qtr	Consensus Forecasts	
	1Q 2024	2Q 2024	3Q 2024
Key Assumptions			
Real GDP	2.0	1.6	1.4
GDP Price Index	2.2	2.4	2.3
Consumer Price Index	2.9	2.9	2.4
Interest Rates			
3-mo. Treasury Bills	5.45	5.3	4.9
10 Year Notes	4.16	4.1	4.0
30 Year Notes	4.33	4.3	4.2
Aaa Corporate Bond Yield	5.08	5.0	4.9
Baa Corporate Bond Yield	5.60	5.9	5.8
State & Local Bonds	4.11	4.2	4.2
Home Mortgage Rate	6.75	6.7	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 2,085 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 11,944 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 are either actively traded or inactively traded, as well as companies that are closely held, or not publicly traded. Currently (March 31, 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 CWA requirements[5] 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

5 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.

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 financial information; (2) inclusion in the S&P Capital IQ database; (3) a April 30, 2024 market value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than $350.0 million; (4) a April 30, 2024 total enterprise value (the sum of market value, preferred stock and total debt) greater than $500.0 million; (5) were not the subject of a known acquisition at April 30, 2024; (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.

Acquisition Date Size Statistics				
	Revenues (Mill. $)	Customers	Population	Customer Density
East Coventry Township Wastewater System Assets	$0.962	830	2,945	3.5
Comparable Group				
American States Water Co	$595.699	288,870	1,000,000	3.5
American Water Works Co Inc	4,234.000	3,486,000	14,000,000	4.0
Artesian Resources -CL A	98.861	106,640	325,740	3.1
California Water Service Gp	794.632	553,600	2,000,000	3.6
Essential Utilities, Inc.	2,053.824	1,857,461	5,500,000	3.0
Middlesex Water Co	166.274	125,300	500,000	4.0
SJW Corp	670.363	405,350	1,544,000	3.8
York Water Co	71.031	77,893	209,000	2.7
Median	$633.031	347,110	1,272,000	3.4

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 is 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 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, 2021 to 2022. 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. Consequently the results of the Wastewater System's historical financial performance shown in 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 2021-2023, the Wastewater System's financial benchmark ratios mostly show (Exhibit 4) higher investment risk than the Comparable Group based on coverage and cash flow.

Risk Analysis. 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. 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. However, 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 in 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 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 April 30, 2024, ranged from $359 million to $23,831 million as shown on Table 5.2 of Exhibit 5. Based on their market value, the Comparable Group's median market quartile was 3. Since the largest company in quartile 4 on Table 5.1 had a market value of $452 million, Wastewater System's market value would place it in quartile 4.

The change in risk adjusted common stock return rate between quartile 3 and quartile 4 (column J) is 1.11 percentage points (3.68%- 2.57%). The results of the illustration shown on Exhibit 5 suggest the Wastewater System's common equity cost rate could be about 1.11 percentage 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 in 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 74% of their gross property, plant and equipment remaining

undepreciated while 79% of the Comparable Group's gross property, plant and equipment remained undepreciated.[6]

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 15% (100% - 85%) 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.[7] This is evidenced by the 15% 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 2023.

6 The Wastewater System's gross and net property, plant and equipment is developed on Exhibit 7.
7 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.

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 expenditure required for business purposes is an indicator of risk. Over the last four years, the Comparable Group has had annual capital expenditures of about 9% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2020-23, net plant was not reported for the Wastewater System. Therefore, a comparison of capital expenditures cannot be made.

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 has been growing 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 EBIT and EBITDA profit margins are higher than the Comparable Group's, indicating less 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 Wastewater Systems) and conduct a fair market value appraisal of the Wastewater System's assets as of April 30, 2024, in compliance with the USPAP. There are three primary approaches to valuation including the cost, income, and market approaches. Each approach to valuation has its strengths and weaknesses and one may be more appropriate to use than another approach depending on the asset(s) being valued, the information available and/or the purpose of the valuation or intended use. USPAP requires consideration be given the cost, market and income approaches to valuation or an explanation for the basis of their exclusion, if any. 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.[8] 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.

Generally, the cost approach can be established using the trended original cost method, reproduction cost method, or replacement cost method after the calculated accrued depreciation (accumulated depreciation) is subtracted. The trended original cost method requires the determination of the original cost method.

The original cost method begins with establishing the original cost new ("OCN") measure

8 American Society of Appraisers, s.v. "Cost Approach," *ASA Business Valuation Standards,* 2009.

of the cost of the assets when first constructed.[9] 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.[10] 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.[11] 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.[12]

9 International Association of Assessing Officers, s.v. "Original Cost," *Glossary for Property Appraisal and Assessment*, Second Edition, 2013.
10 International Association of Assessing Officers, s.v. "Trended Original Cost," *Glossary for Property Appraisal and Assessment*, Second Edition, 2013.
11 American Society of Appraisers, s.v. "Reproduction Cost," *ASA Business Valuation Standards,* 2009.
12 American Society of Appraisers, s.v. "Replacement Cost," *ASA Business Valuation Standards,* 2009.

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 profit[13] are applied to the inventory listing in order to determine the RPCN and to determine the RCN.

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

13 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 10% to 20% of infrastructure asset total costs.

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 Township provided us a copy of the Engineering Assessment, the Wastewater System's 2022 Chapter 94 report, and the system's 537 Plan, to confirm the condition of the Wastewater System's property and equipment. We utilized the Engineering Assessment, calculated the Original Cost, and Related Accrued Depreciation of the Wastewater System as of April 30, 2024 ("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 April 30, 2024. 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 April 30, 2024, was not less than $11.8 million ($11,798,761 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of $3.1 million ($3,102,008 rounded) as of April 30, 2024. After factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Wastewater System's utility plant in service as of April 30, 2024, was determined to be $8.7 million ($11,798,761 - $3,102,008 = $8,696,753).

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 preliminary transition factors.[14] 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 April 30, 2024 ("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 April 30, 2024. 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 preliminary obsolescence factors.[15] A summarizing analysis of the replacement cost new of the

14 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.
15 See the Accrued Depreciation and Obsolescence section of this report for a further discussion.

Wastewater System by account and vintage year and related preliminary transition factors is shown on Exhibit 10.[16]

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 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 April 30, 2024, was not less than $26.4 million ($26,404,208 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of $7.2 million ($7,194,241 rounded) as of April 30, 2024. After factoring in the RCNLD Study's accrued depreciation reserve, the preliminary RCNLD of Wastewater System's utility plant in service as of April 30, 2024, was determined to be $19.2 million ($26,404,208 - $7,194,241 = $19,209,967).

The results of the OCNLD and preliminary RCNLD Cost Approaches show a range of value for the Wastewater System of $8.7 million to $19.2 million and collectively, indicated a preliminary value of $19.2 million ($19,209,967 rounded) for the Wastewater System based on the results of the preliminary RCNLD.

16 All land and land rights were valued at original cost.

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 1.35-times (Exhibit 18, page 2) their OCNLD or net property, plant and equipment. Similarly, the Comparable Group's Enterprise Value is currently 1.08-times (Exhibit 18, page 2) their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" may 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.[17] 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 1.56-times OCNLD and 1.25-times OCN for the Comparable Group.

Multiplying the Wastewater System's OCN of $11.8 million by the Comparable Group's 1.08-times OCN multiple or the 1.25-times contributions adjusted OCN multiple indicates a range of market value of $12.7 million to $14.8 million for the Wastewater System, dissimilar to the preliminary RCNLD of $19.2 million. Further, multiplying the Wastewater System's OCNLD of $8.7 million by the Comparable Group's 1.35-times OCNLD multiple or the 1.56-times

17 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.

contributions adjusted OCNLD multiple indicates a range of market value of $11.7 million to $13.6 million for the Wastewater System, dissimilar to the preliminary RCNLD of $19.2 million. Using a similar technique, we multiplied the Wastewater System's number of customers of 830 by the Comparable Group's $9,032-times customer multiple and produced a market value of $7.5 million, which is dissimilar to the preliminary RCNLD of $19.2 million.[18]

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."[19] FO is sometimes evident due to increased operating costs, increased maintenance costs, lost profits and for a wastewater utility, excess inflow and infiltration ("I&I"). Neither the Engineering Assessment nor the Wastewater System's Chapter 94 Report note excess I&I, capacity-related bypassing, SSOs or surcharging issues. Additionally, the Engineering Assessment did not find any assets that were no longer useful or functional. Therefore, we conclude no significant FO is suggested.

18 The range of benchmark metrics values suggested 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.

19 "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/

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 sufficient operating/level capacity, EO may be an issue."[20] To evaluate EO we compared our preliminary RCNLD value of $19.2 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 $26.4 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 $7.2 million to physical deterioration and found no functional obsolescence or economic obsolescence in reaching our $19.2 million RCNLD conclusion. The results of the RCNLD method of $19.2 million ($19,209,967 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 $19.2 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

20 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.

benefit that ownership will provide. The income approach is defined as, "a general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that convert anticipated economic benefits into a present single amount."[21]

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 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 flow. Generally, the DCF analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty 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 MUNI. For the Wastewater System, the appropriate discount rate is

21 American Society of Appraisers, s.v. "Income Approach," ASA Business Valuation Standards, 2009.

the current municipal revenue bond yield on April 30, 2024, of 4.39%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on April 30, 2024, and ranges from 8.72% to 11.43%.[22] 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 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, 4.39%, 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.[23] 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, 4.39%, at the valuation date is used in accordance with accepted valuation practices

22 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."

23 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).

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), 8.72% to 11.43% (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 31.3% debt and 68.6% equity, a market cost of debt of 5.92% and a range of market cost of equity of 10.76% to 14.71%.[24] The Comparable 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.[25]

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

24 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 .

25 We did not use the 6.94% 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 6.94% DSIC related cost was determined based the Comparable Group's book value capital structure of 50.3% debt and 49.6% equity, a cost of debt of 5.92% and a DSIC cost of equity of 9.65%. We note the 6.94% Comparable Group's DSIC related net of tax overall cost of capital falls below the 8.72% to 11.43% range of discount rates used in our Income Approach.

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. As noted previously, the Wastewater System's financial statements and their rates did not include taxes nor a fair rate of return. Accordingly, on Exhibits 13 through 16 we adjusted the Wastewater System's post-2024 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 2024) 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 April 30, 2024, of 4.39% (Exhibit 12, line 24) as the capitalization rate. We also did a second capitalization of earnings calculation based on a 4.29% capitalization rate (Exhibit 12, line 27), or 10-basis points

below the current level because we assumed the Wastewater System's Debt Free Net Cash Flow growth will be at least 0.1% (10-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 a range of growth in the capitalization of earnings method. Essentially, we considered a range of growth in the capitalization of earnings method, no growth and 0.1% growth. However, based upon our quantitative and qualitative analysis, and prospective rate increase, we believe the 0.1% growth scenario is reasonable for the Water System based on current ownership and operations.

For pro forma 2024, we adjusted the Wastewater System's Debt Free Net Cash Flow (Exhibit 12, lines 23 and 28) to include the average 2024-2028 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 4.39% capitalization rate (no growth) indicates a value of $8.6 million, and $8.6 million based on pro forma 2024 results. The capitalization of earnings method using a 4.29% capitalization rate (growth) indicates a value of $8.8 million, and $8.8 million based on pro forma 2024 results. Collectively, for Wastewater System, we believe the 0.1% growth scenario is the most probable result based on current ownership and operations and therefore, the capitalization of earnings method suggests a value of $8.8 million based on pro forma 2024 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 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 4.39% 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 8.72% to 11.43%. 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 0.1% (i.e., discount rate – 0.1% growth = capitalization rate) under MUNI ownership and 0.1% growth (i.e., discount rate – 0.1% 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 13.0-times and 19.2-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 $11.2 million to $11.3 million. The results of the Market Multiple DCF shown on

Exhibit 13 show a value of $10.7 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of $11.0 million for the Wastewater System based on the 0.1% 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 $6.2 million to $8.5 million. The results of the Market Multiple DCF shown on Exhibit 14 show a range of value of $7.8 million to $10.5 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.1% growth assumption indicates a value of $8.1 million for the Wastewater System.[26]

The DCF method based on the MUNI ownership scenario indicates a value of $11.0 million and the DCF method based on the IOU ownership scenario indicates a value of $8.1 million. Collectively, the DCF method indicates a value of $9.6 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 higher than the OCNLD value.

26 If we used the 6.94% 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 $11.0 million. Further, the results of the Market Multiple DCF would show a value of $13.1 million and collectively, the DCF method based on the IOU ownership scenario and a 0.1% growth assumption indicates a value of $12.1 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $11.0 million and the DCF method based on the IOU ownership scenario indicates a value of $12.1 million. Collectively, the DCF method indicates a value of $11.5 million when DSIC is considered.

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 value for the Wastewater System of $21.0 million to $21.3 million. The results of the Market Multiple DCF shown on Exhibit 15 show a value of $19.2 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of $20.2 million for the Wastewater System based on the 0.1% growth assumption.

Exhibit 16 shows the results of the DCF method under IOU ownership. The results of the Capitalization DCF shown on Exhibit 16 show a range of value for Wastewater System of $10.5 million to $14.9 million. The results of the Market Multiple DCF shown on Exhibit 16 show a range of value of $13.5 million to $18.8 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.1% growth assumption indicates a value of indicates a value of $14.2 million for the Wastewater System.[27]

The DCF method based on the MUNI ownership scenario indicates a value of $20.2 million and the DCF method based on the IOU ownership scenario indicates a value of $14.2 million. Collectively, the DCF method indicates a value of $17.2 million ($17,221,801 rounded) as summarized on Exhibit 17.

27 If we used the 6.94% 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 $19.7 million. Further, the results of the Market Multiple DCF would show a value of $23.7 million and collectively, the DCF method based on the IOU ownership scenario and a 0.1% growth assumption indicates a value of $21.8 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of $20.2 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of $21.8 million. Collectively, the DCF method indicates a value of $21.0 million when DSIC is considered.

The Market Approach. The market approach determines the value of an asset based on the recent selling price of similar assets. The market approach entails analyzing certain public information relating to transactions involving the purchase or sales of businesses involved in the same or similar business line as the subject entity (e.g., the Wastewater System). The market approach is defined as, "a general way of determining a value indication of a business, business ownership interest, security or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities or intangible assets that have been sold."[28] 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 purposes since they are equally affected by similar economic, industry, and business risks as is 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. Enterprise Value provides an

28 American Society of Appraisers, *ASA Business Valuation Standards,* theory 12.

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 April 30, 2024, based on the latest twelve months of financial data available at the appraisal date (Exhibit 18, page 2).

We used the Comparable Group's Enterprise Value on April 30, 2024, 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 ÷ 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.

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 applied 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); 93% of GPPE (more risk/lower growth and contributions); 93% of NPPE (more risk/lower growth and contributions); 80% of Revenue (more risk/lower growth); 80% of EBIT; 80% EBITDA (more risk/lower growth); 95% of Customers (growth, earning rate, and contributions); and 95% Population (growth, earning rate, and contributions). The calculation

of the net risk adjustments that are applied to the Comparable Group's Market Multiples are shown on page 3 of Exhibit 18.

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 fact that the dollars of Revenue, EBIT and EBITDA do not reflect any provision for taxes while the multiples for the Comparable Group do.[29] 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 (Exhibit 18, page 1) show a range of value for the Wastewater System of $7.2 million to $11.4 million and collectively, indicate value of $9.3 million ($9,286,582 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

29 The Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

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 (April 30, 2024). 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.

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.[30] 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 reflect 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 the 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.

The selected transactions method's multiples reflect the price or valuation at the time the winning purchase bid (price) was agreed to rather than the appraisal date's market value (April 30, 2024). The change in the Comparable Group's market multiples of GPPE, NPPE, Customers and Population, shown in Figure 1, illustrates the change in the Comparable Group's market valuation since 2016.

30 Further, Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

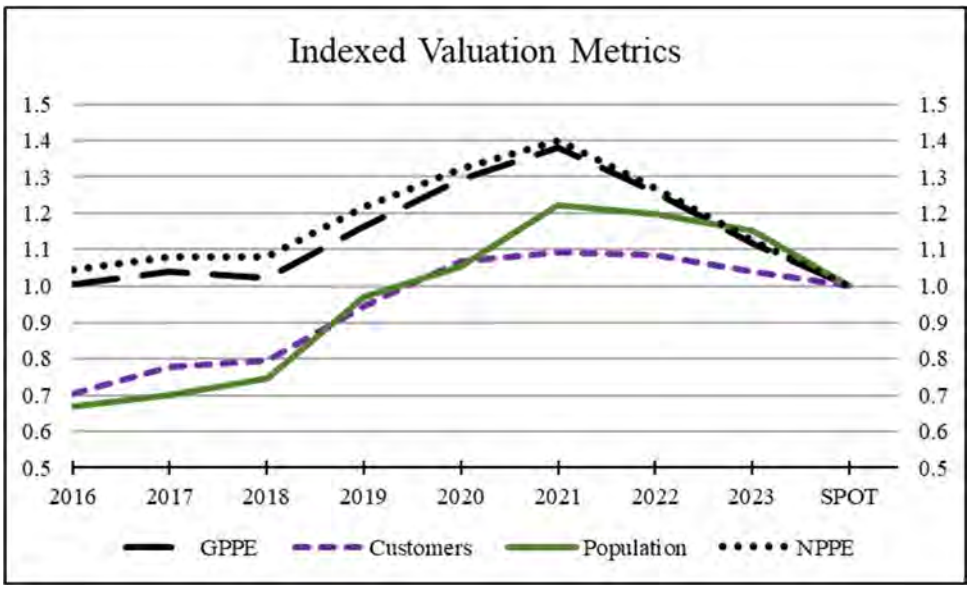

Figure 1

In Figure 1, the Comparable Group's market multiples of GPPE, NPPE, Customers and Population were indexed to the April 30, 2024 valuation multiples so that the April 30, 2024 valuation multiples have an index value of 1.0. In viewing the indexed market multiples shown in Figure 1 it is important to remember the selected transactions' multiples lag the Comparable Group's indexed market multiples and recognize the Comparable Group's Demographics Items have increased in value relative to their Asset Items since 2016.

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).

The results of the selected transactions method (Exhibit 19, page 1) show a range of value for the Wastewater System of $7.5 million to $17.7 million when all transactions are considered and a range of value of $5.3 million to $16.5 million when mostly collection/distribution transactions are solely considered. We determined an indicated value of $10.4 million

($10,362,300 rounded) for the Wastewater System using the selected transactions method by considering the results of all transactions, $12.6 million, and the results of the mostly collection/distribution transactions of $10.9 million after adjusting for the changes in market conditions that are depicted in Figure 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). 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 values 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 selling utilities (i.e., 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 $10.4 million when the reported significant selected

transactions multiples are considered and a value of $15.1 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 $8.0 million when the reported significant selected transactions multiples are considered and a value of $13.5 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 $11.8 million when the reported significant selected transactions multiples are considered and a value of $19.8 million when the reported significant selected transactions multiples have been adjusted for "cost free" capital. Collectively, the Wall Street selected transactions indicate values of $13.5 million to $19.8 million, are higher than the values found by the market multiples method of $9.3 million (Exhibit 18) and the selected transaction method of $10.4 million (Exhibit 19) for the Wastewater System.[31]

The Market Approach is summarized on Exhibit 21. The results of the market multiples method (Exhibit 18) indicate a value of $9.3 million. The results of the selected transactions method (Exhibit 19) indicate a value of $10.4 million. Based on the aforesaid results, the Market Approach to valuation indicates a value of $9.8 million ($9,824,441 rounded) for the Wastewater System based on the results of the market multiples method and the selected transactions method, as shown on Exhibit 21.

Conclusion. Each approach to valuation has its strengths and weaknesses and one may be more appropriate to use than another approach depending on the asset(s) being valued, the

31 We note Connecticut Water, NECS and TORW were fully integrated companies, which the Wastewater System is not. 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.

information available and/or the purpose of the valuation or intended use. USPAP requires consideration be given the Cost, Market and Income approaches to valuation or an explanation for the basis of their exclusion, if any. Consequently, three basic valuation approaches were considered in this analysis: the cost approach, the income approach, and the market approach.

We summarize our findings for the Wastewater System on Exhibit 22. Our fair market value conclusion and our opinion of the value of 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 opinion of the fair market value. The PUC requires the results of each valuation approach to be weighed evenly in reaching a conclusion of value unless good cause is given. Based on these facts, our opinion regarding the fair market value is $15.4 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, show a range of value of $9.8 million to $19.2 million and collectively support our opinion of a fair market value for the Wastewater System of $15,418,736, as of April 30, 2024.

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" (CRRA) 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 licensed Municipal Advisor Representative (Series 50) by the Municipal Securities Rulemaking Board (MSRB) and the 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 the past 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. He also previously served 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.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996 while employed at AUS Consultants - Utility Services. C.A. Turner Utility Reports is a financial publication which provides financial data and related ratios and forecasts covering the utility industry. From 1993 to 1994, he became a contributing author for the Fortnightly, a utility trade journal while employed at AUS Consultants - Utility Services. His column was the Financial News column and focused on the natural gas industry.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 27 states including: Alaska, 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

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024*

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 East Coventry Township. The intended users of the valuation are East Coventry Township, Pennsylvania American Water Company, Inc., and the Pennsylvania Public Utility Commission ("PUC").

- **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 East Coventry Township's wastewater system assets ("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.**

  East Coventry Township ("Township") is in northern Chester County, Pennsylvania. The Township The Township is bounded by the Schuylkill River and Montgomery County to the north and the Townships of East Vincent, North Coventry and South Coventry to the south and west.

  The Township owns and maintains the sanitary sewer collection and conveyance system within East Coventry Township under Water Quality Management Permit No. 1503417. The Wastewater System provides service to 830 customers, to a population of 2,945 people. The function of the Wastewater System is the collection and conveyance of wastewater for customers in Chester County, Pennsylvania. The Wastewater System assets consist of treatment capacity rights, five pump stations, about 15 miles of force, low-pressure, and gravity mains, approximately 290 manholes, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows are treated at the North Coventry Municipal Authority ("NCMA") 2.010 million gallons per day ("MGD") sewage treatment facility in North Coventry Township, Pennsylvania. The Wastewater System purchased 0.510 MGD of treatment capacity from NCMA in 2004. In 2022, the Wastewater System's average daily flow was 0.136 MGD (Exhibit 2) and has averaged 0.0131 MGD over the last five years (2018-2022).

  The Wastewater System's five pump stations, Pump Station Nos. 1 through 5, were constructed in 2004 and 2008. Each the Wastewater System's pump stations have generators and have a total of 15,816 feet of 4 to 8-inch diameter force mains. The Wastewater System also has 2,465 feet of 1.5 to 3-inch diameter low-pressure sewer mains, which were installed in 2008, and 60,222 feet of 8 to 12-inch diameter

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polyvinyl chloride (PVC) and ductile iron pipe (DIP) gravity sewer mains. About 42% of the gravity mains were installed in 2004, 50% were installed between 2008 and 2011, and 7% were installed in from 2016 to 2017. There are 290 manholes, 853 service laterals in the 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 plant assets include 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

- **State the effective date of the appraisal and the date of the report**

  The effective date of the appraisal is as of April 30, 2024, and the appraisal report date is July 31, 2024.

- **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 East Coventry Township ("Township") to estimate the fair market value of the Township's wastewater system assets ("Wastewater System"), as of April 30, 2024, in compliance with the Uniform Standards of Professional Appraisal Practices ("USPAP"), considering the cost, market, and income approaches to valuation reflecting the Engineers Assessment's inventory.

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Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024*

Fulfillment of Requirements for a Personal Property Appraisal and Report

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 Township 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.

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 Carroll Engineering Corporation 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.

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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 by the corresponding 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.

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Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024*

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **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. Data collection on this assignment involved requests for records of the Wastewater System, and site visit. The process utilized was confirming the valuation assignment, gathering the necessary information for the report activities, conducting, evaluating, and considering the cost approach, the income approach, and the market approach. Following the consideration of each distinct approach, Mr. Walker weighed the approaches utilizing his training, experience, and knowledge of the special purpose property market and the subject system. Following the reconciliation of the approaches, an Opinion of Value was determined and reported in the appraisal report.

- **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**

  The Wastewater System's land and land rights include land used for five pump stations, about 15 miles of force, low-pressure, and gravity mains, approximately 290 manholes, associated infrastructure and appurtenances and multiple easements and rights-of-way necessary to operate the Wastewater System.

  The Wastewater System's land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal.

- **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.

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Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2024*

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **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.

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APPRAISAL CERTIFICATION

Chester County, Pennsylvania

East Coventry Township

Wastewater System Assets

Fair Market Value Appraisal Report

As of April 30, 2024

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 has not performed an appraisal of the East Coventry Township's wastewater system assets prior to this current 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.

- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice (2024)

APPRAISAL CERTIFICATION

Chester County, Pennsylvania

East Coventry Township

Wastewater System Assets

Fair Market Value Appraisal Report

As of April 30, 2024

— The signers of this report relied upon Carroll Engineering Corporation, who inspected the property that is the subject of this report. The signers of this report also 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 Gannett Fleming Valuation and Rate Consultants, LLC.

Gannett Fleming Valuation and Rate Consultants, LLC

By,

HAROLD WALKER, III

Manager, Financial Studies

EXHIBITS

East Coventry Township Wastewater System Assets
Selected Audited Financial Information

	12-Months Ended December 31:			
	2020	2021	2022	2023
Gross property, plant & equipment	NA	NA	NA	NA
Accumulated depreciation	NA	NA	NA	NA
Net property, plant & equipment	NA	NA	NA	NA
Assets	2,306,134	2,523,691	3,094,917	3,119,662
Debt Current	NA	NA	NA	NA
Debt	NA	NA	NA	NA
Equity	2,233,681	2,382,725	3,090,802	3,115,547
Total Capital	2,233,681	2,382,725	3,090,802	3,115,547
OPERATING REVENUES				
Charges for services	756,700	816,362	825,694	828,919
Other operating income	17,092	4,030	3,270	11,635
TOTAL OPERATING REVENUES	773,792	820,392	828,964	840,554
Expenses	259,622	283,154	277,955	343,336
Depreciation	0	0	0	0
TOTAL OPERATING EXPENSES	259,622	283,154	277,955	343,336
CAPX	7,395	65,000	35,646	1,833
Interest	173,573	168,173	162,573	147,500
Principal	270,000	280,000	285,000	345,000

Source of Information: Budget/DCED Financial Statements (2020-2024)

East Coventry Township Wastewater System Assets
Population, Housing Units, Customer Count, EDUs and Flows

	Total
Population in Houses (2023)	6,988
Occupied Housing Units (2023)	2,611
Average Size	2.68

Population to Customers	3.5
Total Customers (2023)	830
Total EDUs (2023)	1,115

Projected EDU *

	2023	2024	2025	2026	2027
New EDU	81	77	5	122	5

* - Excludes Parker-Ford related EDUs.

Annual Daily Average Sewage Flow (MGD)

	2018	2019	2020	2021	2022
Flows	0.131	0.124	0.131	0.135	0.136

Population and Housing Units (2023)

	Total Population	Population in Households	Occupied Housing Units	Persons Per Housing Unit	Estimated Population Served
East Coventry	7,182	6,988	2,611	2.68	2,945
Total	7,182	6,988	2,611	2.68	2,945

TABLE 3.1 US Population Census Counts, 2010 & 2020

State	Population 2010	Population 2020	Percentage 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: U.S. Census Bureau, Population Division

TABLE 3.2 Pennsylvania Population Census by County and Municipality, 2010 & 2020

Geographic Area	Population 2010	Population 2020	Percentage Change	Municipal Growth Rank
Pennsylvania	12,702,379	13,002,700	2.4%	-
Chester County	498,886	534,413	7.1%	-
East Coventry Township	6,636	7,068	6.5%	345 out of 2,572
System Total	6,636	7,068	6.5%	345 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, 2020-2050

	Population							Percentage Change						
	Estimate 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	Forecast 2050	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2045 to 2050	2020 to 2050
Bucks County	629,040	635,768	641,786	646,930	651,113	654,442	657,131	1.1%	0.9%	0.8%	0.6%	0.5%	0.4%	4.5%
Chester County	528,218	563,468	586,300	604,007	620,391	634,119	645,673	6.7%	4.1%	3.0%	2.7%	2.2%	1.8%	22.2%
Delaware County	566,610	570,207	573,667	576,903	579,706	581,763	583,376	0.6%	0.6%	0.6%	0.5%	0.4%	0.3%	3.0%
Montgomery County	833,914	852,415	868,662	883,800	896,576	907,942	917,924	2.2%	1.9%	1.7%	1.4%	1.3%	1.1%	10.1%
Philadelphia County	1,590,161	1,627,244	1,650,559	1,658,977	1,665,398	1,670,261	1,680,798	2.3%	1.4%	0.5%	0.4%	0.3%	0.6%	5.7%
Subtotal - Five Pennsylvania Counties	4,147,943	4,249,102	4,320,974	4,370,617	4,413,184	4,448,527	4,484,902	2.4%	1.7%	1.1%	1.0%	0.8%	0.8%	8.1%
Burlington County	447,971	463,830	471,001	474,401	476,962	477,540	477,884	3.5%	1.5%	0.7%	0.5%	0.1%	0.1%	6.7%
Camden County	507,378	512,630	512,790	515,571	518,525	519,127	519,476	1.0%	0.0%	0.5%	0.6%	0.1%	0.1%	2.4%
Gloucester County	291,710	295,192	298,495	307,003	312,710	321,140	327,608	1.2%	1.1%	2.9%	1.9%	2.7%	2.0%	12.3%
Mercer County	367,925	378,112	392,070	394,244	395,881	396,202	396,462	2.8%	3.7%	0.6%	0.4%	0.1%	0.1%	7.8%
Subtotal - Four New Jersey Counties	1,614,984	1,649,764	1,674,356	1,691,219	1,704,078	1,714,009	1,721,430	2.2%	1.5%	1.0%	0.8%	0.6%	0.4%	6.6%
Total - Nine DVRPC Counties	5,762,927	5,898,866	5,995,330	6,061,836	6,117,262	6,162,536	6,206,332	2.4%	1.6%	1.1%	0.9%	0.7%	0.7%	7.7%
East Coventry Township	6,785	7,001	7,538	8,053	8,489	8,860	9,147	3.2%	7.7%	6.8%	5.4%	4.4%	3.2%	34.8%
System Total	6,785	7,001	7,538	8,053	8,489	8,860	9,147	3.2%	7.7%	6.8%	5.4%	4.4%	3.2%	34.8%

Source: Delaware Valley Regional Planning Commission, January 2023.

TABLE 3.4 Forecasted Employment by County and Municipality, 2020-2050

	Employment							Percentage Change						
	Estimate 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	Forecast 2050	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2045 to 2050	2020 to 2050
Bucks County	308,713	326,700	332,639	335,324	338,108	341,149	343,632	5.8%	1.8%	0.8%	0.8%	0.9%	0.7%	11.3%
Chester County	298,305	336,321	345,083	351,403	358,837	366,724	373,664	12.7%	2.6%	1.8%	2.1%	2.2%	1.9%	25.3%
Delaware County	262,851	279,772	283,398	285,407	288,280	291,175	293,526	6.4%	1.3%	0.7%	1.0%	1.0%	0.8%	11.7%
Montgomery County	559,413	601,014	610,266	616,333	625,549	635,373	643,790	7.4%	1.5%	1.0%	1.5%	1.6%	1.3%	15.1%
Philadelphia County	804,345	839,480	857,981	872,566	882,135	889,907	904,311	4.4%	2.2%	1.7%	1.1%	0.9%	1.6%	12.4%
Subtotal - Five Pennsylvania Counties	2,233,627	2,383,287	2,429,367	2,461,033	2,492,909	2,524,328	2,558,923	6.7%	1.9%	1.3%	1.3%	1.3%	1.4%	14.6%
Burlington County	241,044	259,622	263,784	265,316	267,490	269,911	272,016	7.7%	1.6%	0.6%	0.8%	0.9%	0.8%	12.8%
Camden County	231,475	251,236	254,730	256,495	258,893	261,276	263,284	8.5%	1.4%	0.7%	0.9%	0.9%	0.8%	13.7%
Gloucester County	123,027	138,978	142,306	144,046	146,652	149,362	151,891	13.0%	2.4%	1.2%	1.8%	1.8%	1.7%	23.5%
Mercer County	230,526	246,875	249,634	251,430	254,122	256,973	259,402	7.1%	1.1%	0.7%	1.1%	1.1%	0.9%	12.5%
Subtotal - Four New Jersey Counties	826,072	896,711	910,454	917,287	927,157	937,522	946,593	8.6%	1.5%	0.8%	1.1%	1.1%	1.0%	14.6%
Total - Nine DVRPC Counties	3,059,699	3,279,998	3,339,821	3,378,320	3,420,066	3,461,850	3,505,516	7.2%	1.8%	1.2%	1.2%	1.2%	1.3%	14.6%
East Coventry Township	1,596	1,852	1,903	1,942	2,005	2,048	2,075	16.0%	2.8%	2.0%	3.2%	2.1%	1.3%	30.0%
System Total	1,596	1,852	1,903	1,942	2,005	2,048	2,075	16.0%	2.8%	2.0%	3.2%	2.1%	1.3%	30.0%

Source: Delaware Valley Regional Planning Commission, January 2023. Base employment data from the National Establishments Time Series (NETS) database, 2016–2019.

Comparison of Credit Market Financial Risk Metrics
For East Coventry Township Wastewater System Assets
And the Comparable Group
2021 - 2023 (1)

	System Assets			Comparable Group		
	2023	2022	2021	2023	2022	2021
Debt Service Coverage	1.0	1.2	1.2	3.2	4.1	2.3
Pre-Tax Interest Coverage - Including AFC(2)(x)	3.4	3.4	3.2	3.5	3.6	4.4
Post-Tax Interest Coverage - Including AFC(2)(x)	3.4	3.4	3.2	3.0	3.1	3.7
GCF / Interest Coverage(3)(x)	3.4	3.4	3.2	4.7	5.1	5.9
GCF / Tot. Debt(4)(%)	#NA	#NA	#NA	14.1	16.2	18.2
GCF / Construction(5)(%)	19,079.0	1,089.7	567.8	61.9	68.2	73.2

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: 2021-23 Annual Reports
S&P Capital IQ
EXHIBIT 1

East Coventry Township Wastewater System Assets
Illustrating the Impact of Size on Risk and Retun
Through Common Stock Returns

TABLE 5.1 Change in Return and Risk for Size-Quartiles Portfolio of the NYSE/AMEX/NASDAQ Common Stocks (1)

	A	B	C	D	E	F	G	H	I	J
									Beta Adjusted	
Market Quartile	Market Quartile Name	Average Quartile Premium 1926-20 (%)	Standard Deviation of Return (%)	Change in Quartile Premium (%)	Largest Market Value in the Quartile (Mill $)	Quartile Beta	Comparison Group Beta	Beta Ratio	Quartile Size Premium (%)	Change in Quartile Premium (%)
(Largest Stocks)										
1	Large-Cap	0.00	19.9	--	1,966,079	1.00	0.80	80%	0.00	
2	Mid-Cap	2.48	24.3	2.48	13,179	1.13	0.80	71%	1.76	1.76
3	Low-Cap	3.95	28.5	1.47	2,446	1.23	0.80	65%	2.57	0.81
4	Mico-Cap	6.21	38.5	2.26	452	1.35	0.80	59%	3.68	1.11
(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

	4/30/2024 Market Value (Mill $)	Market Quartile Name	Market Quartile
Comparable Group			
American States Water Co	2,637	Mid-Cap	2
American Water Works Co Inc	23,831	Large-Cap	1
Artesian Resources -Cl A	359	Mico-Cap	4
California Water Service Gp	2,837	Mid-Cap	2
Essential Utilities, Inc.	10,005	Mid-Cap	2
Middlesex Water Co	904	Low-Cap	3
SJW Corp	1,755	Low-Cap	3
York Water Co	509	Low-Cap	3
Median	2,196	Low-Cap	3

East Coventry Township 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 $)		
East Coventry Township Wastewater System Assets *	$11.799	$8.697	74%
Comparable Group			
American States Water Co	$2,532.952	$1,908.480	75%
American Water Works Co Inc	32,275.000	25,524.000	79%
Artesian Resources -CL A	904.705	718.483	79%
California Water Service Gp	4,905.949	3,765.909	77%
Essential Utilities, Inc.	15,014.437	12,134.488	81%
Middlesex Water Co	1,252.689	1,013.049	81%
SJW Corp	4,129.656	3,168.753	77%
York Water Co	612.887	495.273	81%
Median			79%

* - Developed on Exhibit 7.

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 12/31/2023)

	Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	2023 Percentage of Known "Cost Free" Capital
	(Millions of $)			
Comparable Group				
American States Water Co	$1,908.480	$1,693.992	89%	20%
American Water Works Co Inc	25,524.000	22,252.000	87%	13%
Artesian Resources -CL A	718.483	411.460	57%	43%
California Water Service Gp	3,765.909	2,677.319	71%	22%
Essential Utilities, Inc.	12,134.488	13,004.949	107%	20%
Middlesex Water Co	1,013.049	837.381	83%	23%
SJW Corp	3,168.753	2,980.571	94%	22%
York Water Co	495.273	401.817	81%	25%
Median			85%	22%

East Coventry Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.3 Capital Expenditures Analysis

	PP&E-Total Net (Millions of $)				Capital Expenditures (Millions of $)			
	2023	2022	2021	2020	2023	2022	2021	2020
East Coventry Township Wastewater System Assets	NA	NA	NA	NA	$0.002	$0.036	$0.065	$0.007
Comparable Group								
American States Water Co	$1,908.480	$1,772.106	$1,676.718	$1,557.936	$188.540	$166.240	$144.515	$130.423
American Water Works Co Inc	25,524.000	23,305.000	21,176.000	19,805.000	2,575.000	2,297.000	1,764.000	1,822.000
Artesian Resources -CL A	718.483	672.238	594.633	563.817	62.177	48.483	40.814	34.277
California Water Service Gp	3,765.909	3,470.882	2,849.059	2,654.027	386.563	335.523	293.194	298.651
Essential Utilities, Inc.	12,134.488	11,172.680	10,300.796	9,573.211	1,199.103	1,062.763	1,020.519	835.642
Middlesex Water Co	1,013.049	935.584	881.299	813.014	90.179	91.335	79.378	105.619
SJW Corp	3,168.753	2,654.825	2,518.530	2,356.988	271.772	218.784	233.933	195.323
York Water Co	495.273	431.901	383.626	344.365	65.265	53.920	46.400	33.299

	Capital Expenditures / PP&E-Total Net			
	2023	2022	2021	2020
East Coventry Township Wastewater System Assets	NA	NA	NA	NA
Comparable Group				
American States Water Co	10%	9%	9%	8%
American Water Works Co Inc	10%	10%	8%	9%
Artesian Resources -CL A	9%	7%	7%	6%
California Water Service Gp	10%	10%	10%	11%
Essential Utilities, Inc.	10%	10%	10%	9%
Middlesex Water Co	9%	10%	9%	13%
SJW Corp	9%	8%	9%	8%
York Water Co	13%	12%	12%	10%
Median	10%	10%	9%	9%

East Coventry Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

	Revenues				EBITDA			
	2023	2022	2021	2020	2023	2022	2021	2020
	(Millions of $)				(Millions of $)			
East Coventry Township Wastewater System Assets	$0.841	$0.829	$0.820	$0.774	$0.497	$0.551	$0.537	$0.514
Comparable Group								
American States Water Co	$595.699	$491.528	$498.853	$488.243	$241.422	$175.850	$185.064	$171.044
American Water Works Co Inc	4,234.000	3,792.000	3,930.000	3,777.000	1,306.476	1,154.957	1,102.741	917.849
Artesian Resources -CL A	98.861	98.897	90.859	88.141	433.284	387.423	380.137	340.460
California Water Service Gp	794.632	846.431	790.909	794.307	30.401	25.800	26.382	25.061
Essential Utilities, Inc.	2,053.824	2,288.032	1,878.144	1,462.698	147.867	140.577	127.710	122.709
Middlesex Water Co	166.274	162.434	143.141	141.592	38.056	33.947	35.841	28.720
SJW Corp	670.363	620.698	573.686	564.526	86.302	83.532	68.003	63.335
York Water Co	71.031	60.061	55.119	53.852	25.743	24.780	24.359	21.800

	EBIT			
	2023	2022	2021	2020
	(Millions of $)			
East Coventry Township Wastewater System Assets	$0.497	$0.551	$0.537	$0.514
Comparable Group				
American States Water Co	$198.168	$134.153	$145.090	$133.840
American Water Works Co Inc	1,536.000	1,350.000	1,274.000	1,297.000
Artesian Resources -CL A	28.794	29.784	28.031	27.979
California Water Service Gp	82.135	145.352	139.248	143.065
Essential Utilities, Inc.	695.880	669.275	610.400	459.298
Middlesex Water Co	41.825	46.648	35.241	37.699
SJW Corp	148.205	129.804	107.206	117.296
York Water Co	28.449	23.208	22.182	23.069

East Coventry Township 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		
	2023	2022	2021	2023	2022	2021
East Coventry Township Wastewater System Assets	1.4%	1.1%	5.9%	-9.8%	2.6%	4.5%
Comparable Group						
American States Water Co	21.2%	-1.5%	2.2%	37.3%	-5.0%	8.2%
American Water Works Co Inc	11.7%	-3.5%	4.1%	13.1%	4.7%	20.1%
Artesian Resources -CL A	0.0%	8.8%	3.1%	11.8%	1.9%	11.7%
California Water Service Gp	-6.1%	7.0%	-0.4%	17.8%	-2.2%	5.3%
Essential Utilities, Inc.	-10.2%	21.8%	28.4%	5.2%	10.1%	4.1%
Middlesex Water Co	2.4%	13.5%	1.1%	12.1%	-5.3%	24.8%
SJW Corp	8.0%	8.2%	1.6%	3.3%	22.8%	7.4%
York Water Co	18.3%	9.0%	2.4%	3.9%	1.7%	11.7%
Median	5.2%	8.5%	2.3%	12.0%	1.8%	10.0%

	EBIT Growth		
	2023	2022	2021
East Coventry Township Wastewater System Assets	-9.8%	2.6%	4.5%
Comparable Group			
American States Water Co	47.7%	-7.5%	8.4%
American Water Works Co Inc	13.8%	6.0%	-1.8%
Artesian Resources -CL A	-3.3%	6.3%	0.2%
California Water Service Gp	-43.5%	4.4%	-2.7%
Essential Utilities, Inc.	4.0%	9.6%	32.9%
Middlesex Water Co	-10.3%	32.4%	-6.5%
SJW Corp	14.2%	21.1%	-8.6%
York Water Co	22.6%	4.6%	-3.8%
Median	8.9%	6.2%	-2.3%

East Coventry Township 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		
	2023	2022	2021
East Coventry Township Wastewater System Assets	59.1%	66.5%	65.5%
Comparable Group			
American States Water Co	40.5%	35.8%	37.1%
American Water Works Co Inc	30.9%	30.5%	28.1%
Artesian Resources -CL A	438.3%	391.7%	418.4%
California Water Service Gp	3.8%	3.0%	3.3%
Essential Utilities, Inc.	7.2%	6.1%	6.8%
Middlesex Water Co	22.9%	20.9%	25.0%
SJW Corp	12.9%	13.5%	11.9%
York Water Co	36.2%	41.3%	44.2%
Median	26.9%	25.7%	26.5%

	EBIT / Revenue - Margin		
	2023	2022	2021
East Coventry Township Wastewater System Assets	59.1%	66.5%	65.5%
Comparable Group			
American States Water Co	33.3%	27.3%	29.1%
American Water Works Co Inc	36.3%	35.6%	32.4%
Artesian Resources -CL A	29.1%	30.1%	30.9%
California Water Service Gp	10.3%	17.2%	17.6%
Essential Utilities, Inc.	33.9%	29.3%	32.5%
Middlesex Water Co	25.2%	28.7%	24.6%
SJW Corp	22.1%	20.9%	18.7%
York Water Co	40.1%	38.6%	40.2%
Median	31.2%	29.0%	30.0%

Source: S&P Capital IQ
EXHIBIT 1

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.00	LAND AND LAND RIGHTS	12.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	795,310.00	238,521
354.40	WASTEWATER CAPACITY RIGHTS	2,353,000.00	653,781
355.00	POWER GENERATION EQUIPMENT	145,578.00	79,088
360.10	FORCE MAINS	609,828.00	153,634
360.20	PRESSURE MAINS	75,467.00	16,905
361.10	GRAVITY MAINS	4,954,414.07	1,137,556
361.20	MANHOLES	764,192.40	192,570
363.00	SERVICES TO CUSTOMERS	863,915.50	202,285
364.00	FLOW MEASURING DEVICES	37,733.00	21,137
371.00	PUMPING EQUIPMENT	350,687.00	125,981
380.00	TREATMENT AND DISPOSAL EQUIPMENT	173,066.00	56,824
389.00	PLANT AND MISC EQUIPMENT	675,558.50	223,726
	TOTAL COMPANY	**11,798,761.47**	**3,102,008**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF ORIGINAL COST
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	ORIGINAL COST
(1)	(2)	(3)
353.00	LAND AND LAND RIGHTS	12.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	795,310.00
354.40	WASTEWATER CAPACITY RIGHTS	2,353,000.00
355.00	POWER GENERATION EQUIPMENT	145,578.00
360.10	FORCE MAINS	609,828.00
360.20	PRESSURE MAINS	75,467.00
361.10	GRAVITY MAINS	4,954,414.07
361.20	MANHOLES	764,192.40
363.00	SERVICES TO CUSTOMERS	863,915.50
364.00	FLOW MEASURING DEVICES	37,733.00
371.00	PUMPING EQUIPMENT	350,687.00
380.00	TREATMENT AND DISPOSAL EQUIPMENT	173,066.00
389.00	PLANT AND MISC EQUIPMENT	675,558.50
	TOTAL COMPANY	**11,798,761.47**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED DEPRECIATION RELATED TO ORIGINAL COST AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	12.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	60-R3	795,310.00	238,521
354.40	WASTEWATER CAPACITY RIGHTS	65-R2.5	2,353,000.00	653,781
355.00	POWER GENERATION EQUIPMENT	30-S2	145,578.00	79,088
360.10	FORCE MAINS	70-R2.5	609,828.00	153,634
360.20	PRESSURE MAINS	65-R2.5	75,467.00	16,905
361.10	GRAVITY MAINS	65-R2.5	4,954,414.07	1,137,556
361.20	MANHOLES	60-R3	764,192.40	192,570
363.00	SERVICES TO CUSTOMERS	55-R2.5	863,915.50	202,285
364.00	FLOW MEASURING DEVICES	30-L3	37,733.00	21,137
371.00	PUMPING EQUIPMENT	40-R1.5	350,687.00	125,981
380.00	TREATMENT AND DISPOSAL EQUIPMENT	45-S0.5	173,066.00	56,824
389.00	PLANT AND MISC EQUIPMENT	45-S0.5	675,558.50	223,726
	TOTAL COMPANY		**11,798,761.47**	**3,102,008**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST NEW AND ORIGINAL COST NEW LESS DEPRECIATION
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

	DESCRIPTION (1)		ORIGINAL COST (2)
1.	ORIGINAL COST NEW	$	11,798,761
2.	LESS: ACCRUED DEPRECIATION	–	3,102,008
3.	**OCNLD**	**$**	**8,696,753**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.00 LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
2004	1.00						
2006	1.00						
2007	8.00						
2019	2.00						
	12.00						

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2004	600,781.00	60.00	1.67	10,033.04	41.11	0.3148	189,144
2008	194,529.00	60.00	1.67	3,248.63	44.77	0.2538	49,377
	795,310.00			13,281.67			238,521

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.40 WASTEWATER CAPACITY RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2004	2,353,000.00	65.00	1.54	36,236.20	46.94	0.2779	653,781
	2,353,000.00			36,236.20			653,781

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

	ORIGINAL	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-S2							
NET SALVAGE PERCENT.. 0							
2004	91,090.00	30.00	3.33	3,033.30	12.68	0.5773	52,589
2008	54,488.00	30.00	3.33	1,814.45	15.41	0.4863	26,499
	145,578.00			4,847.75			79,088

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.10 FORCE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
2004	524,564.00	70.00	1.43	7,501.27	51.87	0.2590	135,862
2008	85,264.00	70.00	1.43	1,219.28	55.41	0.2084	17,772
	609,828.00			8,720.55			153,634

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.20 PRESSURE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2008	75,467.00	65.00	1.54	1,162.19	50.44	0.2240	16,905
	75,467.00			1,162.19			16,905

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2004	1,301,566.10	65.00	1.54	20,044.12	46.94	0.2779	361,640
2008	2,974,197.97	65.00	1.54	45,802.65	50.44	0.2240	666,220
2011	491,660.00	65.00	1.54	7,571.56	53.13	0.1826	89,787
2016	106,670.00	65.00	1.54	1,642.72	57.68	0.1126	12,013
2017	80,320.00	65.00	1.54	1,236.93	58.61	0.0983	7,896
	4,954,414.07			76,297.98			1,137,556

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.20 MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2004	251,527.40	60.00	1.67	4,200.51	41.11	0.3148	79,188
2008	313,631.00	60.00	1.67	5,237.64	44.77	0.2538	79,609
2011	114,034.00	60.00	1.67	1,904.37	47.58	0.2070	23,605
2016	44,000.00	60.00	1.67	734.80	52.36	0.1273	5,603
2017	41,000.00	60.00	1.67	684.70	53.32	0.1113	4,565
	764,192.40			12,762.02			192,570

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.00 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 55-R2.5							
NET SALVAGE PERCENT.. 0							
2004	85,315.00	55.00	1.82	1,552.73	37.10	0.3255	27,766
2008	355,500.50	55.00	1.82	6,470.11	40.54	0.2629	93,465
2011	321,100.00	55.00	1.82	5,844.02	43.18	0.2149	69,008
2016	12,800.00	55.00	1.82	232.96	47.70	0.1327	1,699
2017	89,200.00	55.00	1.82	1,623.44	48.62	0.1160	10,347
	863,915.50			15,723.26			202,285

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-L3							
NET SALVAGE PERCENT.. 0							
2004	25,997.00	30.00	3.33	865.70	12.33	0.5890	15,312
2008	11,736.00	30.00	3.33	390.81	15.11	0.4963	5,825
	37,733.00			1,256.51			21,137

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 40-R1.5							
NET SALVAGE PERCENT.. 0							
2004	250,094.00	40.00	2.50	6,252.35	24.81	0.3798	94,973
2008	100,593.00	40.00	2.50	2,514.82	27.67	0.3083	31,008
	350,687.00			8,767.17			125,981

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 380.00 TREATMENT AND DISPOSAL EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

	ORIGINAL	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 45-S0.5							
NET SALVAGE PERCENT.. 0							
2004	106,004.00	45.00	2.22	2,353.29	29.19	0.3513	37,242
2008	67,062.00	45.00	2.22	1,488.78	31.86	0.2920	19,582
	173,066.00			3,842.07			56,824

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 389.00 PLANT AND MISC EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT APRIL 30, 2024

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 45-S0.5							
NET SALVAGE PERCENT.. 0							
2004	446,034.00	45.00	2.22	9,901.95	29.19	0.3513	156,705
2008	229,524.50	45.00	2.22	5,095.44	31.86	0.2920	67,021
	675,558.50			14,997.39			223,726

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.00	LAND AND LAND RIGHTS	12.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1,742,107.43	526,985
354.40	WASTEWATER CAPACITY RIGHTS	5,443,757.72	1,512,548
355.00	POWER GENERATION EQUIPMENT	478,760.18	261,573
360.10	FORCE MAINS	1,583,555.75	401,598
360.20	PRESSURE MAINS	149,522.20	33,493
361.10	GRAVITY MAINS	10,571,717.44	2,487,032
361.20	MANHOLES	1,634,086.08	429,208
363.00	SERVICES TO CUSTOMERS	1,423,387.09	342,864
364.00	FLOW MEASURING DEVICES	168,675.12	96,218
371.00	PUMPING EQUIPMENT	1,167,890.34	421,994
380.00	TREATMENT AND DISPOSAL EQUIPMENT	412,693.42	136,797
389.00	PLANT AND MISC EQUIPMENT	1,628,043.29	543,931
	TOTAL COMPANY	**26,404,208.06**	**7,194,241**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF REPLACEMENT COST
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	REPLACEMENT COST
(1)	(2)	(3)
353.00	LAND AND LAND RIGHTS	12.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	1,742,107.43
354.40	WASTEWATER CAPACITY RIGHTS	5,443,757.72
355.00	POWER GENERATION EQUIPMENT	478,760.18
360.10	FORCE MAINS	1,583,555.75
360.20	PRESSURE MAINS	149,522.20
361.10	GRAVITY MAINS	10,571,717.44
361.20	MANHOLES	1,634,086.08
363.00	SERVICES TO CUSTOMERS	1,423,387.09
364.00	FLOW MEASURING DEVICES	168,675.12
371.00	PUMPING EQUIPMENT	1,167,890.34
380.00	TREATMENT AND DISPOSAL EQUIPMENT	412,693.42
389.00	PLANT AND MISC EQUIPMENT	1,628,043.29
	TOTAL COMPANY	**26,404,208.06**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED DEPRECIATION RELATED TO REPLACEMENT COST AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	12.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	60-R3	1,742,107.43	526,985
354.40	WASTEWATER CAPACITY RIGHTS	65-R2.5	5,443,757.72	1,512,548
355.00	POWER GENERATION EQUIPMENT	30-S2	478,760.18	261,573
360.10	FORCE MAINS	70-R2.5	1,583,555.75	401,598
360.20	PRESSURE MAINS	65-R2.5	149,522.20	33,493
361.10	GRAVITY MAINS	65-R2.5	10,571,717.44	2,487,032
361.20	MANHOLES	60-R3	1,634,086.08	429,208
363.00	SERVICES TO CUSTOMERS	55-R2.5	1,423,387.09	342,864
364.00	FLOW MEASURING DEVICES	30-L3	168,675.12	96,218
371.00	PUMPING EQUIPMENT	40-R1.5	1,167,890.34	421,994
380.00	TREATMENT AND DISPOSAL EQUIPMENT	45-S0.5	412,693.42	136,797
389.00	PLANT AND MISC EQUIPMENT	45-S0.5	1,628,043.29	543,931
	TOTAL COMPANY		**26,404,208.06**	**7,194,241**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST NEW AND REPLACEMENT COST NEW LESS DEPRECIATION OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

	DESCRIPTION		REPLACEMENT COST
	(1)		(2)
1.	REPLACEMENT COST NEW		$ 26,404,208
2.	LESS: ACCRUED DEPRECIATION	-	7,194,241
3.	PRELIMINARY RCNLD		$ 19,209,967
4.	**CONCLUSION RCNLD**		**$ 19,209,967**

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF APRIL 30, 2024

ACCOUNT	DESCRIPTION	VINTAGE YEAR	BASE COST	TRANSITION FACTOR	FACTOR REFERENCE	REPLACEMENT COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
353.00	LAND AND LAND RIGHTS	2004	1.00	1.00000	(1)	1.00
353.00	LAND AND LAND RIGHTS	2006	1.00	1.00000	(1)	1.00
353.00	LAND AND LAND RIGHTS	2007	8.00	1.00000	(1)	8.00
353.00	LAND AND LAND RIGHTS	2019	2.00	1.00000	(1)	2.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2004	600,781.00	2.31354	(2)	1,389,930.39
354.30	STRUCTURES AND IMPROVEMENTS - PUMPING	2008	194,529.00	1.81041	(2)	352,177.04
354.40	WASTEWATER CAPACITY RIGHTS	2004	2,353,000.00	2.31354	(2)	5,443,757.72
355.00	POWER GENERATION EQUIPMENT	2004	91,090.00	3.46678	(3)	315,789.28
355.00	POWER GENERATION EQUIPMENT	2008	54,488.00	2.99095	(3)	162,970.90
360.10	FORCE MAINS	2004	524,564.00	2.69676	(4)	1,414,622.82
360.10	FORCE MAINS	2008	85,264.00	1.98129	(4)	168,932.93
360.20	PRESSURE MAINS	2008	75,467.00	1.98129	(4)	149,522.20
361.10	GRAVITY MAINS	2004	1,301,566.10	2.69676	(4)	3,510,010.43
361.10	GRAVITY MAINS	2008	2,974,197.97	1.98129	(4)	5,892,756.18
361.10	GRAVITY MAINS	2011	491,660.00	1.79784	(4)	883,925.77
361.10	GRAVITY MAINS	2016	106,670.00	1.54305	(4)	164,596.75
361.10	GRAVITY MAINS	2017	80,320.00	1.49936	(4)	120,428.31
361.20	MANHOLES	2004	251,527.40	2.69676	(4)	678,308.84
361.20	MANHOLES	2008	313,631.00	1.98129	(4)	621,394.75
361.20	MANHOLES	2011	114,034.00	1.79784	(4)	205,014.83
361.20	MANHOLES	2016	44,000.00	1.54305	(4)	67,894.04
361.20	MANHOLES	2017	41,000.00	1.49936	(4)	61,473.62
363.00	SERVICES TO CUSTOMERS	2004	85,315.00	2.25515	(5)	192,398.52
363.00	SERVICES TO CUSTOMERS	2008	355,500.50	1.70233	(5)	605,180.81
363.00	SERVICES TO CUSTOMERS	2011	321,100.00	1.51910	(5)	487,782.12
363.00	SERVICES TO CUSTOMERS	2016	12,800.00	1.40224	(5)	17,948.72
363.00	SERVICES TO CUSTOMERS	2017	89,200.00	1.34615	(5)	120,076.92
364.00	FLOW MEASURING DEVICES	2004	25,997.00	5.18841	(6)	134,882.99
364.00	FLOW MEASURING DEVICES	2008	11,736.00	2.87936	(6)	33,792.13
371.00	PUMPING EQUIPMENT	2004	250,094.00	3.46678	(3)	867,021.68
371.00	PUMPING EQUIPMENT	2008	100,593.00	2.99095	(3)	300,868.66
380.00	TREATMENT AND DISPOSAL EQUIPMENT	2004	106,004.00	2.59013	(7)	274,564.01
380.00	TREATMENT AND DISPOSAL EQUIPMENT	2008	67,062.00	2.05973	(7)	138,129.41
389.00	PLANT AND MISC EQUIPMENT	2004	446,034.00	2.59013	(7)	1,155,285.49
389.00	PLANT AND MISC EQUIPMENT	2008	229,524.50	2.05973	(7)	472,757.80
	TOTAL COMPANY		**11,798,761.47**			**26,404,208.06**

NOTES : (1) Not trended
(2) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 8
(3) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 9
(4) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 34
(5) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 39
(6) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 40
(7) Handy-Whitman Index of Public Utility Costs, 1/1/24, Cost Trends of Water Utility Construction, North Atlantic Region, Line 16

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.00 LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
NONDEPRECIABLE							
2004	1.00						
2006	1.00						
2007	8.00						
2019	2.00						
	12.00						

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPING

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

	REPLACEMENT	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2004	1,389,930.39	60.00	1.67	23,211.84	41.11	0.3148	437,592
2008	352,177.04	60.00	1.67	5,881.36	44.77	0.2538	89,393
	1,742,107.43			29,093.20			526,985

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.40 WASTEWATER CAPACITY RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2004	5,443,757.72	65.00	1.54	83,833.87	46.94	0.2779	1,512,548
	5,443,757.72			83,833.87			1,512,548

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

	REPLACEMENT	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-S2							
NET SALVAGE PERCENT.. 0							
2004	315,789.28	30.00	3.33	10,515.78	12.68	0.5773	182,315
2008	162,970.90	30.00	3.33	5,426.93	15.41	0.4863	79,258
	478,760.18			15,942.71			261,573

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.10 FORCE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 70-R2.5							
NET SALVAGE PERCENT.. 0							
2004	1,414,622.82	70.00	1.43	20,229.11	51.87	0.2590	366,387
2008	168,932.93	70.00	1.43	2,415.74	55.41	0.2084	35,211
	1,583,555.75			22,644.85			401,598

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 360.20 PRESSURE MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2008	149,522.20	65.00	1.54	2,302.64	50.44	0.2240	33,493
	149,522.20			2,302.64			33,493

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.10 GRAVITY MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 65-R2.5							
NET SALVAGE PERCENT.. 0							
2004	3,510,010.43	65.00	1.54	54,054.16	46.94	0.2779	975,256
2008	5,892,756.18	65.00	1.54	90,748.45	50.44	0.2240	1,319,977
2011	883,925.77	65.00	1.54	13,612.46	53.13	0.1826	161,423
2016	164,596.75	65.00	1.54	2,534.79	57.68	0.1126	18,537
2017	120,428.31	65.00	1.54	1,854.60	58.61	0.0983	11,839
	10,571,717.44			162,804.46			2,487,032

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.20 MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
2004	678,308.84	60.00	1.67	11,327.76	41.11	0.3148	213,552
2008	621,394.75	60.00	1.67	10,377.29	44.77	0.2538	157,729
2011	205,014.83	60.00	1.67	3,423.75	47.58	0.2070	42,438
2016	67,894.04	60.00	1.67	1,133.83	52.36	0.1273	8,645
2017	61,473.62	60.00	1.67	1,026.61	53.32	0.1113	6,844
	1,634,086.08			27,289.24			429,208

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.00 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

	REPLACEMENT	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 55-R2.5							
NET SALVAGE PERCENT.. 0							
2004	192,398.52	55.00	1.82	3,501.65	37.10	0.3255	62,616
2008	605,180.81	55.00	1.82	11,014.29	40.54	0.2629	159,108
2011	487,782.12	55.00	1.82	8,877.63	43.18	0.2149	104,829
2016	17,948.72	55.00	1.82	326.67	47.70	0.1327	2,382
2017	120,076.92	55.00	1.82	2,185.40	48.62	0.1160	13,929
	1,423,387.09			25,905.64			342,864

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 364.00 FLOW MEASURING DEVICES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

	REPLACEMENT	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 30-L3							
NET SALVAGE PERCENT.. 0							
2004	134,882.99	30.00	3.33	4,491.60	12.33	0.5890	79,446
2008	33,792.13	30.00	3.33	1,125.28	15.11	0.4963	16,772
	168,675.12			5,616.88			96,218

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 371.00 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 40-R1.5							
NET SALVAGE PERCENT.. 0							
2004	867,021.68	40.00	2.50	21,675.54	24.81	0.3798	329,251
2008	300,868.66	40.00	2.50	7,521.72	27.67	0.3083	92,743
	1,167,890.34			29,197.26			421,994

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 380.00 TREATMENT AND DISPOSAL EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

	REPLACEMENT	AVG.	--ANNUAL ACCRUAL--			--ACCRUED DEPREC.--	
YEAR	COST	LIFE	RATE	AMOUNT	EXP.	FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 45-S0.5							
NET SALVAGE PERCENT.. 0							
2004	274,564.01	45.00	2.22	6,095.32	29.19	0.3513	96,463
2008	138,129.41	45.00	2.22	3,066.47	31.86	0.2920	40,334
	412,693.42			9,161.79			136,797

EAST COVENTRY TOWNSHIP
EAST COVENTRY TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 389.00 PLANT AND MISC EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT APRIL 30, 2024

YEAR	REPLACEMENT COST	AVG. LIFE	--ANNUAL ACCRUAL-- RATE	AMOUNT	EXP.	--ACCRUED DEPREC.-- FACTOR	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 45-S0.5							
NET SALVAGE PERCENT.. 0							
2004	1,155,285.49	45.00	2.22	25,647.34	29.19	0.3513	405,886
2008	472,757.80	45.00	2.22	10,495.22	31.86	0.2920	138,045
	1,628,043.29			36,142.56			543,931

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

		Actual			Budget
					Year 0
		2021	2022	2023	2024
1.	**OPERATING REVENUES (1)**				
2.	Charges for services	816,362	825,694	828,919	906,500
3.	Other operating revenue	4,030	3,270	11,635	55,210
4.	Tap Fees	0	0	0	0
5.	**Total Operating Revenues**	820,392	828,964	840,554	961,710
6.	**Rate Increase**				
7.	**OPERATING EXPENSES (1)**				
8.	Operating & Maintenance Expenses	283,154	277,955	343,336	377,957
9.	**Operating Expenses Before Depreciation**	283,154	277,955	343,336	377,957
10.	Depreciation (2)	0	0	0	0
11.	**Total Operating Expenses**	283,154	277,955	343,336	377,957
12.	**Operating Income**	537,238	551,009	497,218	583,753
13.	Revenues (3)	820,392	828,964	840,554	961,710
14.	EBITDA (4)	537,238	551,009	497,218	583,753
15.	EBIT (5)	537,238	551,009	497,218	583,753
16.	EBIT	537,238	551,009	497,218	583,753
17.	(-) Income Taxes	0	0	0	0
18.	Debt Free Net Income	537,238	551,009	497,218	583,753
19.	(+) Depreciation & Amortization	0	0	0	0
20.	(-) Capital Expenditures (6)	65,000	35,646	1,833	197,895
21.	(-) Changes in Working Capital (7)	8,286	8,373	8,490	9,713
22.	Debt Free Net Cash Flow	$463,952	$506,990	$486,895	$376,144

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma Operations
Earnings Capitalization Model

		2024	Pro Forma 2024 (11)
		4.39% Capitalization Rate Model (No Growth)	4.39% Capitalization Rate Model (No Growth)
23.	Debt Free Net Cash Flow (10)	$376,144	$376,826
24.	Capitalization Factor: (8)	4.39%	4.39%
25.	Indicated Value (line 23 ÷ line 24)	$8,568,211	$8,583,741
		4.29% Capitalization Rate Model (0.10% Growth)	4.29% Capitalization Rate Model (0.10% Growth)
26.	Debt Free Net Cash Flow (10)	$376,144	$376,826
27.	Capitalization Factor: (9)	4.29%	4.29%
28.	Indicated Value (line 26 ÷ line 27)	$8,767,937	$8,783,828

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma Operations
DCF With Capitalization of Terminal Value Model and
Earnings Capitalization Model

Notes: (1) Assumptions:

Charges for services -Pre-2024 are actual. 2024 results are based on 2024 budget. Post-2024 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 2025 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2024 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2024 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2024 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

(2) Depreciation - Pre-2024 based on actual depreciation. Post-2023 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-2025 based on financials/budget. Post-2024 years are estimates based on 1.65% of prior year-end GROSS Property, plant and equipment.
(7) Changes in Working Capital - based on water industry 1.01% of revenues.
(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 equal to discount rate, where capitalization rate = K - g.
(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 adjusted for stated growth (g) where capitalization rate = K - g.
(10) Final year shown, line 22.
(11) Final year shown, line 22.
(12) Final year shown, line 22.
(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

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

		Actual			Budget	Estimated	Estimated
					Year 0	Year 1	Year 2
		2021	2022	2023	2024	2025	2026
1.	**OPERATING REVENUES (1)**						
2.	Charges for services	816,362	825,694	828,919	906,500	908,684	958,258
3.	Other operating revenue	4,030	3,270	11,635	55,210	55,210	55,210
4.	Tap Fees	0	0	0	0	0	0
5.	Other (Rate Increase)	0	0	0	0	0	0
6.	**Total Operating Revenues**	820,392	828,964	840,554	961,710	963,894	1,013,468
7.	**Rate Increase**						
8.	**OPERATING EXPENSES (1)**						
9.	Operating & Maintenance Expenses	283,154	277,955	343,336	377,957	387,406	397,091
10.	Remove Economies of Scale						
11.	LESS: EOS - Wages & Benefits	0	0	0	(13,099)	(13,427)	(13,762)
12.	LESS: EOS - Professional Services	0	0	0	(46,650)	(47,816)	(49,012)
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**	283,154	277,955	343,336	318,208	326,163	334,317
16.	Depreciation (2)	0	0	0	0	199,362	202,152
17.	**Total Operating Expenses**	283,154	277,955	343,336	318,208	525,525	536,469
18.	**Operating Income**	537,238	551,009	497,218	643,502	438,369	476,999
19.	Revenues (3)	820,392	828,964	840,554	961,710	963,894	1,013,468
20.	EBITDA (4)	537,238	551,009	497,218	643,502	637,731	679,151
21.	EBIT (5)	537,238	551,009	497,218	643,502	438,369	476,999
22.	EBIT	537,238	551,009	497,218	643,502	438,369	476,999
23.	(-) Income Taxes	0	0	0	0	0	0
24.	Debt Free Net Income	537,238	551,009	497,218	643,502	438,369	476,999
25.	(+) Depreciation & Amortization	0	0	0	0	199,362	202,152
26.	(-) Capital Expenditures (6)	65,000	35,646	1,833	197,895	194,255	196,973
27.	(-) Changes in Working Capital (7)	8,286	8,373	8,490	9,713	9,735	10,236
28.	Debt Free Net Cash Flow	$463,952	$506,990	$486,895	$435,894	$433,740	$471,942
29.	PV Time Period (mid-year)				(0.5)	0.5	1.5
						1	2
30.	Present Value Factor: 4.39% (8)					0.9787	0.9376
31.	Present Value Debt Free Net Cash Flow					$424,502	$442,492
						1	2
32.	Present Value Factor: 4.29% (9)					0.9792	0.9389
33.	Present Value Debt Free Net Cash Flow					$424,719	$443,106

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2027	2028	2029	2030	2031	2032
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,010,012	1,017,094	1,027,107	1,037,378	1,047,752	1,058,229
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	1,065,222	1,072,304	1,082,317	1,092,588	1,102,962	1,113,439
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	407,019	417,194	427,624	438,315	449,272	460,504
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,106)	(14,459)	(14,820)	(15,191)	(15,571)	(15,960)
12. LESS: EOS - Professional Services	(50,237)	(51,493)	(52,780)	(54,100)	(55,452)	(56,838)
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**	342,675	351,242	360,023	369,024	378,250	387,706
16. Depreciation (2)	204,981	207,849	210,758	213,707	216,698	219,730
17. **Total Operating Expenses**	547,656	559,091	570,781	582,731	594,948	607,436
18. **Operating Income**	517,566	513,213	511,536	509,857	508,014	506,003
19. Revenues (3)	1,065,222	1,072,304	1,082,317	1,092,588	1,102,962	1,113,439
20. EBITDA (4)	722,547	721,062	722,294	723,564	724,712	725,733
21. EBIT (5)	517,566	513,213	511,536	509,857	508,014	506,003
22. EBIT	517,566	513,213	511,536	509,857	508,014	506,003
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	517,566	513,213	511,536	509,857	508,014	506,003
25. (+) Depreciation & Amortization	204,981	207,849	210,758	213,707	216,698	219,730
26. (-) Capital Expenditures (6)	199,730	202,525	205,359	208,233	211,147	214,102
27. (-) Changes in Working Capital (7)	10,759	10,830	10,931	11,035	11,140	11,246
28. Debt Free Net Cash Flow	$512,058	$507,706	$506,003	$504,296	$502,426	$500,386
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: 4.39% (8)	0.8982	0.8604	0.8242	0.7895	0.7563	0.7245
31. Present Value Debt Free Net Cash Flow	$459,930	$436,831	$417,048	$398,142	$379,984	$362,529
	3	4	5	6	7	8
32. Present Value Factor: 4.29% (9)	0.9003	0.8633	0.8278	0.7937	0.7611	0.7298
33. Present Value Debt Free Net Cash Flow	$461,006	$438,303	$418,870	$400,260	$382,396	$365,181

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2033	2034	2035	2036	2037	2038
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,068,812	1,079,500	1,090,295	1,101,198	1,112,210	1,123,332
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. **Total Operating Revenues**	1,124,022	1,134,710	1,145,505	1,156,408	1,167,420	1,178,542
7. **Rate Increase**						
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	472,017	483,817	495,913	508,310	521,018	534,044
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(16,359)	(16,768)	(17,187)	(17,617)	(18,057)	(18,509)
12. LESS: EOS - Professional Services	(58,259)	(59,716)	(61,209)	(62,739)	(64,308)	(65,915)
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**	397,398	407,333	417,517	427,955	438,653	449,620
16. Depreciation (2)	222,806	225,923	229,085	232,291	235,542	238,838
17. **Total Operating Expenses**	620,204	633,257	646,602	660,245	674,195	688,458
18. **Operating Income**	503,818	501,453	498,903	496,163	493,225	490,084
19. Revenues (3)	1,124,022	1,134,710	1,145,505	1,156,408	1,167,420	1,178,542
20. EBITDA (4)	726,624	727,377	727,988	728,453	728,767	728,922
21. EBIT (5)	503,818	501,453	498,903	496,163	493,225	490,084
22. EBIT	503,818	501,453	498,903	496,163	493,225	490,084
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	503,818	501,453	498,903	496,163	493,225	490,084
25. (+) Depreciation & Amortization	222,806	225,923	229,085	232,291	235,542	238,838
26. (-) Capital Expenditures (6)	217,098	220,136	223,217	226,341	229,508	232,720
27. (-) Changes in Working Capital (7)	11,353	11,461	11,570	11,680	11,791	11,903
28. Debt Free Net Cash Flow	$498,173	$495,780	$493,202	$490,433	$487,468	$484,299
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: 4.39% (8)	0.6941	0.6649	0.6369	0.6101	0.5845	0.5599
31. Present Value Debt Free Net Cash Flow	$345,782	$329,644	$314,120	$299,213	$284,925	$271,159
	9	10	11	12	13	14
32. Present Value Factor: 4.29% (9)	0.6997	0.6710	0.6434	0.6169	0.5915	0.5672
33. Present Value Debt Free Net Cash Flow	$348,572	$332,668	$317,326	$302,548	$288,337	$274,694

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2039	2040	2041	2042	2043	2044
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,134,565	1,145,911	1,157,370	1,168,944	1,186,536	1,198,402
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	5,845	0	9,587
6. **Total Operating Revenues**	1,189,775	1,201,121	1,212,580	1,229,999	1,241,746	1,263,199
7. **Rate Increase**				**1%**		**1%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	547,395	561,080	575,107	589,484	604,221	619,327
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(18,971)	(19,446)	(19,932)	(20,430)	(20,941)	(21,464)
12. LESS: EOS - Professional Services	(67,563)	(69,252)	(70,983)	(72,758)	(74,577)	(76,441)
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**	460,860	472,382	484,191	496,296	508,704	521,421
16. Depreciation (2)	242,180	245,570	249,006	252,491	256,025	259,607
17. **Total Operating Expenses**	703,040	717,951	733,197	748,787	764,728	781,028
18. **Operating Income**	486,735	483,170	479,383	481,212	477,018	482,171
19. Revenues (3)	1,189,775	1,201,121	1,212,580	1,229,999	1,241,746	1,263,199
20. EBITDA (4)	728,915	728,739	728,389	733,703	733,042	741,778
21. EBIT (5)	486,735	483,170	479,383	481,212	477,018	482,171
22. EBIT	486,735	483,170	479,383	481,212	477,018	482,171
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	486,735	483,170	479,383	481,212	477,018	482,171
25. (+) Depreciation & Amortization	242,180	245,570	249,006	252,491	256,025	259,607
26. (-) Capital Expenditures (6)	235,977	239,279	242,628	246,023	249,466	252,957
27. (-) Changes in Working Capital (7)	12,017	12,131	12,247	12,423	12,542	12,758
28. Debt Free Net Cash Flow	$480,921	$477,329	$473,514	$475,257	$471,035	$476,063
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: 4.39% (8)	0.5363	0.5138	0.4922	0.4715	0.4517	0.4327
31. Present Value Debt Free Net Cash Flow	$257,918	$245,252	$233,063	$224,084	$212,766	$205,992
	15	16	17	18	19	20
32. Present Value Factor: 4.29% (9)	0.5439	0.5215	0.5000	0.4795	0.4597	0.4408
33. Present Value Debt Free Net Cash Flow	$261,573	$248,927	$236,757	$227,886	$216,535	$209,848

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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 @ 4.39%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$476,063
Divided by Capitalization Factor (8)	4.39%
20th Year Terminal Value	10,844,250
20th Year Present Value Factor (11)	0.4327
Present Value of Terminal Value	4,692,307
Present Value Debt Free Net Cash Flow for 20 Years	6,545,377
Indicated Value	$11,237,683

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.39%		Multiples (13)	Terminal Value
Projected EBIT	$482,171	19.2	$9,257,676
Projected EBITDA	741,778	13.0	9,643,112
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			9,515,918
20th Year Present Value Factor (11)			0.4327
Present Value of Terminal Value			4,117,538
Present Value Debt Free Net Cash Flow for 20 Years			6,545,377
Indicated Value			$10,662,914

DCF With Capitalization of Terminal Value Model @ 4.29%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$476,063
Divided by Capitalization Factor (9)	4.29%
20th Year Terminal Value	11,097,030
20th Year Present Value Factor (12)	0.4327
Present Value of Terminal Value	4,801,685
Present Value Debt Free Net Cash Flow for 20 Years	6,545,377
Indicated Value	$11,347,061

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.29%		Multiples (13)	Terminal Value
Projected EBIT	$482,171	19.2	$9,257,676
Projected EBITDA	741,778	13.0	9,643,112
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			9,515,918
20th Year Present Value Factor (12)			0.4327
Present Value of Terminal Value			4,117,538
Present Value Debt Free Net Cash Flow for 20 Years			6,545,377
Indicated Value			$10,662,914

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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-2024 are actual. 2024 results are based on 2024 budget. Post-2024 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 2025 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2024 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2024 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2024 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

(2) Depreciation - Pre-2024 based on actual depreciation. Post-2023 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-2025 based on financials/budget. Post-2024 years are estimates based on 1.65% of prior year-end GROSS Property, plant and equipment.
(7) Changes in Working Capital - based on water industry 1.01% of revenues.
(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 equal to discount rate, where capitalization rate = K - g.
(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 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

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

		Actual			Budget	Estimated	Estimated
					Year 0	Year 1	Year 2
		2021	2022	2023	2024	2025	2026
1.	**OPERATING REVENUES (1)**						
2.	Charges for services	816,362	825,694	828,919	906,500	908,684	958,258
3.	Other operating revenue	4,030	3,270	11,635	55,210	55,210	55,210
4.	Tap Fees	0	0	0	0	0	0
5.	Other (Rate Increase)	0	0	0	0	0	239,565
6.	**Total Operating Revenues**	820,392	828,964	840,554	961,710	963,894	1,253,033
7.	**Rate Increase**						**25%**
8.	**OPERATING EXPENSES (1)**						
9.	Operating & Maintenance Expenses	283,154	277,955	343,336	377,957	387,406	397,091
10.	Remove Economies of Scale						
11.	LESS: EOS - Wages & Benefits	0	0	0	(13,099)	(13,427)	(13,762)
12.	LESS: EOS - Professional Services	0	0	0	(46,650)	(47,816)	(49,012)
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	17,926	17,931
16.	**Operating Expenses Before Depreciation**	283,154	277,955	343,336	318,208	344,089	352,248
17.	Depreciation (2)	0	0	0	0	199,362	202,152
18.	**Total Operating Expenses**	283,154	277,955	343,336	318,208	543,451	554,400
19.	**Operating Income**	537,238	551,009	497,218	643,502	420,443	698,633
20.	Revenues (3)	820,392	828,964	840,554	961,710	963,894	1,253,033
21.	EBITDA (4)	537,238	551,009	497,218	643,502	619,805	900,785
22.	EBIT (5)	537,238	551,009	497,218	643,502	420,443	698,633
23.	EBIT	537,238	551,009	497,218	643,502	420,443	698,633
24.	(-) Income Taxes	0	0	0	178,296	114,832	188,052
25.	Debt Free Net Income	537,238	551,009	497,218	465,206	305,611	510,581
26.	(+) Depreciation & Amortization	0	0	0	0	199,362	202,152
27.	(-) Capital Expenditures (6)	65,000	35,646	1,833	197,895	194,255	196,973
28.	(-) Changes in Working Capital (7)	8,286	8,373	8,490	9,713	9,735	12,656
29.	Debt Free Net Cash Flow	$463,952	$506,990	$486,895	$257,598	$300,982	$503,104
30.	PV Time Period (mid-year)				(0.5)	0.5	1.5
31.	Present Value Factor: 8.72% (8)					0.9591	0.8821
32.	Present Value Debt Free Net Cash Flow					$288,672	$443,788
						1	2
33.	Present Value Factor: 11.43% (9)					0.9473	0.8502
34.	Present Value Debt Free Net Cash Flow					$285,121	$427,739
						1	2
35.	Present Value Factor: 8.62% (8)					0.9595	0.8834
36.	Present Value Debt Free Net Cash Flow					$288,793	$444,442
						1	2
37.	Present Value Factor: 11.33% (9)					0.9478	0.8513
38.	Present Value Debt Free Net Cash Flow					$285,271	$428,292

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2027	2028	2029	2030	2031	2032
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,262,515	1,271,368	1,283,884	1,426,395	1,440,659	1,455,066
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	128,388	0	0	145,507
6. **Total Operating Revenues**	1,317,725	1,326,578	1,467,482	1,481,605	1,495,869	1,655,783
7. **Rate Increase**			**10%**			**10%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	407,019	417,194	427,624	438,315	449,272	460,504
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,106)	(14,459)	(14,820)	(15,191)	(15,571)	(15,960)
12. LESS: EOS - Professional Services	(50,237)	(51,493)	(52,780)	(54,100)	(55,452)	(56,838)
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	19,569	19,930	19,972	20,766	20,838	20,911
16. **Operating Expenses Before Depreciation**	362,244	371,172	379,995	389,790	399,088	408,617
17. Depreciation (2)	204,981	207,849	210,758	213,707	216,698	219,730
18. **Total Operating Expenses**	567,225	579,021	590,753	603,497	615,786	628,347
19. **Operating Income**	750,500	747,557	876,729	878,108	880,083	1,027,436
20. Revenues (3)	1,317,725	1,326,578	1,467,482	1,481,605	1,495,869	1,655,783
21. EBITDA (4)	955,481	955,406	1,087,487	1,091,815	1,096,781	1,247,166
22. EBIT (5)	750,500	747,557	876,729	878,108	880,083	1,027,436
23. EBIT	750,500	747,557	876,729	878,108	880,083	1,027,436
24. (-) Income Taxes	199,048	195,315	225,601	222,487	219,511	256,264
25. Debt Free Net Income	551,452	552,242	651,128	655,621	660,572	771,172
26. (+) Depreciation & Amortization	204,981	207,849	210,758	213,707	216,698	219,730
27. (-) Capital Expenditures (6)	199,730	202,525	205,359	208,233	211,147	214,102
28. (-) Changes in Working Capital (7)	13,309	13,398	14,822	14,964	15,108	16,723
29. Debt Free Net Cash Flow	$543,394	$544,167	$641,705	$646,131	$651,015	$760,077
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 8.72% (8)	0.8114	0.7463	0.6864	0.6314	0.5807	0.5342
32. Present Value Debt Free Net Cash Flow	$440,910	$406,112	$440,466	$407,967	$378,045	$406,033
	3	4	5	6	7	8
33. Present Value Factor: 11.43% (9)	0.7629	0.6847	0.6145	0.5514	0.4949	0.4441
34. Present Value Debt Free Net Cash Flow	$414,555	$372,591	$394,328	$356,277	$322,187	$337,550
	3	4	5	6	7	8
35. Present Value Factor: 8.62% (8)	0.8133	0.7487	0.6893	0.6346	0.5842	0.5379
36. Present Value Debt Free Net Cash Flow	$441,942	$407,418	$442,327	$410,035	$380,323	$408,845
	3	4	5	6	7	8
37. Present Value Factor: 11.33% (9)	0.7647	0.6868	0.6169	0.5542	0.4978	0.4471
38. Present Value Debt Free Net Cash Flow	$415,533	$373,734	$395,868	$358,086	$324,075	$339,830

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2033	2034	2035	2036	2037	2038
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,616,578	1,632,744	1,649,071	1,748,840	1,766,328	1,783,991
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	82,454	0	0	0
6. **Total Operating Revenues**	1,671,788	1,687,954	1,786,735	1,804,050	1,821,538	1,839,201
7. **Rate Increase**			**5%**			
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	472,017	483,817	495,913	508,310	521,018	534,044
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(16,359)	(16,768)	(17,187)	(17,617)	(18,057)	(18,509)
12. LESS: EOS - Professional Services	(58,259)	(59,716)	(61,209)	(62,739)	(64,308)	(65,915)
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	21,813	21,896	21,980	22,534	22,624	22,715
16. **Operating Expenses Before Depreciation**	419,211	429,229	439,497	450,489	461,277	472,335
17. Depreciation (2)	222,806	225,923	229,085	232,291	235,542	238,838
18. **Total Operating Expenses**	642,017	655,153	668,582	682,779	696,819	711,173
19. **Operating Income**	1,029,771	1,032,801	1,118,153	1,121,271	1,124,719	1,128,028
20. Revenues (3)	1,671,788	1,687,954	1,786,735	1,804,050	1,821,538	1,839,201
21. EBITDA (4)	1,252,577	1,258,725	1,347,238	1,353,561	1,360,261	1,366,866
22. EBIT (5)	1,029,771	1,032,801	1,118,153	1,121,271	1,124,719	1,128,028
23. EBIT	1,029,771	1,032,801	1,118,153	1,121,271	1,124,719	1,128,028
24. (-) Income Taxes	256,846	257,602	278,891	279,668	280,528	281,354
25. Debt Free Net Income	772,925	775,199	839,262	841,603	844,191	846,674
26. (+) Depreciation & Amortization	222,806	225,923	229,085	232,291	235,542	238,838
27. (-) Capital Expenditures (6)	217,098	220,136	223,217	226,341	229,508	232,720
28. (-) Changes in Working Capital (7)	16,885	17,048	18,046	18,221	18,398	18,576
29. Debt Free Net Cash Flow	$761,748	$763,938	$827,084	$829,331	$831,827	$834,216
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 8.72% (8)	0.4913	0.4519	0.4157	0.3823	0.3517	0.3235
32. Present Value Debt Free Net Cash Flow	$374,247	$345,224	$343,819	$317,053	$292,554	$269,869
	9	10	11	12	13	14
33. Present Value Factor: 11.43% (9)	0.3985	0.3577	0.3210	0.2881	0.2585	0.2320
34. Present Value Debt Free Net Cash Flow	$303,556	$273,261	$265,494	$238,930	$215,027	$193,538
	9	10	11	12	13	14
35. Present Value Factor: 8.62% (8)	0.4952	0.4559	0.4197	0.3864	0.3557	0.3275
36. Present Value Debt Free Net Cash Flow	$377,217	$348,279	$347,127	$320,454	$295,881	$273,206
	9	10	11	12	13	14
37. Present Value Factor: 11.33% (9)	0.4016	0.3607	0.3240	0.2910	0.2614	0.2348
38. Present Value Debt Free Net Cash Flow	$305,918	$275,553	$267,975	$241,335	$217,440	$195,874

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2039	2040	2041	2042	2043	2044
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,801,831	1,819,850	1,883,999	1,902,839	1,921,868	1,941,086
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	45,496	0	0	0	48,527
6. **Total Operating Revenues**	1,857,041	1,920,556	1,939,209	1,958,049	1,977,078	2,044,823
7. **Rate Increase**		**2%**				**2%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	547,395	561,080	575,107	589,484	604,221	619,327
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(18,971)	(19,446)	(19,932)	(20,430)	(20,941)	(21,464)
12. LESS: EOS - Professional Services	(67,563)	(69,252)	(70,983)	(72,758)	(74,577)	(76,441)
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	22,807	22,900	23,252	23,348	23,446	23,546
16. **Operating Expenses Before Depreciation**	483,667	495,282	507,443	519,644	532,150	544,967
17. Depreciation (2)	242,180	245,570	249,006	252,491	256,025	259,607
18. **Total Operating Expenses**	725,847	740,851	756,449	772,135	788,174	804,574
19. **Operating Income**	1,131,194	1,179,705	1,182,760	1,185,914	1,188,904	1,240,249
20. Revenues (3)	1,857,041	1,920,556	1,939,209	1,958,049	1,977,078	2,044,823
21. EBITDA (4)	1,373,374	1,425,274	1,431,766	1,438,405	1,444,928	1,499,856
22. EBIT (5)	1,131,194	1,179,705	1,182,760	1,185,914	1,188,904	1,240,249
23. EBIT	1,131,194	1,179,705	1,182,760	1,185,914	1,188,904	1,240,249
24. (-) Income Taxes	282,143	294,243	295,005	295,792	296,538	309,344
25. Debt Free Net Income	849,051	885,462	887,755	890,122	892,366	930,905
26. (+) Depreciation & Amortization	242,180	245,570	249,006	252,491	256,025	259,607
27. (-) Capital Expenditures (6)	235,977	239,279	242,628	246,023	249,466	252,957
28. (-) Changes in Working Capital (7)	18,756	19,398	19,586	19,776	19,968	20,653
29. Debt Free Net Cash Flow	$836,498	$872,355	$874,547	$876,814	$878,956	$916,902
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 8.72% (8)	0.2975	0.2737	0.2517	0.2315	0.2129	0.1959
32. Present Value Debt Free Net Cash Flow	$248,858	$238,763	$220,123	$202,982	$187,130	$179,621
	15	16	17	18	19	20
33. Present Value Factor: 11.43% (9)	0.2082	0.1868	0.1677	0.1505	0.1350	0.1212
34. Present Value Debt Free Net Cash Flow	$174,159	$162,956	$146,661	$131,960	$118,659	$111,129
	15	16	17	18	19	20
35. Present Value Factor: 8.62% (8)	0.3015	0.2776	0.2556	0.2353	0.2166	0.1994
36. Present Value Debt Free Net Cash Flow	$252,204	$242,166	$223,534	$206,314	$190,382	$182,830
	15	16	17	18	19	20
37. Present Value Factor: 11.33% (9)	0.2109	0.1895	0.1702	0.1529	0.1373	0.1233
38. Present Value Debt Free Net Cash Flow	$176,417	$165,311	$148,848	$134,065	$120,681	$113,054

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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 @ 8.72%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$916,902
Divided by Capitalization Factor (8)	8.72%
20th Year Terminal Value	10,514,933
20th Year Present Value Factor (11)	0.1959
Present Value of Terminal Value	2,059,875
Present Value Debt Free Net Cash Flow for 20 Years	6,432,236
Indicated Value	$8,492,111

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 8.72%		Multiples (13)	Terminal Value
Projected EBIT	$1,240,249	19.2	$23,812,773
Projected EBITDA	1,499,856	13.0	19,498,126
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			20,921,960
20th Year Present Value Factor (11)			0.1959
Present Value of Terminal Value			4,098,612
Present Value Debt Free Net Cash Flow for 20 Years			6,432,236
Indicated Value			$10,530,848

DCF With Capitalization of Terminal Value Model @ 11.43%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$916,902
Divided by Capitalization Factor (9)	11.43%
20th Year Terminal Value	8,021,891
20th Year Present Value Factor (12)	0.1212
Present Value of Terminal Value	972,253
Present Value Debt Free Net Cash Flow for 20 Years	5,245,679
Indicated Value	$6,217,932

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 11.43%		Multiples (13)	Terminal Value
Projected EBIT	$1,240,249	19.2	$23,812,773
Projected EBITDA	1,499,856	13.0	19,498,126
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			20,921,960
20th Year Present Value Factor (12)			0.1212
Present Value of Terminal Value			2,535,742
Present Value Debt Free Net Cash Flow for 20 Years			5,245,679
Indicated Value			$7,781,420

DCF With Capitalization of Terminal Value Model @ 8.62%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$916,902
Divided by Capitalization Factor (8)	8.62%
20th Year Terminal Value	10,636,916
20th Year Present Value Factor (11)	0.1959
Present Value of Terminal Value	2,083,772
Present Value Debt Free Net Cash Flow for 20 Years	6,432,236
Indicated Value	$8,516,008

DCF With Capitalization of Terminal Value Model @ 11.33%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$916,902
Divided by Capitalization Factor (9)	11.33%
20th Year Terminal Value	8,092,693
20th Year Present Value Factor (12)	0.1212
Present Value of Terminal Value	980,834
Present Value Debt Free Net Cash Flow for 20 Years	5,245,679
Indicated Value	$6,226,513

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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-2024 are actual. 2024 results are based on 2024 budget. Post-2024 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 2025 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2024 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2024 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2024 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2025 assumed due to IOU purchase in 2025.

(2) Depreciation - Pre-2024 based on actual depreciation. Post-2023 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-2025 based on financials/budget. Post-2024 years are estimates based on 1.65% of prior year-end GROSS Property, plant and equipment.
(7) Changes in Working Capital - based on water industry 1.01% of revenues.
(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 4/30/2024 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 4/30/2024 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

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

		Actual			Budget	Estimated	Estimated
					Year 0	Year 1	Year 2
		2021	2022	2023	2024	2025	2026
1.	**OPERATING REVENUES (1)**						
2.	Charges for services	816,362	825,694	828,919	906,500	908,684	958,258
3.	Other operating revenue	4,030	3,270	11,635	55,210	55,210	55,210
4.	Tap Fees	0	0	0	0	0	0
5.	Other (Rate Increase)	0	0	0	0	0	0
6.	**Total Operating Revenues**	820,392	828,964	840,554	961,710	963,894	1,013,468
7.	**Rate Increase**						
8.	**OPERATING EXPENSES (1)**						
9.	Operating & Maintenance Expenses	283,154	277,955	343,336	377,957	387,406	397,091
10.	Remove Economies of Scale						
11.	LESS: EOS - Wages & Benefits	0	0	0	(13,099)	(13,427)	(13,762)
12.	LESS: EOS - Professional Services	0	0	0	(46,650)	(47,816)	(49,012)
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**	283,154	277,955	343,336	318,208	326,163	334,317
16.	Depreciation (2)	0	0	0	0	328,473	333,125
17.	**Total Operating Expenses**	283,154	277,955	343,336	318,208	654,637	667,443
18.	**Operating Income**	537,238	551,009	497,218	643,502	309,257	346,025
19.	Revenues (3)	820,392	828,964	840,554	961,710	963,894	1,013,468
20.	EBITDA (4)	537,238	551,009	497,218	643,502	637,731	679,151
21.	EBIT (5)	537,238	551,009	497,218	643,502	309,257	346,025
22.	EBIT	537,238	551,009	497,218	643,502	309,257	346,025
23.	(-) Income Taxes	0	0	0	0	0	0
24.	Debt Free Net Income	537,238	551,009	497,218	643,502	309,257	346,025
25.	(+) Depreciation & Amortization	0	0	0	0	328,473	333,125
26.	(-) Capital Expenditures (6)	65,000	35,646	1,833	197,895	320,038	324,570
27.	(-) Changes in Working Capital (7)	8,286	8,373	8,490	9,713	9,735	10,236
28.	Debt Free Net Cash Flow	$463,952	$506,990	$486,895	$435,894	$307,957	$344,345
29.	PV Time Period (mid-year)				(0.5)	0.5	1.5
						1	2
30.	Present Value Factor: 4.39% (8)					0.9787	0.9376
31.	Present Value Debt Free Net Cash Flow					$301,398	$322,857
						1	2
32.	Present Value Factor: 4.29% (9)					0.9792	0.9389
33.	Present Value Debt Free Net Cash Flow					$301,552	$323,305

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2027	2028	2029	2030	2031	2032
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,010,012	1,322,222	1,335,239	1,348,592	1,498,285	1,513,268
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	303,004	0	0	134,859	0	0
6. **Total Operating Revenues**	1,368,226	1,377,432	1,390,449	1,538,661	1,553,495	1,568,478
7. **Rate Increase**	**30%**			**10%**		
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	407,019	417,194	427,624	438,315	449,272	460,504
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,106)	(14,459)	(14,820)	(15,191)	(15,571)	(15,960)
12. LESS: EOS - Professional Services	(50,237)	(51,493)	(52,780)	(54,100)	(55,452)	(56,838)
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**	342,675	351,242	360,023	369,024	378,250	387,706
16. Depreciation (2)	337,843	342,627	347,479	352,399	357,390	362,451
17. **Total Operating Expenses**	680,518	693,869	707,502	721,423	735,639	750,157
18. **Operating Income**	687,708	683,563	682,947	817,238	817,856	818,321
19. Revenues (3)	1,368,226	1,377,432	1,390,449	1,538,661	1,553,495	1,568,478
20. EBITDA (4)	1,025,551	1,026,190	1,030,426	1,169,637	1,175,245	1,180,772
21. EBIT (5)	687,708	683,563	682,947	817,238	817,856	818,321
22. EBIT	687,708	683,563	682,947	817,238	817,856	818,321
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	687,708	683,563	682,947	817,238	817,856	818,321
25. (+) Depreciation & Amortization	337,843	342,627	347,479	352,399	357,390	362,451
26. (-) Capital Expenditures (6)	329,166	333,828	338,555	343,349	348,211	353,142
27. (-) Changes in Working Capital (7)	13,819	13,912	14,044	15,540	15,690	15,842
28. Debt Free Net Cash Flow	$682,566	$678,450	$677,827	$810,748	$811,344	$811,789
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: 4.39% (8)	0.8982	0.8604	0.8242	0.7895	0.7563	0.7245
31. Present Value Debt Free Net Cash Flow	$613,080	$583,738	$558,665	$640,085	$613,620	$588,141
	3	4	5	6	7	8
32. Present Value Factor: 4.29% (9)	0.9003	0.8633	0.8278	0.7937	0.7611	0.7298
33. Present Value Debt Free Net Cash Flow	$614,514	$585,706	$561,105	$643,490	$617,514	$592,443

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Income Approach
East Coventry Township Wastewater System Assets
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DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2033	2034	2035	2036	2037	2038
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,528,401	1,698,053	1,715,034	1,732,184	1,749,506	1,767,001
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	152,840	0	0	0	0	0
6. **Total Operating Revenues**	1,736,451	1,753,263	1,770,244	1,787,394	1,804,716	1,822,211
7. **Rate Increase**	**10%**					
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	472,017	483,817	495,913	508,310	521,018	534,044
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(16,359)	(16,768)	(17,187)	(17,617)	(18,057)	(18,509)
12. LESS: EOS - Professional Services	(58,259)	(59,716)	(61,209)	(62,739)	(64,308)	(65,915)
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**	397,398	407,333	417,517	427,955	438,653	449,620
16. Depreciation (2)	367,583	372,788	378,068	383,421	388,851	394,358
17. **Total Operating Expenses**	764,981	780,122	795,584	811,376	827,504	843,978
18. **Operating Income**	971,470	973,141	974,660	976,018	977,212	978,233
19. Revenues (3)	1,736,451	1,753,263	1,770,244	1,787,394	1,804,716	1,822,211
20. EBITDA (4)	1,339,053	1,345,930	1,352,727	1,359,439	1,366,063	1,372,591
21. EBIT (5)	971,470	973,141	974,660	976,018	977,212	978,233
22. EBIT	971,470	973,141	974,660	976,018	977,212	978,233
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	971,470	973,141	974,660	976,018	977,212	978,233
25. (+) Depreciation & Amortization	367,583	372,788	378,068	383,421	388,851	394,358
26. (-) Capital Expenditures (6)	358,143	363,215	368,358	373,575	378,865	384,230
27. (-) Changes in Working Capital (7)	17,538	17,708	17,879	18,053	18,228	18,404
28. Debt Free Net Cash Flow	$963,371	$965,007	$966,490	$967,812	$968,970	$969,957
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: 4.39% (8)	0.6941	0.6649	0.6369	0.6101	0.5845	0.5599
31. Present Value Debt Free Net Cash Flow	$668,676	$641,633	$615,557	$590,462	$566,363	$543,079
	9	10	11	12	13	14
32. Present Value Factor: 4.29% (9)	0.6997	0.6710	0.6434	0.6169	0.5915	0.5672
33. Present Value Debt Free Net Cash Flow	$674,071	$647,519	$621,840	$597,043	$573,146	$550,160

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Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2039	2040	2041	2042	2043	2044
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,784,671	1,802,518	1,866,057	1,884,717	1,922,600	1,941,826
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	45,063	0	18,847	0	0
6. **Total Operating Revenues**	1,839,881	1,902,791	1,921,267	1,958,774	1,977,810	1,997,036
7. **Rate Increase**		**3%**		**1%**		
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	547,395	561,080	575,107	589,484	604,221	619,327
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(18,971)	(19,446)	(19,932)	(20,430)	(20,941)	(21,464)
12. LESS: EOS - Professional Services	(67,563)	(69,252)	(70,983)	(72,758)	(74,577)	(76,441)
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**	460,860	472,382	484,191	496,296	508,704	521,421
16. Depreciation (2)	399,942	405,606	411,350	417,175	423,082	429,073
17. **Total Operating Expenses**	860,802	877,987	895,541	913,471	931,786	950,494
18. **Operating Income**	979,079	1,024,804	1,025,726	1,045,303	1,046,024	1,046,542
19. Revenues (3)	1,839,881	1,902,791	1,921,267	1,958,774	1,977,810	1,997,036
20. EBITDA (4)	1,379,021	1,430,409	1,437,076	1,462,478	1,469,106	1,475,615
21. EBIT (5)	979,079	1,024,804	1,025,726	1,045,303	1,046,024	1,046,542
22. EBIT	979,079	1,024,804	1,025,726	1,045,303	1,046,024	1,046,542
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	979,079	1,024,804	1,025,726	1,045,303	1,046,024	1,046,542
25. (+) Depreciation & Amortization	399,942	405,606	411,350	417,175	423,082	429,073
26. (-) Capital Expenditures (6)	389,671	395,189	400,786	406,461	412,217	418,054
27. (-) Changes in Working Capital (7)	18,583	19,218	19,405	19,784	19,976	20,170
28. Debt Free Net Cash Flow	$970,767	$1,016,002	$1,016,885	$1,036,233	$1,036,914	$1,037,391
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: 4.39% (8)	0.5363	0.5138	0.4922	0.4715	0.4517	0.4327
31. Present Value Debt Free Net Cash Flow	$520,622	$522,022	$500,511	$488,584	$468,374	$448,879
	15	16	17	18	19	20
32. Present Value Factor: 4.29% (9)	0.5439	0.5215	0.5000	0.4795	0.4597	0.4408
33. Present Value Debt Free Net Cash Flow	$528,000	$529,845	$508,442	$496,874	$476,669	$457,282

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Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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 @ 4.39%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,037,391
Divided by Capitalization Factor (8)	4.39%
20th Year Terminal Value	23,630,770
20th Year Present Value Factor (11)	0.4327
Present Value of Terminal Value	10,225,034
Present Value Debt Free Net Cash Flow for 20 Years	10,796,346
Indicated Value	$21,021,381

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.39%		Multiples (13)	Terminal Value
Projected EBIT	$1,046,542	19.2	$20,093,603
Projected EBITDA	1,475,615	13.0	19,182,993
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,483,494
20th Year Present Value Factor (11)			0.4327
Present Value of Terminal Value			8,430,508
Present Value Debt Free Net Cash Flow for 20 Years			10,796,346
Indicated Value			$19,226,854

DCF With Capitalization of Terminal Value Model @ 4.29%	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,037,391
Divided by Capitalization Factor (9)	4.29%
20th Year Terminal Value	24,181,604
20th Year Present Value Factor (12)	0.4327
Present Value of Terminal Value	10,463,380
Present Value Debt Free Net Cash Flow for 20 Years	10,796,346
Indicated Value	$21,259,726

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.29%		Multiples (13)	Terminal Value
Projected EBIT	$1,046,542	19.2	$20,093,603
Projected EBITDA	1,475,615	13.0	19,182,993
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,483,494
20th Year Present Value Factor (12)			0.4327
Present Value of Terminal Value			8,430,508
Present Value Debt Free Net Cash Flow for 20 Years			10,796,346
Indicated Value			$19,226,854

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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-2024 are actual. 2024 results are based on 2024 budget. Post-2024 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 2025 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2024 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2024 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2024 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

(2) Depreciation - Pre-2024 based on actual depreciation. Post-2023 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-2025 based on financials/budget. Post-2024 years are estimates based on 1.67% of prior year-end GROSS Property, plant and equipment.
(7) Changes in Working Capital - based on water industry 1.01% of revenues.
(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 equal to discount rate, where capitalization rate = K - g.
(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 4/30/2024 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

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

		Actual			Budget	Estimated	Estimated
					Year 0	Year 1	Year 2
		2021	2022	2023	2024	2025	2026
1.	**OPERATING REVENUES (1)**						
2.	Charges for services	816,362	825,694	828,919	906,500	908,684	958,258
3.	Other operating revenue	4,030	3,270	11,635	55,210	55,210	55,210
4.	Tap Fees	0	0	0	0	0	0
5.	Other (Rate Increase)	0	0	0	0	0	718,694
6.	**Total Operating Revenues**	820,392	828,964	840,554	961,710	963,894	1,732,162
7.	**Rate Increase**						**75%**
8.	**OPERATING EXPENSES (1)**						
9.	Operating & Maintenance Expenses	283,154	277,955	343,336	377,957	387,406	397,091
10.	Remove Economies of Scale						
11.	LESS: EOS - Wages & Benefits	0	0	0	(13,099)	(13,427)	(13,762)
12.	LESS: EOS - Professional Services	0	0	0	(46,650)	(47,816)	(49,012)
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	32,981	32,982
16.	**Operating Expenses Before Depreciation**	283,154	277,955	343,336	318,208	359,144	367,299
17.	Depreciation (2)	0	0	0	0	328,473	333,125
18.	**Total Operating Expenses**	283,154	277,955	343,336	318,208	687,618	700,425
19.	**Operating Income**	537,238	551,009	497,218	643,502	276,276	1,031,737
20.	Revenues (3)	820,392	828,964	840,554	961,710	963,894	1,732,162
21.	EBITDA (4)	537,238	551,009	497,218	643,502	604,750	1,364,863
22.	EBIT (5)	537,238	551,009	497,218	643,502	276,276	1,031,737
23.	EBIT	537,238	551,009	497,218	643,502	276,276	1,031,737
24.	(-) Income Taxes	0	0	0	178,296	75,457	277,714
25.	Debt Free Net Income	537,238	551,009	497,218	465,206	200,819	754,023
26.	(+) Depreciation & Amortization	0	0	0	0	328,473	333,125
27.	(-) Capital Expenditures (6)	65,000	35,646	1,833	197,895	320,038	324,570
28.	(-) Changes in Working Capital (7)	8,286	8,373	8,490	9,713	9,735	17,495
29.	Debt Free Net Cash Flow	$463,952	$506,990	$486,895	$257,598	$199,519	$745,084
30.	PV Time Period (mid-year)				(0.5)	0.5	1.5
31.	Present Value Factor: 8.72% (8)					0.9591	0.8821
32.	Present Value Debt Free Net Cash Flow					$191,359	$657,238
						1	2
33.	Present Value Factor: 11.43% (9)					0.9473	0.8502
34.	Present Value Debt Free Net Cash Flow					$189,005	$633,470
						1	2
35.	Present Value Factor: 8.62% (8)					0.9595	0.8834
36.	Present Value Debt Free Net Cash Flow					$191,439	$658,207
						1	2
37.	Present Value Factor: 11.33% (9)					0.9478	0.8513
38.	Present Value Debt Free Net Cash Flow					$189,104	$634,290

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Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3	Estimated Year 4	Estimated Year 5	Estimated Year 6	Estimated Year 7	Estimated Year 8
	2027	2028	2029	2030	2031	2032
1. **OPERATING REVENUES (1)**						
2. Charges for services	1,767,521	1,779,915	1,797,437	2,087,724	2,108,601	2,129,687
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	269,616	0	0	255,562
6. **Total Operating Revenues**	1,822,731	1,835,125	2,122,263	2,142,934	2,163,811	2,440,459
7. **Rate Increase**			**15%**			**12%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	407,019	417,194	427,624	438,315	449,272	460,504
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,106)	(14,459)	(14,820)	(15,191)	(15,571)	(15,960)
12. LESS: EOS - Professional Services	(50,237)	(51,493)	(52,780)	(54,100)	(55,452)	(56,838)
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	37,340	37,843	37,901	39,523	39,627	39,732
16. **Operating Expenses Before Depreciation**	380,015	389,085	397,924	408,547	417,877	427,438
17. Depreciation (2)	337,843	342,627	347,479	352,399	357,390	362,451
18. **Total Operating Expenses**	717,858	731,712	745,403	760,946	775,266	789,889
19. **Operating Income**	1,104,873	1,103,413	1,376,860	1,381,988	1,388,545	1,650,570
20. Revenues (3)	1,822,731	1,835,125	2,122,263	2,142,934	2,163,811	2,440,459
21. EBITDA (4)	1,442,716	1,446,040	1,724,339	1,734,387	1,745,934	2,013,021
22. EBIT (5)	1,104,873	1,103,413	1,376,860	1,381,988	1,388,545	1,650,570
23. EBIT	1,104,873	1,103,413	1,376,860	1,381,988	1,388,545	1,650,570
24. (-) Income Taxes	293,036	288,290	354,295	350,156	346,332	411,687
25. Debt Free Net Income	811,837	815,123	1,022,565	1,031,832	1,042,213	1,238,883
26. (+) Depreciation & Amortization	337,843	342,627	347,479	352,399	357,390	362,451
27. (-) Capital Expenditures (6)	329,166	333,828	338,555	343,349	348,211	353,142
28. (-) Changes in Working Capital (7)	18,410	18,535	21,435	21,644	21,854	24,649
29. Debt Free Net Cash Flow	$802,104	$805,387	$1,010,054	$1,019,238	$1,029,537	$1,223,544
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 8.72% (8)	0.8114	0.7463	0.6864	0.6314	0.5807	0.5342
32. Present Value Debt Free Net Cash Flow	$650,827	$601,060	$693,301	$643,547	$597,852	$653,617
	3	4	5	6	7	8
33. Present Value Factor: 11.43% (9)	0.7629	0.6847	0.6145	0.5514	0.4949	0.4441
34. Present Value Debt Free Net Cash Flow	$611,925	$551,448	$620,678	$562,008	$509,518	$543,376
	3	4	5	6	7	8
35. Present Value Factor: 8.62% (8)	0.8133	0.7487	0.6893	0.6346	0.5842	0.5379
36. Present Value Debt Free Net Cash Flow	$652,351	$602,993	$696,230	$646,809	$601,456	$658,144
	3	4	5	6	7	8
37. Present Value Factor: 11.33% (9)	0.7647	0.6868	0.6169	0.5542	0.4978	0.4471
38. Present Value Debt Free Net Cash Flow	$613,369	$553,140	$623,102	$564,862	$512,504	$547,046

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2033	2034	2035	2036	2037	2038
1. **OPERATING REVENUES (1)**						
2. Charges for services	2,409,102	2,433,193	2,457,525	2,730,310	2,757,613	2,785,189
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	245,752	0	0	278,519
6. **Total Operating Revenues**	2,464,312	2,488,403	2,758,487	2,785,520	2,812,823	3,118,918
7. **Rate Increase**			**10%**			**10%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	472,017	483,817	495,913	508,310	521,018	534,044
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(16,359)	(16,768)	(17,187)	(17,617)	(18,057)	(18,509)
12. LESS: EOS - Professional Services	(58,259)	(59,716)	(61,209)	(62,739)	(64,308)	(65,915)
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	41,293	41,416	41,539	43,062	43,202	43,343
16. **Operating Expenses Before Depreciation**	438,691	448,749	459,056	471,017	481,855	492,963
17. Depreciation (2)	367,583	372,788	378,068	383,421	388,851	394,358
18. **Total Operating Expenses**	806,274	821,538	837,123	854,438	870,706	887,321
19. **Operating Income**	1,658,038	1,666,865	1,921,364	1,931,082	1,942,117	2,231,597
20. Revenues (3)	2,464,312	2,488,403	2,758,487	2,785,520	2,812,823	3,118,918
21. EBITDA (4)	2,025,621	2,039,654	2,299,431	2,314,503	2,330,968	2,625,955
22. EBIT (5)	1,658,038	1,666,865	1,921,364	1,931,082	1,942,117	2,231,597
23. EBIT	1,658,038	1,666,865	1,921,364	1,931,082	1,942,117	2,231,597
24. (-) Income Taxes	413,549	415,751	479,228	481,652	484,405	556,607
25. Debt Free Net Income	1,244,489	1,251,114	1,442,136	1,449,430	1,457,712	1,674,990
26. (+) Depreciation & Amortization	367,583	372,788	378,068	383,421	388,851	394,358
27. (-) Capital Expenditures (6)	358,143	363,215	368,358	373,575	378,865	384,230
28. (-) Changes in Working Capital (7)	24,890	25,133	27,861	28,134	28,410	31,501
29. Debt Free Net Cash Flow	$1,229,039	$1,235,555	$1,423,985	$1,431,143	$1,439,288	$1,653,617
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 8.72% (8)	0.4913	0.4519	0.4157	0.3823	0.3517	0.3235
32. Present Value Debt Free Net Cash Flow	$603,827	$558,347	$591,950	$547,126	$506,198	$534,945
	9	10	11	12	13	14
33. Present Value Factor: 11.43% (9)	0.3985	0.3577	0.3210	0.2881	0.2585	0.2320
34. Present Value Debt Free Net Cash Flow	$489,772	$441,958	$457,099	$412,312	$372,056	$383,639
	9	10	11	12	13	14
35. Present Value Factor: 8.62% (8)	0.4952	0.4559	0.4197	0.3864	0.3557	0.3275
36. Present Value Debt Free Net Cash Flow	$608,620	$563,289	$597,646	$552,994	$511,955	$541,560
	9	10	11	12	13	14
37. Present Value Factor: 11.33% (9)	0.4016	0.3607	0.3240	0.2910	0.2614	0.2348
38. Present Value Debt Free Net Cash Flow	$493,582	$445,665	$461,371	$416,463	$376,230	$388,269

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2039	2040	2041	2042	2043	2044
1. **OPERATING REVENUES (1)**						
2. Charges for services	3,094,345	3,125,289	3,235,455	3,267,810	3,366,497	3,400,162
3. Other operating revenue	55,210	55,210	55,210	55,210	55,210	55,210
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	78,132	0	65,356	0	68,003
6. **Total Operating Revenues**	3,149,555	3,258,631	3,290,665	3,388,376	3,421,707	3,523,375
7. **Rate Increase**		**2%**		**2%**		**2%**
8. **OPERATING EXPENSES (1)**						
9. Operating & Maintenance Expenses	547,395	561,080	575,107	589,484	604,221	619,327
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(18,971)	(19,446)	(19,932)	(20,430)	(20,941)	(21,464)
12. LESS: EOS - Professional Services	(67,563)	(69,252)	(70,983)	(72,758)	(74,577)	(76,441)
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	45,070	45,229	45,835	46,002	46,543	46,717
16. **Operating Expenses Before Depreciation**	505,930	517,611	530,026	542,298	555,247	568,138
17. Depreciation (2)	399,942	405,606	411,350	417,175	423,082	429,073
18. **Total Operating Expenses**	905,872	923,216	941,376	959,473	978,329	997,211
19. **Operating Income**	2,243,683	2,335,415	2,349,289	2,428,903	2,443,378	2,526,164
20. Revenues (3)	3,149,555	3,258,631	3,290,665	3,388,376	3,421,707	3,523,375
21. EBITDA (4)	2,643,625	2,741,020	2,760,639	2,846,078	2,866,460	2,955,237
22. EBIT (5)	2,243,683	2,335,415	2,349,289	2,428,903	2,443,378	2,526,164
23. EBIT	2,243,683	2,335,415	2,349,289	2,428,903	2,443,378	2,526,164
24. (-) Income Taxes	559,622	582,501	585,962	605,819	609,430	630,078
25. Debt Free Net Income	1,684,061	1,752,914	1,763,327	1,823,084	1,833,948	1,896,086
26. (+) Depreciation & Amortization	399,942	405,606	411,350	417,175	423,082	429,073
27. (-) Capital Expenditures (6)	389,671	395,189	400,786	406,461	412,217	418,054
28. (-) Changes in Working Capital (7)	31,811	32,912	33,236	34,223	34,559	35,586
29. Debt Free Net Cash Flow	$1,662,521	$1,730,418	$1,740,655	$1,799,575	$1,810,254	$1,871,519
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 8.72% (8)	0.2975	0.2737	0.2517	0.2315	0.2129	0.1959
32. Present Value Debt Free Net Cash Flow	$494,600	$473,615	$438,123	$416,602	$385,403	$366,631
	15	16	17	18	19	20
33. Present Value Factor: 11.43% (9)	0.2082	0.1868	0.1677	0.1505	0.1350	0.1212
34. Present Value Debt Free Net Cash Flow	$346,137	$323,242	$291,908	$270,836	$244,384	$226,828
	15	16	17	18	19	20
35. Present Value Factor: 8.62% (8)	0.3015	0.2776	0.2556	0.2353	0.2166	0.1994
36. Present Value Debt Free Net Cash Flow	$501,250	$480,364	$444,911	$423,440	$392,101	$373,181
	15	16	17	18	19	20
37. Present Value Factor: 11.33% (9)	0.2109	0.1895	0.1702	0.1529	0.1373	0.1233
38. Present Value Debt Free Net Cash Flow	$350,626	$327,914	$296,259	$275,155	$248,548	$230,758

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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 @ 8.72%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,871,519
Divided by Capitalization Factor (8)	8.72%
20th Year Terminal Value	21,462,371
20th Year Present Value Factor (11)	0.1959
Present Value of Terminal Value	4,204,479
Present Value Debt Free Net Cash Flow for 20 Years	10,606,169
Indicated Value	$14,810,647

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 8.72%			
		Multiples (13)	Terminal Value
Projected EBIT	$2,526,164	19.2	$48,502,345
Projected EBITDA	2,955,237	13.0	38,418,079
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			41,745,887
20th Year Present Value Factor (11)			0.1959
Present Value of Terminal Value			8,178,019
Present Value Debt Free Net Cash Flow for 20 Years			10,606,169
Indicated Value			$18,784,188

DCF With Capitalization of Terminal Value Model @ 11.43%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,871,519
Divided by Capitalization Factor (9)	11.43%
20th Year Terminal Value	16,373,743
20th Year Present Value Factor (12)	0.1212
Present Value of Terminal Value	1,984,498
Present Value Debt Free Net Cash Flow for 20 Years	8,481,600
Indicated Value	$10,466,097

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 11.43%			
		Multiples (13)	Terminal Value
Projected EBIT	$2,526,164	19.2	$48,502,345
Projected EBITDA	2,955,237	13.0	38,418,079
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			41,745,887
20th Year Present Value Factor (12)			0.1212
Present Value of Terminal Value			5,059,602
Present Value Debt Free Net Cash Flow for 20 Years			8,481,600
Indicated Value			$13,541,201

DCF With Capitalization of Terminal Value Model @ 8.62%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,871,519
Divided by Capitalization Factor (8)	8.62%
20th Year Terminal Value	21,711,355
20th Year Present Value Factor (11)	0.1959
Present Value of Terminal Value	4,253,254
Present Value Debt Free Net Cash Flow for 20 Years	10,606,169
Indicated Value	$14,859,423

DCF With Capitalization of Terminal Value Model @ 11.33%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	$1,871,519
Divided by Capitalization Factor (9)	11.33%
20th Year Terminal Value	16,518,259
20th Year Present Value Factor (12)	0.1212
Present Value of Terminal Value	2,002,013
Present Value Debt Free Net Cash Flow for 20 Years	8,481,600
Indicated Value	$10,483,613

See last page of this EXHIBIT for notes and assumptions.

Income Approach
East Coventry Township Wastewater System Assets
Pro Forma and Estimted 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-2024 are actual. 2024 results are based on 2024 budget. Post-2024 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 2025 with shown rate increases.

OPERATING EXPENSES - increase at 2.5% annually after 2024 unless noted elsewhere. Assumed economies of scale are shown on lines below.
Wages & Benefits - Post-2024 assumed 15% savings due to economies of scale. Increase at 2.5% afterwards.

Professional Services - Post-2024 assumed 50% savings due to economies of scale. Increase at 2.5% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2025 assumed due to IOU purchase in 2025.

(2) Depreciation - Pre-2024 based on actual depreciation. Post-2023 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-2025 based on financials/budget. Post-2024 years are estimates based on 1.67% of prior year-end GROSS Property, plant and equipment.
(7) Changes in Working Capital - based on water industry 1.01% of revenues.
(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 4/30/2024 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 4/30/2024 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

East Coventry Township Wastewater System Assets
Summary of Income Approach Results and Conclusion

Methods	Results
Exhibit 15, page 5 (MUNI)	
DCF With Capitalization of Terminal Value Model @ 4.29%	$21,259,726
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.29%	19,226,854
Indicated Value (Median)	$20,243,290
Exhibit 16, page 5 (IOU)	
DCF With Capitalization of Terminal Value Model @ 8.62%	$14,859,423
DCF With Capitalization of Terminal Value Model @ 11.33%	10,483,613
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 8.72%	18,784,188
DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 11.43%	13,541,201
Indicated Value (Median)	$14,200,312
Conclusion	
MUNI DCF	$20,243,290
IOU DCF	14,200,312
Conclusion (Median)	$17,221,801

Market Multiples Method
East Coventry Township Wastewater System Assets
2024 Operations
Market Multiple Method

	A	B	C	D (Col B × Col C)	E (Col A × Col D)
	Subject Company Statistic (1)	Comparison Group's Valuation Multiples 4/30/2024	East Coventry's Growth & Risk Adjustment	East Coventry's Risk Adjusted Valuation Multiples 4/30/2024	East Coventry's Market Multiples Valuation
Risk Adjusted Multiple					
1. East Coventry Township Wastewater System Assets					
2. Investor Provided Capital	$0	1.56	80.00%	1.25	NA
3. Gross PP&E	$11,798,761	1.08	93.00%	1.00	11,798,761
4. Net PP&E	$8,696,753	1.35	93.00%	1.26	10,957,909
5. Revenues	$961,710	6.93	80.00%	5.54	5,327,873
6. EBITDA	$643,502	16.24	80.00%	12.99	8,359,089
7. EBIT	$445,607	24.00	80.00%	19.20	8,555,651
8. Customers	830	$9,032	95.00%	$8,580	7,121,400
9. Population	2,945	$2,598	95.00%	$2,468	7,268,260
10.					
11. Average					$8,484,135

Conclusion of Market Multiple Method Valuation

		Low	High		Conclusion
12.	Capital Items	$10,957,909	$11,798,761		$11,378,335
13.	(Items 2-4)				
14.	Income Statement Items	5,327,873	8,555,651		-
15.	(Items 5 -7)				
16.	Demographics Items	7,121,400	7,268,260		7,194,830
17.	(Items 8-9)				
				Conclusion *	$9,286,582

* - Conclusion based on weighting of 50% Capital Items and 50% Demographics Items

Market Multiples Method
East Coventry Township Wastewater System Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2023		4/30/2024
	Gross PP&E	Net PP&E	Invest. Total Capital	12 Mos. Rev.	12 Mos. EBITDA	12 Mos. EBIT	Customers	Population	Enterprise Value
	($ Mill)	($ Mill)	($ Mill)	($ Mill)	($ Mill)	($ Mill)			($ Mill)
American States Water Co	$2,532.952	$1,908.480	$1,693.992	$595.699	$241.422	$198.168	288,870	1,000,000	$3,541.104
American Water Works Company Inc	$32,275.000	$25,524.000	$22,252.000	$4,234.000	$2,240.000	$1,536.000	3,486,000	14,000,000	$35,893.603
Artesian Resources Corp	$904.705	$718.483	$411.460	$98.861	$42.129	$28.794	106,640	325,740	$537.832
California Water Service Group	$4,905.949	$3,765.909	$2,677.319	$794.632	$205.259	$82.135	553,600	2,000,000	$4,130.748
Essential Utilities, Inc.	$15,014.437	$12,134.488	$13,004.949	$2,053.824	$1,039.575	$695.880	1,857,461	5,500,000	$17,109.362
Middlesex Water Co	$1,252.689	$1,013.049	$837.381	$166.274	$71.267	$41.825	125,300	500,000	$1,315.915
SJW Corp.	$4,129.656	$3,168.753	$2,980.571	$670.363	$256.343	$148.205	405,350	1,544,000	$3,520.673
York Water Company (The)	$612.887	$495.273	$401.817	$71.031	$40.195	$28.449	77,893	209,000	$689.645
Average	$7,703.534	$6,091.054	$5,532.436	$1,085.586	$517.024	$344.932	862,639	3,134,843	$8,342.360
Max	$32,275.000	$25,524.000	$22,252.000	$4,234.000	$2,240.000	$1,536.000	3,486,000	14,000,000	$35,893.603
Min	$612.887	$495.273	$401.817	$71.031	$40.195	$28.449	77,893	209,000	$537.832
Median	$3,331.304	$2,538.617	$2,185.656	$633.031	$223.341	$115.170	347,110	1,272,000	$3,530.888

	Enterprise Value as a Multiple of								
	Invest. Capital	Gross PP&E	Net PP&E	Rev.	EBITDA	EBIT	Customers	Population	Population Per Customer
	(x)	(x)	(x)	(x)	(x)	(x)	($)	($)	
American States Water Co	2.09	1.40	1.86	5.94	14.67	17.87	$12,258	$3,541	3.46
American Water Works Company Inc	1.61	1.11	1.41	8.48	16.02	23.37	$10,297	$2,564	4.02
Artesian Resources Corp	1.31	0.59	0.75	5.44	12.77	18.68	$5,043	$1,651	3.05
California Water Service Group	1.54	0.84	1.10	5.20	20.12	50.29	$7,462	$2,065	3.61
Essential Utilities, Inc.	1.32	1.14	1.41	8.33	16.46	24.59	$9,211	$3,111	2.96
Middlesex Water Co	1.57	1.05	1.30	7.91	18.46	31.46	$10,502	$2,632	3.99
SJW Corp.	1.18	0.85	1.11	5.25	13.73	23.76	$8,686	$2,280	3.81
York Water Company (The)	1.72	1.13	1.39	9.71	17.16	24.24	$8,854	$3,300	2.68
Average	1.54	1.01	1.29	7.03	16.17	26.78	$9,039	$2,643	3.45
Max	2.09	1.40	1.86	9.71	20.12	50.29	$12,258	$3,541	4.02
Min	1.18	0.59	0.75	5.20	12.77	17.87	$5,043	$1,651	2.68
Median	1.56	1.08	1.35	6.93	16.24	24.00	$9,032	$2,598	3.54

Market Multiples Method
East Coventry Township Wastewater System Assets
Quantification of the Effective Risk/Growth Adjustments

		Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple		1.35	1.08	1.56
Ratio to Net PPE			80.00%	
Not Contributed Multiple (NPPE = ICAP mult.)		1.56	1.25	
Base Risk Factor	x	80%	80%	
Subject Company Adjusted Multiple		1.25	1.00	
Subject Company Adjusted Multiple		1.25	1.00	
Comparable Group Multiple	÷	1.35	1.08	
Effective Risk/Growth Adjustment		93%	93%	

		Net PP&E	Gross PP&E
Plant Assets		100%	100%
Ratio of Known "Cost Free" Capital		22%	22%
Plant Assets Less Known "Cost Free" Capital		78%	78%
Comparable Group Multiple		1.35	1.08
Plant Assets Less Known "Cost Free" Capital	÷	78%	78%
Mulitple Without "Cost Free" Capital		1.73	1.38
Base Risk Factor	x	80%	80%
Subject Company Adjusted Multiple		1.38	1.11
Subject Company Adjusted Multiple		1.38	1.11
Comparable Group Multiple	÷	1.35	1.08
Effective Risk/Growth Adjustment		102%	103%

		Net PP&E	Customers
Comparable Group Multiple		1.35	9,032.00
Implied Capitalization Rate (1÷Multiple)		74.07%	0.0111%
Ratio of Net PP&E Mult. to Invest. Capital Mult.		115.56%	
Less 1	-	1.00	
Difference in Capital Source due to Contributions		15.56%	
Assumed Investor Financed (1-Difference in Capital Source)		84.44%	84.44%
Implied Capitalization Rate (1÷Multiple)	x		0.0111%
Not Contributed Cap. Rate			0.0093%
Not Contributed Multiple (1÷Cap. Rate)			10,696.35
Base Risk Factor	x		80%
Subject Company Adjusted Multiple			8,557.08
Subject Company Adjusted Multiple			8,557.08
Comparable Group Multiple	÷		9,032.00
Effective Risk/Growth Adjustment			95%

Selected Transactions Method
For East Coventry Township Wastewater System Assets
Summary

		Median	Mid-Point	Value
	All Selected Transactions Companies (N = 22)			
1.	Asset Items			$17,741,348
2.	Ex-Ante (page 2)	$18,085,273	$20,589,693	
3.	Ex-Post (page 3)	$13,776,259	$18,514,166	
4.	Demographics Items			$7,483,540
5.	Ex-Ante (page 2)	$7,132,260	$7,834,820	
6.	Ex-Post (page 3)	$7,132,260	$7,834,820	
7.			Indicated Value *	$12,612,444
	Fully Integrated Selected Transactions Companies (N = 10)			
8.	Asset Items			$17,151,667
9.	Ex-Ante (page 2)	$18,232,609	$20,589,693	
10.	Ex-Post (page 3)	$15,354,836	$14,429,528	
11.	Demographics Items			$9,410,619
12.	Ex-Ante (page 2)	$10,009,130	$8,812,109	
13.	Ex-Post (page 3)	$10,009,130	$8,812,109	
14.			Indicated Value *	$13,281,143
	Mostly Collection/Distribution Selected Transactions Companies (N = 12)			
15.	Asset Items			$16,512,210
16.	Ex-Ante (page 2)	$13,991,249	$20,746,666	
17.	Ex-Post (page 3)	$12,796,758	$18,514,166	
18.	Demographics Items			$5,303,158
19.	Ex-Ante (page 2)	$4,013,153	$6,593,164	
20.	Ex-Post (page 3)	$4,013,153	$6,593,164	
21.			Indicated Value *	$10,907,684
	Integrated, Excluding Wholesale Selected Transactions Companies (N = 8)			
22.	Asset Items			$16,192,481
23.	Ex-Ante (page 2)	$15,862,881	$20,589,693	
24.	Ex-Post (page 3)	$13,887,822	$14,429,528	
25.	Demographics Items			$9,044,495
26.	Ex-Ante (page 2)	$9,554,620	$8,534,370	
27.	Ex-Post (page 3)	$9,554,620	$8,534,370	
28.			Indicated Value *	$12,618,488

Conclusion of Selected Transactions Method Valuation

		Indicated Values	Weight	
29.	All Selected Transactions Companies	$12,612,444	0%	$0
30.	Mostly Collection/Distribution Transactions	10,907,684	100%	10,907,684
31.	Conclusion Before Market Adjustment			10,907,684
32.	Market Adjustment			95%
33.			Conclusion	$10,362,300

* - Indicated Value based on weighting of 50% Asset Items and 50% Demographics Items

Selected Transactions Method - Ex-Ante
For East Coventry Township Wastewater System Assets
Based on 2016 - 2023 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
Muni Auth Borough of Shenandoah Water System Assets	W	INT	$12,000,000	$13,119,705	$21,134,020	$11,252,247	$1,990,000	$245,000	($84,731)	2,899	6,166
Butler Area Sewer Authority	WW	INT	$231,500,000	$74,049,964	$138,491,270	$58,390,335	$12,258,500	$6,064,530	$2,330,186	14,699	52,499
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							
East Coventry Township Wastewater System Assets			$0	$11,798,761	$8,696,753	$961,710	$643,502	$445,607	830	2,945

			Subject Company's Selected Transactions Multiples Valuations							
Municipal Authority of the City of Mckeesport	WW	INT	$13,063,231	$0	$20,130,045	$18,379,945	$11,498,203	$16,242,117	$18,237,283	$10,131,455	$9,886,804
New Garden Township/Authority's WW System's Assets	WW	INT	$13,533,848	$0	$13,393,067	$14,278,937	$12,546,111	$20,920,870	$26,309,852	$13,633,073	$7,188,871
Limerick Township Wastewater System's Assets	WW	INT	$16,142,850	$0	$14,562,481	$18,085,273	$16,344,897	$19,425,787	$37,449,724	$11,509,047	$11,765,587
Steelton Borough (Water) Authority	W	INT	$9,362,479	NA	NA	NA	NA	NA	NA	$7,554,612	$11,170,347
Exeter Township Wastewater System Assets	WW	INT	$10,695,168	NA	NA	NA	$11,934,681	$13,253,940	$9,177,979	$8,869,101	$10,240,139
Kane Borough Authority Wastewater System	WW	INT	$14,635,898	$0	$10,223,379	$17,163,281	$11,776,769	$16,500,288	$43,071,338	$7,218,821	$11,133,305
Borough of Royersford Wastewater System Assets	WW	INT	$15,791,398	$0	$22,284,078	$24,871,376	$14,486,941	$29,837,975	$20,661,955	$6,760,652	$7,428,211
Muni Auth Borough of Shenandoah Water System Assets	W	INT	($81,297)	$0	$6,699,394	$9,274,684	$5,799,256	$31,518,457	($63,109,267)	$3,435,667	$5,731,430
Butler Area Sewer Authority	WW	INT	$20,907,148	$0	$19,722,638	$34,479,993	$18,161,754	$24,564,257	$44,270,272	$13,071,978	$12,986,295
York City Sewer Authority Wastewater System Assets	WW	INT	$14,176,988	$0	$22,980,566	$26,004,279	$9,171,713	$15,494,475	$17,024,690	$14,188,550	$8,551,632
Sadsbury Township Wastewater Utility	WW	C/D	$7,384,268	NA	NA	NA	NA	NA	NA	$7,692,886	$7,075,649
East Bradford Township Wastewater System Assets	WW	C/D	$19,733,307	$0	NA	NA	$4,253,954	$64,603,429	$44,736,049	$3,325,321	$1,481,090
Township of Mahoning Water System Assets	W	C/D	$11,156,478	NA	NA	NA	$6,040,276	$20,056,138	$23,066,584	$3,313,562	$3,305,829
Township of Mahoning Sewer System Assets	WW	C/D	($3,292,773)	NA	NA	NA	$3,841,182	($17,667,391)	($8,690,496)	$2,725,786	$3,327,054
Cheltenham Township Wastewater System Assets	WW	C/D	$5,067,765	NA	NA	NA	$5,201,650	$7,175,935	$4,969,132	$4,081,368	$3,910,738
East Norriton Township Wastewater System Assets	WW	C/D	$8,539,992	$0	NA	NA	$6,083,105	$22,051,148	$15,269,797	$3,509,867	$4,326,035
Valley Township Water System Assets	W	C/D	$23,593,964	NA	NA	NA	$10,084,498	$59,890,869	$41,472,734	$3,642,750	$2,878,970
Valley Township Wastewater System Assets	WW	C/D	($4,621,902)	NA	NA	NA	$4,889,236	($21,971,820)	($15,214,864)	$3,705,120	$5,482,817
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	$9,041,694	NA	$10,606,687	$10,354,266	$9,580,575	$10,301,987	$7,133,835	$7,991,947	$7,322,559
Lower Makefield Township Wastewater System Assets	WW	C/D	$7,865,596	$0	NA	$26,200,890	$5,090,484	$8,413,206	$6,707,872	$3,944,938	$4,701,780
Willistown Township Wastewater Systems Assets	WW	C/D	($95,182,774)	$0	$23,805,083	$31,139,065	$7,833,308	$37,838,079	($873,005,282)	$6,331,735	$4,595,818
East Whiteland Township Wastewater System Assets	WW	C/D	$12,581,013	$0	$13,315,529	$13,991,249	$12,205,806	$18,196,448	$20,244,099	$11,705,237	$10,989,732

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 East Coventry Township Wastewater System Assets
Based on 2016 - 2023 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

			Ex-Post Selected Transactions' Metrics								
Name	Service	System	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
Muni Auth Borough of Shenandoah Water System Assets	W	INT	$12,000,000	$13,119,705	$19,380,636	$10,784,743	$1,990,000	$245,000	($84,731)	2,899	6,166
Butler Area Sewer Authority	WW	INT	$231,500,000	$74,049,964	$143,771,330	$93,409,083	$12,258,500	$6,064,530	$2,330,186	14,699	52,499
York City Sewer Authority Wastewater System Assets	WW	INT	$235,000,000	$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							
East Coventry Township Wastewater System Assets			$0	$11,798,761	$8,696,753	$961,710	$643,502	$445,607	830	2,945

			Ex-Post Subject Company's Selected Transactions Multiples Valuations							
Municipal Authority of the City of Mckeesport	WW	INT	$12,492,824	$0	$17,006,191	$16,940,542	$11,498,203	$16,242,117	$18,237,283	$10,131,455	$9,886,804
New Garden Township/Authority's WW System's Assets	WW	INT	$13,404,686	$0	$12,821,503	$13,817,211	$12,546,111	$20,920,870	$26,309,852	$13,633,073	$7,188,871
Limerick Township Wastewater System's Assets	WW	INT	$15,575,567	$0	$13,958,433	$14,151,060	$16,344,897	$19,425,787	$37,449,724	$11,509,047	$11,765,587
Steelton Borough (Water) Authority	W	INT	$11,432,664	NA	$13,448,500	$13,557,199	NA	NA	NA	$7,554,612	$11,170,347
Exeter Township Wastewater System Assets	WW	INT	$12,799,541	NA	$16,558,613	$19,562,337	$11,934,681	$13,253,940	$9,177,979	$8,869,101	$10,240,139
Kane Borough Authority Wastewater System	WW	INT	$13,858,056	$0	$9,854,971	$11,308,953	$11,776,769	$16,500,288	$43,071,338	$7,218,821	$11,133,305
Borough of Royersford Wastewater System Assets	WW	INT	$14,989,459	$0	$20,007,048	$20,732,892	$14,486,941	$29,837,975	$20,661,955	$6,760,652	$7,428,211
Muni Auth Borough of Shenandoah Water System Assets	W	INT	$44,721	$0	$7,305,495	$9,676,729	$5,799,256	$31,518,457	($63,109,267)	$3,435,667	$5,731,430
Butler Area Sewer Authority	WW	INT	$19,200,804	$0	$18,998,316	$21,553,560	$18,161,754	$24,564,257	$44,270,272	$13,071,978	$12,986,295
York City Sewer Authority Wastewater System Assets	WW	INT	$12,484,858	$0	$17,787,939	$17,659,865	$9,171,713	$15,494,475	$17,024,690	$14,188,550	$8,551,632
Sadsbury Township Wastewater Utility	WW	C/D	$10,620,911	NA	$14,589,542	$13,125,566	NA	NA	NA	$7,692,886	$7,075,649
East Bradford Township Wastewater System Assets	WW	C/D	$16,681,955	$0	$7,112,031	$7,943,766	$4,253,954	$64,603,429	$44,736,049	$3,325,321	$1,481,090
Township of Mahoning Water System Assets	W	C/D	$11,153,620	NA	$10,551,927	$11,741,022	$6,040,276	$20,056,138	$23,066,584	$3,313,562	$3,305,829
Township of Mahoning Sewer System Assets	WW	C/D	$1,106,810	NA	$11,400,539	$12,810,997	$3,841,182	($17,667,391)	($8,690,496)	$2,725,786	$3,327,054
Cheltenham Township Wastewater System Assets	WW	C/D	$11,945,277	NA	$29,916,302	$28,361,815	$5,201,650	$7,175,935	$4,969,132	$4,081,368	$3,910,738
East Norriton Township Wastewater System Assets	WW	C/D	$10,703,496	$0	$14,647,131	$19,740,885	$6,083,105	$22,051,148	$15,269,797	$3,509,867	$4,326,035
Valley Township Water System Assets	W	C/D	$20,483,005	NA	$12,628,693	$12,782,519	$10,084,498	$59,890,869	$41,472,734	$3,642,750	$2,878,970
Valley Township Wastewater System Assets	WW	C/D	$416,975	NA	$12,293,031	$13,735,306	$4,889,236	($21,971,820)	($15,214,864)	$3,705,120	$5,482,817
Upper Pottsgrove Township Wastewater System Assets	WW	C/D	$9,041,694	NA	$10,606,687	$10,354,266	$9,580,575	$10,301,987	$7,133,835	$7,991,947	$7,322,559
Lower Makefield Township Wastewater System Assets	WW	C/D	$8,958,381	$0	$19,539,302	$23,269,464	$5,090,484	$8,413,206	$6,707,872	$3,944,938	$4,701,780
Willistown Township Wastewater Systems Assets	WW	C/D	($99,313,562)	$0	$10,512,339	$11,385,506	$7,833,308	$37,838,079	($873,005,282)	$6,331,735	$4,595,818
East Whiteland Township Wastewater System Assets	WW	C/D	$12,844,253	$0	$14,917,056	$14,495,646	$12,205,806	$18,196,448	$20,244,099	$11,705,237	$10,989,732

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 East Coventry Township Wastewater System Assets
Based on Recent Walls Sreet Transactions Without Discount for Cost Free Capital

	East Coventry Township Wastewater System Assets's Indicated Value
Based on Recent SJW Group's Purchase of Connecticut Water Service Inc.	$15,136,467
Based on Recent Aquarion Water Company's Purchase of New England Service Company, Inc.	$13,480,651
Based on Recent Aquarion Water Company's Purchase of Torrington Water Company, Inc.	$19,843,771

Summary of Selected Transactions Method - Wall Street Transactions
For East Coventry Township 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 $*)			East Coventry Township Wastewater System Assets			
Purchase Price was: $1,106,267			East Coventry Township Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation		Indicated Value *
	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$573,223	1.93	$0	NA		
Gross PP&E	$939,050	1.18	$11,798,761	$13,899,772		
Net PP&E	$697,723	1.59	$8,696,753	$13,789,041	$13,844,406	
Revenues	$107,054	10.33	$961,710	$9,938,051		
EBITDA	$48,920	22.61	$643,502	$14,552,021		
EBIT	$32,236	34.32	$445,607	$15,292,225		$10,424,467
Customers	135,645	$8,156	830	$6,769,152		
Population	450,000	$2,458	2,945	$7,239,903	$7,004,528	
Average				$11,640,024		

	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$573,223	1.93	$0	NA		
Gross PP&E (Less "Cost Free" Capital)	$646,723	1.71	$11,798,761	$20,182,657		
Net PP&E (Less "Cost Free" Capital)	$480,521	2.30	$8,696,753	$20,021,875	$20,102,266	
Revenues	$107,054	10.33	$961,710	$9,938,051		
EBITDA	$48,920	22.61	$643,502	$14,552,021		
EBIT	$32,236	34.32	$445,607	$15,292,225		$15,136,467
Customers (Adj. "Cost Free" Capital)	93,419	$11,842	830	$9,828,901		
Population (Adj. "Cost Free" Capital)	309,914	$3,570	2,945	$10,512,438	$10,170,669	
Average				$14,332,595		

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Summary of Selected Transactions Method - Wall Street Transactions
For East Coventry Township 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.			East Coventry Township Wastewater System Assets			
Purchase Price was: $49,290,414			East Coventry Township Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation		Indicated Value *
	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$26,734,587	1.84	$0	NA		
Gross PP&E	$54,517,263	0.90	$11,798,761	$10,667,553		
Net PP&E	$36,566,790	1.35	$8,696,753	$11,722,838	$11,195,196	
Revenues	$7,994,088	6.17	$961,710	$5,929,768		
EBITDA	$2,729,953	18.06	$643,502	$11,618,688		
EBIT	$1,559,860	31.60	$445,607	$14,080,844		$8,045,207
Customers	9,515	$5,180	830	$4,299,637		
Population	26,437	$1,864	2,945	$5,490,800	$4,895,218	
Average				$9,115,732		

	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$26,734,587	1.84	$0	NA		
Gross PP&E (Less "Cost Free" Capital)	$32,535,719	1.51	$11,798,761	$17,874,688		
Net PP&E (Less "Cost Free" Capital)	$21,822,937	2.26	$8,696,753	$19,642,936	$18,758,812	
Revenues	$7,994,088	6.17	$961,710	$5,929,768		
EBITDA	$2,729,953	18.06	$643,502	$11,618,688		
EBIT	$1,559,860	31.60	$445,607	$14,080,844		$13,480,651
Customers (Adj. "Cost Free" Capital)	5,679	$8,680	830	$7,204,526		
Population (Adj. "Cost Free" Capital)	15,778	$3,124	2,945	$9,200,453	$8,202,490	
Average				$12,221,700		

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Summary of Selected Transactions Method - Wall Street Transactions
For East Coventry Township 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			East Coventry Township Wastewater System Assets			
Purchase Price was: $91,880,072						
	Subject Company Statistics	Transaction Multiple	East Coventry Township Wastewater System Assets's Company Statistics	Selected Transactions Multiples Valuation		Indicated Value *
Investor Provided Capital	$36,395,842	2.52	$0	NA		
Gross PP&E	$75,202,417	1.22	$11,798,761	$14,415,375		
Net PP&E	$48,743,673	1.88	$8,696,753	$16,393,067	$15,404,221	
Revenues	$7,835,144	11.73	$961,710	$11,277,646		
EBITDA	$3,264,018	28.15	$643,502	$18,114,176		
EBIT	$2,046,050	44.91	$445,607	$20,010,454		$11,839,599
Customers	10,125	$9,075	830	$7,531,897		
Population	30,005	$3,062	2,945	$9,018,057	$8,274,977	
Average				$13,822,953		
	Subject Company Statistics	Transaction Multiple				
Investor Provided Capital	$36,395,842	2.52	$0	NA		
Gross PP&E (Less "Cost Free" Capital)	$44,868,813	2.05	$11,798,761	$24,160,902		
Net PP&E (Less "Cost Free" Capital)	$29,082,453	3.16	$8,696,753	$27,475,615	$25,818,259	
Revenues	$7,835,144	11.73	$961,710	$11,277,646		
EBITDA	$3,264,018	28.15	$643,502	$18,114,176		
EBIT	$2,046,050	44.91	$445,607	$20,010,454		$19,843,771
Customers (Adj. "Cost Free" Capital)	6,041	$15,209	830	$12,623,844		
Population (Adj. "Cost Free" Capital)	17,902	$5,132	2,945	$15,114,724	$13,869,284	
Average				$18,396,766		

* - Indicated Value based on weighting of 50% Capital Items and 50% Demographics Items

Market Approach
East Coventry Township Wastewater System Assets
Market Approach Conclusion

	Method	Results	Wtd.
1.	Market Multiples Method	$9,286,582	50%
2.	Selected Transactions Method	10,362,300	50%
3.	Conclusion (Wtd.)	$9,824,441	
4.	Check - Wall Street Tansactions		
5.	Min	$13,480,651	
6.	Max	19,843,771	

*** - Indicated Value based on weighting of 50% Asset Items and 50% Demographics Items**

East Coventry Township Wastewater System Assets
Summary of Approach Results and
Fair Market Value Conclusion at Appraisal Date

Valuation Approach	Indicated Value	Conclusion	Consideration
Cost Approach	$19,209,967		1/3
Income Approach	17,221,801		1/3
Market Approach	9,824,441		1/3
		Conclusion $15,418,736	

WORKPAPERS

Daily Bond Yields and Key Indicators

Updated by 11 am ET with data from the previous business day. Data as of 1-May-24

Moody's Daily Long-term Corporate Bond Yield Averages

	Utilities	Industrial	Corporate
Aaa	NA	5.33	5.33
Aa	5.72	5.37	5.55
A	5.84	5.59	5.72
Baa	6.07	6.04	6.06
Avg	5.88	5.58	5.73

Index Name: S&P Municipal Bond Revenue Index

As of: 28-Jun-24

Effective date	Yield To Maturity
4/24/2024	4.36%
4/25/2024	4.40%
4/26/2024	4.40%
4/29/2024	4.38%
4/30/2024	4.39%
5/1/2024	4.38%
5/2/2024	4.37%
5/3/2024	4.33%
5/6/2024	4.32%

FED H.15

DATE	DAAA	DBAA	DGS10	DGS20	DGS30
2024-04-24	5.41	6.13	4.65	4.88	4.78
2024-04-25	5.45	6.17	4.70	4.93	4.82
2024-04-26	5.39	6.12	4.67	4.89	4.78
2024-04-29	5.35	6.08	4.63	4.86	4.75
2024-04-30	5.41	6.13	4.69	4.90	4.79
2024-05-01	5.33	6.06	4.63	4.85	4.74
2024-05-02	5.33	6.05	4.58	4.82	4.72
2024-05-03	5.27	5.99	4.50	4.75	4.66
2024-05-06	5.27	5.99	4.50	4.75	4.66

FED H.15

		AAA Corp	BAA CORP	10-yr T-bond	20-yr T-bond	30-yr T-bond
Spot	4/30/24	5.41	6.13	4.69	4.90	4.79

FED H.15		AAA Corp	BAA CORP		A Rated Utility		
	4/30/24	5.41	6.13	Spread	0.08	0.07	
Moody's Spot ===>		5.33	6.06	Moody's Spot ===>	5.84	5.84	
		0.08	0.07	Implied	5.92	5.91	5.92

Moody's Daily Long-term Corporate Bond Yield Averages

	5/1/2024	Utilities	Industrial	Corporate
Spot	Aaa	NA	5.33	5.33
	Aa	5.72	5.37	5.55
	A	5.84	5.59	5.72
	Baa	6.07	6.04	6.06
	Avg	5.88	5.58	5.73

S&P Municipal Bond Revenue Index

4/30/24 4.39%

Utilities
Aa
A **5.92**
Baa

		Decade Spread	Annual Spread
10-Year	4.69		
20-Year	4.90	0.210	0.021
30-Year	4.79	-0.110	

REVENUE BOND INDEX 4.39
10-20 Yr 0.11
20-30 Yr -0.11

4.39

30-Yr Rev Bond Est. **4.39**

Lt Debt	5.92	5.92
Prf Stk	7.59	128%
Pref Stock Est.	128%	**7.59**

	4/30/24
A-Rated Rev Bonds	**4.39**
A-Rated PU Bonds	**5.92**
A-Rated PU Pref Stk	**7.59**
30-yr T-bond	**4.79**

	SBBI	SBBI
Equity Risk Premium	7.46	7.46
Beta (Value Line Med.)	0.80	0.80
Risk Adjusted Equity Premium	5.97	5.97
Yield (RF)	4.79	4.79
Size Premium	3.95	0.00
	14.71	10.76

High 14.71
Low 10.76

0.80

12.33 Total Return SBBI 1926-2021
4.87 Income Return SBBI 1926-2021

4.79 30-yr T-bond

	Recent Market Value (Mill $)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	2,637.29	Mid-Cap	2	2.48	0.70
American Water Works Co Inc	23,830.60	Large-Cap	1	0	0.95
Artesian Resources Corp	359.27	Mico-Cap	4	6.21	0.80
California Water Service Gp	2,836.88	Mid-Cap	2	2.48	0.75
Essential Utilities, Inc.	10,005.21	Mid-Cap	2	2.48	1.00
Middlesex Water Co	903.92	Low-Cap	3	3.95	0.75
SJW Corp	1,755.17	Low-Cap	3	3.95	0.85
York Water Co	509.01	Low-Cap	3	3.95	0.80
Average	5,354.670	Mid-Cap	2	2.48	0.83
Median	2,196.230	Low-Cap	3	3.95	0.80

7/20/2024

		12/31/23					4/30/24		Book Ratios					Market Ratios			
Company Name	Ticker Symbol	LT Debt-Total Qtly	Preferred S	Minority In	Common Equity-Total-Qtly	Invested Capital-Total Qtly	Market Value-Mnthly		LTD	Pref	Equity			LTD	Pref	Equity	
AMERICAN ST.	**AWR**	917.883	0.000	0.000	776.109	1,693.992	2,637.294	AMERICA	0.542	0.000	0.458	1.000		0.258	0.000	0.742	1.000
AMERICAN WA	**AWK**	12,276.000	0.000	0.000	9,797.000	22,073.000	23,830.603	AMERICA	0.556	0.000	0.444	1.000		0.340	0.000	0.660	1.000
ARTESIAN RES	**ARTN.A**	181.054	0.000	0.000	230.397	411.451	359.274	ARTESIAN	0.440	0.000	0.560	1.000		0.335	0.000	0.665	1.000
CALIFORNIA W	**CWT**	1,067.007	0.000	3.579	1,426.733	2,497.319	2,836.882	CALIFORI	0.427	0.000	0.573	1.000		0.273	0.000	0.727	1.000
ESSENTIAL UT	**WTRG**	6,935.285	0.000	0.000	5,896.183	12,831.468	10,005.208	ESSENTIA	0.540	0.000	0.460	1.000		0.409	0.000	0.591	1.000
MIDDLESEX W	**MSEX**	369.556	2.084	0.000	422.991	794.631	903.915	MIDDLES	0.465	0.003	0.532	1.000		0.290	0.002	0.708	1.000
SJW GROUP	**SJW**	1,575.674	0.000	0.000	1,233.397	2,809.071	1,755.167	SJW GRO	0.561	0.000	0.439	1.000		0.473	0.000	0.527	1.000
THE YORK WA	**YORW**	180.639	0.000	0.000	221.178	401.817	509.007	THE YORI	0.450	0.000	0.550	1.000		0.262	0.000	0.738	1.000
									0.498	0.000	0.502		Avg	0.330	0.000	0.670	
									0.503	0.001	0.496		Med	0.313	0.001	0.687	

Assumptions:	4/30/2024
Debt Cost	5.92
Pref. Stock Cost	7.59
Equity Cost	14.71
Equity Cost	10.76

Ratio	Cost	Wt	Shield	Overall	
31.30%	5.920	1.85	0.72	1.3341312	
0.10%	7.590	0.01	1	0.00759	
68.60%	14.710	10.09	1	10.09106	
		11.95		**11.43**	**<<<<ANSWER**
31.30%	5.920	1.85	0.72	1.3341312	
0.10%	7.590	0.01	1	0.00759	
68.60%	10.758	7.38	1	7.379988	
		9.24		**8.72**	**<<<<ANSWER**

	ROE
Public Meeting held January18, 2024	9.65

DSIC Weighted Cost of Capital

Assumptions:	4/30/2024
Debt Cost	5.92
Pref. Stock Cost	7.59
DSIC Equity Cost	9.65

	Ratio	Cost	Wt	Shield	Overall	
Debt	50.30%	5.920	2.98	0.72	2.143987	
Pref	0.10%	7.590	0.01	1	0.00759	
Equity	49.60%	9.650	4.79	1	4.7864	
			7.77		**6.94**	**<<<<ANSWER**

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held January 18, 2024

Docket Number: M-2023-3044811

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

September 30, 2023

Stephen M. DeFrank, Chairman
Kimberly Barrow, Vice Chair, Abstaining
Ralph V. Yanora
Kathryn L. Zerfuss
John F. Coleman, Jr.

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]	
December 8, 2023	
Water Company Barometer Group	
	Cost Rates %
(1) Current DCF	8.19
(2) 52-Week Average DCF	7.92
(3) Average DCF	8.06
(4) Market Indicated Common Equity Cost Rate Range @ 1 standard deviation around the mean.[2]	6.83-9.28
(5) CAPM Check of DCF Reasonableness	10.62
(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]:	**9.65%**

[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.

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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	135,645	124,968	123,633
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	$ 107,054	$ 98,667	$ 96,041
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	9,720	9,800	9,772

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.

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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

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MORE FROM REUTERS

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

Q. How many customers will the acquisition add?

A. The acquisition of East Norriton will add 4,966 customers to Aqua's existing 28,000 wastewater customers. This is an increase in customers of 17.7% (or about 20%).[23]

Q. Will the acquisition increase rates for the customers to be acquired?

A. Yes. Aqua witness Packer states that he reasonably expects that rates for East Norriton customers will increase under Aqua ownership.[24] As discussed above, Aqua calculates that if the entire revenue deficiency resulting from the acquisition is applied to East Norriton Township customers, the adjusted average bill for customers using four thousand gallons per month would increase from approximately $39 per month to $52 per month, which would be a 35% rate increase.[25]

Q. Will the acquisition increase rates for existing Aqua customers?

A. Yes. Mr. Packer's testimony shows that, as a result of the acquisition, rates for existing Aqua water customers and existing Aqua wastewater customers will increase if the revenue deficiency is not fully borne by the East Norriton Township customers. Mr. Packer's schedules show estimated increases to existing total Aqua water and wastewater customers ranging from $0.17 per month to $1.66 per month ($2.04 per year to $19.92 per year).[26] If the costs were spread to only existing wastewater customers, and not water customers, the

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[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 ÷ $38.52) x 100 = 34.84%.

[26] Exhibit U, Direct Testimony of William C. Packer, Appendix A, p. 1.

Q. Describe the scope and organization of your testimony.

A. My testimony addresses the application filed by Aqua Pennsylvania Wastewater, Inc. ("Aqua" or the "Company") for the acquisition of the East Norriton Township (the "Township") wastewater collection system assets. My testimony responds to the fair market value ("FMV") approaches addressed in the testimonies of Harold Walker, III of Gannett Fleming, who sponsors the FMV appraisals commissioned by the Company, and Jerome C. Weinert, who sponsors the appraisal commissioned by the Township. I also discuss the sufficiency of the notices sent to the customers of Aqua and the Township regarding the impact on rates of the proposed acquisition.

II. EXECUTIVE SUMMARY

A. Overview

Q. Please summarizes Aqua's application in this proceeding.

A. Aqua's application proposes to acquire the Township's wastewater assets under Sections 1102 and 1329 of the Public Utility Code (the "Code"). According to Section 1329(c)(2) of the Code, the ratemaking rate base is the lesser of the negotiated purchase price and the average of two FMV appraisals. The FMV estimated by Gannett Fleming and AUS Consultants is $24.2 million and $25.1 million, respectively. The purchase price negotiated by Aqua and the Township is $21 million. Thus, the proposed rate base in the application is $21 million.

Customer List

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 (610)670-0191	43-5325-08-79- READING PA	100	A 19606	
20010.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34- READING PA	201	A 19606-3655	
20020.00	BORDIC MOBILE HOME PARK 214 BORDIC ROAD	43-5335-09-16- READING PA	200	A 19606-3605	
20030.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-10-35- READING PA	201	A 19606-3655	
20060.00	ALSACE TOWNSHIP 240 SPIES CHURCH ROAD	 READING PA	101	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 (610)779-4202	43-5327-14-42- READING PA	200	A 19606	

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. Lacis contributed to this story.)

Contact Mike Urban: 610-371-5023 or murban@readingeagle.com.

1. The collection of a DSIC prior to inclusion of the acquired assets in a base rate case;
2. The accrual of Allowance for Funds Used During Construction (AFUDC) on non-DSIC eligible post-acquisition improvements; and
3. The deferral of depreciation for book and ratemaking purposes on non-DSIC eligible post-acquisition improvements.

Q. Please briefly summarize the Acquisition Transaction that the Joint Applicants are proposing.

A. Under the terms of the Proposed Transaction, PAWC would acquire the wastewater utility assets of Kane for $17.56 million.

Q. Please describe the Kane wastewater utility.

A. Kane owns and operates a sanitary wastewater collection system that provides sanitary wastewater service to approximately 2,019 customers in Kane Borough and a portion of Westmore Township in McKean County. The breakout of Kane's customer count is: 1,847 residential, 162 commercial, 3 industrial, and 7 municipal. The $17.56 million purchase price for a wastewater utility assets serving 2,019 customers equates to a cost of approximately $8,700 per customer.

Q. Does the Application provide the terms of the Proposed Transaction?

A. Yes, the Asset Purchase Agreement ("APA") dated November 4, 2019 was included with the Application. The APA states that the purchase price is Seventeen Million, Five Hundred Sixty Thousand Dollars ($17,560,000). The Application indicates that the purchase price is based on arm's length negotiations. PAWC and Kane Borough are not affiliated with each other.

	Service Address	Customer Number	Edu Purchased	Group Code	Drainage Basin	SPA Amt	SPA Qty	SWR Amt	SWR Qty	Swr Base Amt	PEN Amt	INT Amt
3793	900 FOXMEADOW DR	12133	16	King Road	SOUTHEAST (6)	-	116,300.00	F	-	$ 1,348.80	-	-
3794	1000 FOXMEADOW DR	12134	16	King Road	SOUTHEAST (6)	-	94,400.00	F	-	$ 1,348.80	-	-
3795	1100 FOXMEADOW DR	12135	16	King Road	SOUTHEAST (6)	$ 216.44	153,200.00	F	-	$ 1,348.80	-	-
3796	1200 FOXMEADOW DR	12136	16	King Road	SOUTHEAST (6)	$ 69.15	130,400.00	F	-	$ 1,348.80	-	-
3799	1500 FOXMEADOW CIR	12139	16	King Road	SOUTHEAST (6)	$ 43.95	126,500.00	F	-	$ 1,348.80	-	-
3800	1600 FOXMEADOW CIR	12140	16	King Road	SOUTHEAST (6)	-	82,300.00	F	-	$ 1,348.80	-	-
3801	1700 FOXMEADOW CIR	12141	16	King Road	SOUTHEAST (6)	-	84,300.00	F	-	$ 1,348.80	-	-
3802	1800 FOXMEADOW CIR	12142	16	King Road	SOUTHEAST (6)	-	92,500.00	F	-	$ 1,348.80	-	-
3803	1900 FOXMEADOW DR	12143	16	King Road	SOUTHEAST (6)	-	111,200.00	F	-	$ 1,348.80	-	-
3804	2000 FOXMEADOW CIR	12144	16	King Road	SOUTHEAST (6)	$ 8.42	121,000.00	F	-	$ 1,348.80	-	-
3805	2100 FOXMEADOW CIR	12145	16	King Road	SOUTHEAST (6)	$ 160.88	144,600.00	F	-	$ 1,348.80	-	-
3806	2200 FOXMEADOW DR	12146	16	King Road	SOUTHEAST (6)	-	101,000.00	F	-	$ 1,348.80	-	-
3807	2300 FOXMEADOW DR	12147	16	King Road	SOUTHEAST (6)	$ 176.38	147,000.00	F	-	$ 1,348.80	-	-
3808	2400 FOXMEADOW CIR	12148	16	King Road	SOUTHEAST (6)	$ 94.99	134,400.00	F	-	$ 1,348.80	-	-
3809	2500 FOXMEADOW CIR	12149	16	King Road	SOUTHEAST (6)	$ 107.26	136,300.00	F	-	$ 1,348.80	-	-
161	640 N LEWIS RD	275	17	King Road	SOUTHEAST (6)	$ 1,932.95	306,700.00	F	-	$ 84.30	-	-
3674	7-27 W RIDGE PIKE/STRP ML	12005	18	King Road	SOUTHEAST (6)	$ 63.37	92,100.00	F	-	$ 927.30	-	-
3727	125 SUNSET RD	12065	18	King Road	282 GRATERFORD RD (20)	$ 1,198.45	193,000.00	F	-	$ 84.30	-	-
3772	15 KEYSTONE DR	12112	18	King Road	TRINLEY (5)	$ 2,452.98	387,200.00	F	-	$ 84.30	-	-
5199	256 SWAMP PIKE/SCHOOL	60965	18	Possum Hollow	RAVENS CLAW (18)	$ 2,015.24	334,400.00	F	-	$ 252.90	-	-
162	339 N LEWIS RD	276	19	King Road	SOUTHEAST (6)	$ 1,256.59	202,000.00	F	-	$ 84.30	-	-
3706	W RIDGE PIKE/STRIP/BANK	12039	19	King Road	SOUTH LIMERICK (3)	$ 1,373.73	272,500.00	F	-	$ 674.40	-	-
3745	542 N LEWIS RD	12084	19	King Road	TRINLEY (5)	$ 112.65	32,400.00	F	-	$ 168.60	-	-
3411	70 BUCKWALTER RD/1350/APPLEB	11737	20	King Road	SOUTHEAST (6)	$ 3,375.47	530,000.00	F	-	$ 84.30	-	-
5389	206 JONES BLVD/MICROCOAX	70011	20	Possum Hollow	BROOKE EVANS (16)	$ 14,938.23	2,319,900.00	F	-	$ 84.30	-	-
3445	70 BUCKWALTER RD/1250/TEXAS	11771	21	King Road	SOUTHEAST (6)	$ 2,419.39	382,000.00	F	-	$ 84.30	-	-
3707	22 ANCHOR PARKWAY	12040	23	King Road	SOUTHEAST (6)	$ 1,958.79	310,700.00	F	-	$ 84.30	-	-
3773	77 GRATERFORD RD	12113	23	King Road	282 GRATERFORD RD (20)	$ 1,208.14	194,500.00	F	-	$ 84.30	-	-
64	677 ELM ST	170	24	Royersford	ORCHARD TERRACE (OT)	-	12,000.00	F	-	$ 2,023.20	-	-
3863	430 W LINFIELD TRAPPE RD	12208	24	King Road	TRINLEY (5)	$ 4,782.46	747,800.00	F	-	$ 84.30	-	-
794	1101 ENTERPRISE DR	2573	28	King Road	TRINLEY (5)	$ 1,182.95	190,600.00	F	-	$ 84.30	-	-
2502	196 W RIDGE PK/FLEA MRKT	10679	29	King Road	RIDGE PIKE (10)	$ 629.07	247,000.00	F	-	$ 1,686.00	$ 1.80	-
3869	420 LINFIELD TRAPPE RD	12214	30	King Road	TRINLEY (5)	$ 852.20	139,400.00	F	-	$ 84.30	-	-
5410	14 W LIGHTCAP RD	70032	34	Possum Hollow	POSSUM HOLLOW (17)	$ 7,741.14	1,205,800.00	F	-	$ 84.30	-	-
3401	19 W LINFIELD TRAPPE RD	11727	36	King Road	SOUTHEAST (6)	$ 5,421.59	846,736.00	F	-	$ 84.30	-	-
107	475 N LEWIS RD	216	52	King Road	SOUTHEAST (6)	$ 3,921.34	614,500.00	F	-	$ 84.30	-	-
3761	88 ANCHOR PARKWAY	12101	52	King Road	SOUTHEAST (6)	$ 3,746.92	587,500.00	F	-	$ 84.30	-	-
2292	420 W LINFIELD TRAPPE RD	10357	59	King Road	TRINLEY (5)	$ 5,568.64	869,500.00	F	-	$ 84.30	-	-
167	350 S LEWIS RD	282	60	King Road	SOUTHEAST (6)	$ 3,791.50	594,400.00	F	-	$ 84.30	-	-
2465	827 N LEWIS RD	10630	80	King Road	SOUTH LIMERICK (3)	-	150,200.00	F	-	$ 6,744.00	-	-
3091	FOX RIDGE APTS	11378	97	King Road	SOUTH LIMERICK (3)	$ 2,050.04	1,043,000.00	F	-	$ 8,177.10	-	-
2685	165 W RIDGE PIKE/TRLR PK	10913	115	King Road	SOUTHEAST (6)	$ 6,018.69	1,792,000.00	F	-	$ 9,694.50	-	-
5397	EXELON LIM GEN STA	70019	137	Possum Hollow	POSSUM HOLLOW (17)	N	-	$ 8,659.75	1,348,000.00	$ 84.30	$ 1,041.07	-
5400	18 LIGHTCAP RD	70022	200	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 ("KRWWTP") 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 & JESSITA	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 & CATHERINI	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

eport Criteria:
Customer.Final bill date = {IS NULL}

5/30/18

stomer #	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				10	10
11110.01	BUSY BEAVER	23 WESNER LN	0053635505	Commercial	1.5
11139.01	MEADOWS COMM.	77 TOWER VIEW CIRCLE	0051583844	Commercial	1.5
11148.01	SHANER HOTEL GRP	43 PINE BARN PLACE	1832339361	Commercial	1.5
11170.01	HAWKINS CHEVROLET	1856 MONTOUR BLVD.	1852732193	Commercial	1.5
11439.01	GEORGE HEIM CAR WASH	1802 MONTOUR BLVD	1541551330	Commercial	1.5
Total 1.5: 5				5	5
11102.01	ATLANTIC EQUIP	15 ENTERPRISE DR	0048304212	Commercial	2
11108.01	EMMANUEL NAZARETH	1707 MONTOUR BLVD. 11108	1007034764	Commercial	2
11117.01	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				8	8
11101.01	NAILS TO TAILS GROOMING SALON	938 BLOOM RD.	1810172132	Commercial	3/4
11109.01	BROKENSHIRE 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

Commercial Water Meters
70

Residential Water Meters
1116

2" + 1 = 15 Wesner Lane added 5/24/18

Total Meters = 1186

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Appendix A-5.2

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

Appendix A-5.2

post-gazette.com
Pittsburgh Post-Gazette

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 McKeeesport 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."

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

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

Type	2015-4 GPD	2015-3 GPD	)15-2 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	20144
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	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	)15-2 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

invest in necessary capital improvements and resources, and experienced managerial and operating personnel necessary to provide safe and reliable sewer services to the residents of the TOS and surrounding areas. PAWC is currently the water provider within TOS and is the operator of TOS's System pump station.

Q. PLEASE DESCRIBE PAWC'S HISTORICAL RELATIONSHIP WITH TOS.

A. Since PAWC's acquisition of the water and wastewater assets of the City of Coatesville Authority ("CCA") in March 2001, PAWC has been the regional wastewater (and water) provider in the City of Coatesville and surrounding communities. . PAWC's treats the wastewater from the communities of Sadsbury Township, City of Coatesville, East Fallowfield Township, Caln Township, West Caln Township, Valley Township, West Sadsbury Township, Highland Township, West Brandywine Township and Parksburg Borough. TOS has been a bulk wastewater customer of PAWC since PAWC's acquisition of CCA's water and wastewater system assets. We maintain a relationship with TOS and other local municipalities by participating in local events, providing environmental and firefighting grants, offering the "H2O Assistance Program," and supporting economic growth through infrastructure improvements in the communities we serve.

Q. HOW MANY CUSTOMERS DOES THE TOS SYSTEM CURRENTLY SERVE AND HOW MANY CUSTOMERS DOES PAWC CURRENTLY SERVE?

A. As of December 31, 2016, TOS furnished wastewater services to 998 customers. This number includes 950 residential and 48 commercial customer connections. Of these

interest in discussing the potential acquisition of the System and the use of Section 1329, the fair market value approach. TOS's representatives executed the Letter of Interest on December 6 and 7, 2016 and returned it to PAWC. This "Letter of Interest" was extended through amendments on March 9, 2017, May 2, 2017, June 6, 2017, and July 5, 2017 to allow the parties to enter into a definitive agreement. Through these extensions, PAWC and TOS jointly retained the services of Herbert E. MacCombie, Jr., P.E., of Media Pennsylvania to complete the Engineer's Assessment of Tangible Assets pursuant to Section 1329. The Engineer's Assessment of Tangible Assets is included as **Schedule 1.1** of the APA and included with the UVE fair market valuation reports at **Appendix A-5**. PAWC, pursuant to Section 1329, retained the services of AUS Consultants of Greenfield Wisconsin to complete an appraisal of the System. TOS retained the services of Herbert, Rowland & Grubic, Inc. of Harrisburg, Pennsylvania to also complete an appraisal of the System. These appraisals accompany the Application at **Appendix A-5** (together with electronic working documents at **Appendix A-4**) and are included as **Schedule 2.2** of the APA. After receipt of the two appraisals and subsequent arms-length negotiations, on May 1, 2018 TOS's Board of Supervisors approved the APA, which was subsequently executed by PAWC and TOS that day too. This APA includes a negotiated purchase price of $9,250,000.

Q. CAN YOU PLEASE PROVIDE AN OVERVIEW OF THE APA?

A. Yes. The APA is attached as **Appendix A-24-a** to the Application **(PAWC Exhibit KEG-1)**. The APA sets forth the terms and conditions pursuant to which the TOS will sell, and 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
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By Steve Marroni | 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.

Subscribe

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
)33438358	Morath, Christina	Commercial	None	1	SEWER	1
)33453937	Baeder, William	Commercial	None	1	SEWER	1
)33521786	Sanders, Debra	Commercial	None	1	SEWER	1
)33757653	Advanced Auto Parts	Commercial	None	1	SEWER	1
)34016546	Nelson's Ice Cream	Commercial	None	1	SEWER	1
)34030702	Pitcher, Paul	Commercial	None	1	SEWER	1
)34083232	Beck, Katharine G	Commercial	None	1	SEWER	1
)34862572	LK Miller Properties LLC	Commercial	None	1	SEWER	1
)02939458	Fuhrman, Steve	Commercial	None	1	SEWER	1
)03198199	Sarangpur Realty LLC	Commercial	None	1	SEWER	1
)03373167	Wilhelm, Rosemarie	Commercial	None	1	SEWER	1
)04397982	Pragi Enterprises LLC	Commercial	None	1	SEWER	1
)06085025	Plank Jr, Robert E	Commercial	None	1	SEWER	1
)06197065	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
)06197096	LD Hedge Associates LLC	Commercial	None	1	SEWER	1
)07394708	Fissinger, Matthew	Commercial	None	1	SEWER	1
)07425268	Snyder, Joseph	Commercial	None	1	SEWER	1
)07461417	Varlotta, Michael	Commercial	None	1	SEWER	1
)07487679	CG Complex LLC	Commercial	None	1	SEWER	1
)07519040	Bristol Road Partners Inc.	Commercial	None	1	SEWER	1
)08908308	Superior Credit Union	Commercial	None	1	SEWER	1
)09217890	Hoff Properties LLC	Commercial	None	1	SEWER	1
)10722804	AMA Realty Properties LLC	Commercial	None	1	SEWER	1
)11184863	Attilio, Thomas	Commercial	None	1	SEWER	1
)12032330	310 Chestnut Street LLC	Commercial	None	1	SEWER	1
)13068080	Branch Banking & Trust Company	Commercial	None	1	SEWER	1
)13286185	White, Elaine & Bruce	Commercial	None	1	SEWER	1
)15089717	C&R Property Management LLC	Commercial	None	1	SEWER	1
)15089748	C&R Property Management LLC	Commercial	None	1	SEWER	1
)15292810	Preston, Aaron	Commercial	None	1	SEWER	1
)16240812	Shalom, Jan	Commercial	None	1	SEWER	1
)16276750	Copenhafer, Fay	Commercial	None	1	SEWER	1
)16612479	Donohue, Patrick R	Commercial	None	1	SEWER	1
)17470098	Lewis Group Ltd Partnership	Commercial	None	1	SEWER	1
)17961983	Qawasmy, John	Commercial	None	1	SEWER	1
)18085592	Christman, Lewis	Commercial	None	1	SEWER	1
)18305104	Tarquini Herrera, Rachel	Commercial	None	1	SEWER	1
)18888302	Florence Attilio Rental Acct.	Commercial	None	1	SEWER	1
)18888319	Attilio, Thomas	Commercial	None	1	SEWER	1
)19364687	Conigliaro, Vito	Commercial	None	1	SEWER	1
)21630875	Chesterview Apartments	Commercial	None	1	SEWER	1
)22621041	Main Street Royersford LLC	Commercial	None	1	SEWER	1
)22621096	Spring Mountain Brewing Co	Commercial	None	1	SEWER	1
)23796115	Kassam, Tashir	Commercial	None	1	SEWER	1
)26295581	JD Arnold LLC	Commercial	None	1	SEWER	1
)26393133	Ostebo, Kurt	Commercial	None	1	SEWER	1

158

Report Criteria:
Billing.Service No = 1
Customer.Customer Type = Commercial, Industrial, Residential

Report Criteria:
Billing.Service No = 1
Customer.Customer Type = Industrial, Residential

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
)28611137	Lewis Group Ltd. Partnership	Industrial	None	1	SEWER	1
)28619292	Giftwares Co Inc	Industrial	None	1	SEWER	1
)28619407	Specialty Chemical Systems Inc	Industrial	None	1	SEWER	1
)28619759	Accumetrics Limited	Industrial	None	1	SEWER	1
)28619773	Accumetrics Limited	Industrial	None	1	SEWER	1
)28620339	Nelson's Ice Cream Inc.	Industrial	None	1	SEWER	1
)28620858	American Machine & Tool Co.	Industrial	None	1	SEWER	1
)29486532	A.C. Miller Concrete Company	Industrial	None	1	SEWER	1
)29651213	Borough of Royersford	Industrial	None	1	SEWER	1
)29709754	Royersford Spring Company	Industrial	None	1	SEWER	1
)29784885	Advanced Fluid Systems Inc	Industrial	None	1	SEWER	1
		11				

Cust No	Name	Customer Type	Group Code	Service No	Description	Unit/Share
025581487	Sakal, Brian J	Residential	None	1	SEWER	1
025581852	Barbara Berman Ricci	Residential	None	1	SEWER	1
025590276	Tallman, William	Residential	None	1	SEWER	1
025596441	Tarantino, Joseph	Residential	None	1	SEWER	1
025635087	Benson, Merrill G	Residential	None	1	SEWER	1
025760044	Blamey, Chad & Katrin	Residential	None	1	SEWER	1
025762972	Whitmore, Andrew	Residential	None	1	SEWER	1
025807684	Mecca, Jessica	Residential	None	1	SEWER	1
025824139	Gerber, Jenna	Residential	None	1	SEWER	1
025859012	Creciun, Peter	Residential	None	1	SEWER	1
025869156	Seiders, Lester & Monica	Residential	None	1	SEWER	1
025879108	Chesterview Apartments	Residential	None	1	SEWER	1
025930898	US Bank NA	Residential	None	1	SEWER	1
025948684	Findley, Nicole M	Residential	None	1	SEWER	1
025987108	Craft, Elena	Residential	None	1	SEWER	1
026021179	John McDonald & Karlyn Eyre	Residential	None	1	SEWER	1
026043841	Blanche, Camile	Residential	None	1	SEWER	1
026160869	Hirst, Sharon A	Residential	None	1	SEWER	1
026161459	John Marlatt & Rebecca Gardner	Residential	None	1	SEWER	1
026204967	Niemczuk, Joseph W	Residential	None	1	SEWER	1
026223333	Weiss, Joseph	Residential	None	1	SEWER	1
026239376	C&R Property Management LLC	Residential	None	1	SEWER	1
026300278	Millard, Barry & Sheryl	Residential	None	1	SEWER	1
026310954	Nevin, Sean	Residential	None	1	SEWER	1
026326843	Davis, Jeff	Residential	None	1	SEWER	1
026340238	Jacobs, Jamie	Residential	None	1	SEWER	1
026352002	Slifer, Richard	Residential	None	1	SEWER	1
026353432	Lynch, Heather	Residential	None	1	SEWER	1
026380250	Tallman, William	Residential	None	1	SEWER	1
026381130	Stem, Matt & Heather	Residential	None	1	SEWER	1
026403078	Petaccio, Andrea	Residential	None	1	SEWER	1
026630702	O'Donnell, Kaitlyn	Residential	None	1	SEWER	1
026660253	Ilyas, Asif	Residential	None	1	SEWER	1
026713911	Hernandez, S & Murphy, M	Residential	None	1	SEWER	1
026746591	Gieske and Niemann LLC	Residential	None	1	SEWER	1
026875659	Speck, Erin	Residential	None	1	SEWER	1
026880804	Raser, Randy	Residential	None	1	SEWER	1
026909682	Perez, Waldemar & Aracelis	Residential	None	1	SEWER	1
026969219	Macelwee-Todd, Lisa	Residential	None	1	SEWER	1
		1427				

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:				
22				40
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:				
7				26
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:				
3				32
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	JORGENSON, 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 APPLEGATE LN	UP Residential	1
42081601.01	RODRIGUEZ, RUTH & JUAN	1601 APPLEGATE LN	UP Residential	1
42081602.02	EGARIAN, CHRISTOPHER	1602 APPLEGATE LN	UP Residential	1
42081604.01	LAWLOR, CARL & LORETTA	1604 APPLEGATE LN	UP Residential	1
42081606.01	COHEN, SIDNEY & RUTH	1606 APPLEGATE LN	UP Residential	1
42081608.01	ROCHA, WILL & CARMEN	1608 APPLEGATE LN	UP Residential	1
42081609.01	EVANS, GARETH	1609 APPLEGATE LN	UP Residential	1
42081610.01	DUNKEL, CAROL	1610 APPLEGATE LN	UP Residential	1
42081611.02	SORG, GREGORY & TRICIA	1611 APPLEGATE LN	UP Residential	1
42081612.01	MANCINI, MICHAEL & AMIE	1612 APPLEGATE 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

Customer Number	Customer Name	Service Address	Customer Type	Units
Total 10:				
1,422				1527
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:				
6				46
Total 16:				
6				46
Grand Totals:				
1,428				1573

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}

Appendix A-5.2

https://www.pottsmerc.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 POTTSGROVE — 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, managing director of PFM, insisted during Monday's meeting that the firm "did not make a recommendation. We're not trying to sell this system."

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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.

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 high 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 septic or 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 Paretti and Renee Spaide all were permitted to speak uninterrupted, except when Schrieber spoke, thinking Paretti 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 Paretti "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 Paretti. "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 Paretti.

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"Michelle has done an outstanding job," said Slinkerd.

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Paretti pointec 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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Men's Grillin' Like a Villain Long Sleeve...

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Life is Good

Instant classics don´t just happen. We´ve spent over 20 years perfecting our original Crusher Tee, and its laid-back...

Evan Brandt
@PottstownNews on Twitter

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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Va Township

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

Billing Summary By Class

Class	# of Units	# of Accounts	Consumption charges	Fixed charges	Special charges	Unit charges	Taxes	Prior Due	Total	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

Valley Township

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

	Metered Sewer	Sewer	Trash	Water	Total
RES	0.00 1,638 $326585.47 15,718.00	0.00 1,344 $274835.00 0.00	1.00 2,741 $178743.69 0.00	0.00 1,641 $163777.78 15,740.00	1.00 3,022 $943941.94 31,458.00
SCH	0.00 2 $2026.80 169.00	0.00 1 $627.00 0.00	0.00 0 $0.00 0.00	0.00 2 $1420.30 169.00	0.00 3 $4074.10 338.00
Total	0.00 1,666 $338059.87 16,442.00	0.00 1,459 $332476.82 526.00	1.00 2,770 $180883.59 0.00	0.00 1,671 $171213.53 16,491.00	1.00 3,169 $1022633.81 33,459.00

Billing Summary By District

District	Accounts	Consumption charges	Fixed charges	Special charges	Unit charges	Total Taxes	Prior Due	Total	Consumption
	98	$31,793.07	$0.00	$0.00	$0.00	$0.00	$7,493.77	$39,286.84	1,308.00
01	227	$89,098.00	$0.00	$0.00	$0.00	$0.00	$11,780.00	$100,878.00	5,375.00
02	180	$66,337.00	$0.00	$0.00	$0.00	$0.00	$7,045.26	$73,382.26	3,734.00
03	373	$140,804.30	$0.00	$0.00	$0.00	$0.00	$12,388.59	$153,192.89	8,152.00
04	128	$45,371.52	$0.00	$0.00	$0.00	$0.00	$3,462.92	$48,834.44	2,402.00
05	79	$29,618.51	$0.00	$0.00	$0.00	$0.00	$1,527.02	$31,145.53	1,676.00
06	507	$168,878.38	$0.00	$0.00	$0.00	$0.00	-$1,009.62	$167,868.76	7,332.0
A	522	$156,120.45	$0.00	$0.00	$0.00	$0.00	$53,216.98	$209,337.43	1,346.
B	662	$191,212.44	$0.00	$0.00	$0.00	$0.00	$96,144.83	$287,357.27	1,172.0
C	364	$92,570.36	$0.00	$0.00	$0.00	$0.00	$36,930.04	$129,500.40	436.0
EF	9	$3,446.52	$0.00	$0.00	$0.00	$0.00	$91.36	$3,537.88	218.0
WC	20	$7,383.26	$0.00	$0.00	$0.00	$0.00	$311.71	$7,694.97	308.0
Grand Totals		$1,022,633.81	$0.00	$0.00	$0.00	$0.00	$229,382.86	$1,252,016.67	33,459.0

(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

Va Township

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

Billing Summary By Class

Class	# of Units	# of Accounts	Consumption charges	Fixed charges	Special charges	Unit charges	Taxes	Prior Due	Total	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
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Valley Township

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

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C	364	$92,570.36	$0.00	$0.00	$0.00	$0.00	$36,930.04	$129,500.40	436.0
EF	9	$3,446.52	$0.00	$0.00	$0.00	$0.00	$91.36	$3,537.88	218.0
WC	20	$7,383.26	$0.00	$0.00	$0.00	$0.00	$311.71	$7,694.97	308.0
Grand Totals		$1,022,633.81	$0.00	$0.00	$0.00	$0.00	$229,382.86	$1,252,016.67	33,459.0

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

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.

	York, PA Data & Demographics (As of July 1, 2020)	*Township Of Manchester Data & Demographics (As of July 1, 2020)*	*North York, PA Data & Demographics (As of July 1, 2020)*	*Township Of Spring Garden Data & Demographics (As of July 1, 2020)*	*Township Of West Manchester Data & Demographics (As of July 1, 2020)*	*West York, PA Data & Demographics (As of July 1, 2020)*	*Township Of York Data & Demographics (As of July 1, 2020)*
POPULATION							
Total Population	45,431 (100%)	19,023	2,123 (100%)	13,128	19,211	4,888 (100%)	29,228
Population in Households	44,277 (97.5%)	18,887	2,105 (99.2%)	11,033	18,869	4,888 (100.0%)	28,964
Population in Families	32,103 (70.7%)	16,281	1,537 (72.4%)	9,141	15,010	3,513 (71.9%)	23,148
Population in Group Quarters[1]	1,154 (2.5%)	136	18 (0.8%)	2,095	342	0	264
Population Density	8,583	1,198	6,961	1,941	963	9,307	1,158
Diversity Index[2]	85	39	61	30	31	57	31
INCOME							
Median Household Income	$31,354	$81,734	$43,955	$82,974	$61,253	$44,169	$68,134
Average Household Income	$43,670	$106,345	$55,262	$121,726	$76,342	$55,513	$92,430
% of Income for Mortgage[4]	11%	11%	9%	9%	12%	10%	13%
Per Capita Income	$16,097	$39,859	$21,861	$42,029	$32,321	$22,952	$39,265
Wealth Index[5]	31	139	40	190	80	40	119
HOUSING							
Total HU (Housing Units)	19,268 (100%)	7,413 (100%)	918 (100%)	4,777 (100%)	8,555 (100%)	2,143 (100%)	12,937 (100%)
Owner Occupied HU	6,444 (33.4%)	6,219 (83.9%)	438 (47.7%)	3,903 (81.7%)	6,214 (72.6%)	1,084 (50.6%)	8,495 (65.7%)
Renter Occupied HU	10,244 (53.2%)	909 (12.3%)	402 (43.8%)	605 (12.7%)	1,908 (22.3%)	937 (43.7%)	3,917 (30.3%)
Vacant Housing Units	2,580 (13.4%)	285 (3.8%)	78 (8.5%)	269 (5.6%)	433 (5.1%)	122 (5.7%)	525 (4.1%)
Median Home Value	$80,655	$208,273	$90,676	$186,383	$172,881	$108,753	$206,026
Average Home Value	$98,157	$236,145	$105,638	$251,006	$199,513	$119,373	$260,636
Housing Affordability Index[3]	159	188	227	204	162	186	147
HOUSEHOLDS							
Total Households	16,688	7,128	840	4,508	8,122	2,021	12,412
Average Household Size	2.65	2.65	2.51	2.45	2.32	2.42	2.33
Family Households	9,494	5,306	490	3,168	5,271	1,134	8,049
Average Family Size	3	3	3	3	3	3	3

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

Township Of Lower Makefield Data & Demographics (As of July 1, 2020)

POPULATION	
Total Population	33,219 (100%)
Population in Households	33,004 (99.4%)
Population in Families	29,270 (88.1%)
Population in Group Quarters[1]	215 (0.6%)
Population Density	1,859
Diversity Index[2]	31
INCOME	
Median Household Income	$150,466
Average Household Income	$195,168
% of Income for Mortgage[4]	13%
Per Capita Income	$72,302
Wealth Index[5]	302
HOUSING	
Total HU (Housing Units)	12,638 (100%)
Owner Occupied HU	10,628 (84.1%)
Renter Occupied HU	1,677 (13.3%)
Vacant Housing Units	333 (2.6%)
Median Home Value	$464,690
Average Home Value	$496,307
Housing Affordability Index[3]	153
HOUSEHOLDS	
Total Households	12,305
Average Household Size	2.68
Family Households	9,462
Average Family Size	3

On the Effective Date, Buyer shall provide a Letter of Credit in the amount of Three Million Dollars ($3,000,000) issued by PNC Bank in favor of Seller (the "Letter of Credit"), substantially in the form attached hereto as **Exhibit C**.

Section 3.02 **Escrow Amounts.**

At Closing, two escrows will be established:

(a) First, Nine Million Two Hundred Thousand Dollars ($9,200,000) of the Purchase Price shall be deposited in escrow (the "Indemnity Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of **Exhibit B-1**, by and among the Seller, the Buyer, and the Escrow Agent (the "Indemnity Escrow Agreement") to provide for Seller's post-Closing obligations pursuant to Article VIII. The Indemnity Escrow Fund shall be released in accordance with the Indemnity Escrow Agreement. After the Closing Date and notwithstanding any other provision of this Agreement, the Indemnity Escrow Fund is Buyer's sole recourse with respect to providing for Seller's post-Closing obligations pursuant to Article VIII.

(b) Second, an amount to be determined according to Section 6.05(d) to be credited at Closing against the Purchase Price shall be deposited in escrow (the "Easement Escrow Fund") with the Escrow Agent pursuant to an escrow agreement in the form of **Exhibit B-2**, by and among the Seller, the Buyer, and the Escrow Agent (the "Easement Escrow Agreement") to provide for any amounts determined in accordance with Section 6.05(d). The Easement Escrow Fund shall be released in accordance with the Easement Escrow Agreement. After the Closing Date and notwithstanding any other provision of this Agreement, the Easement Escrow Fund is Buyer's sole recourse with respect to Seller's obligations pursuant to Section 6.05(d). The Easement Escrow Agreement together with the Indemnity Escrow Agreement shall hereinafter sometimes be collectively referred to as the "Escrow Agreements".

Section 3.03. **Purchase Price and Adjustments to Purchase Price**

The purchase price for the Acquired Assets shall be Two Hundred Thirty-One Million Five Hundred Thousand Dollars ($231,500,000) (the "Purchase Price"). The Purchase Price shall be adjusted as follows:

(a) 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 the Seller is entitled to all such billings prior to the Closing Effective Time. The Parties shall cooperate to calculate an agreed upon proration of billing amounts and to credit the Purchase Price for the appropriate Party on the Closing Date. 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 3.04. **Payment of Purchase Price**

The Purchase Price shall be paid by wire transfer of immediately available funds as follows at Closing:

Walker, Harold, III

From: Duane McKee <dmckee@basapa.org>
Sent: Friday, January 27, 2023 10:54 AM
To: Walker, Harold, III; Melillo, Sydney; Wyatt, Thomas
Cc: Olesh, Matthew; Norcross, Nicole
Subject: RE: BASA

[EXTERNAL EMAIL]: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

I received this information from PAWC on Monday. The revised Act 537 plan being prepared by PAWC lists 23,211 EDU's.

Thanks for your patience while I confirmed. If you need anything else, please let me know.

Customer count:
Total active customers = 14,699
Residential = 13,617
Commercial = 915
Industrial = 31
Public = 136
(The total customer list including inactive is 15,497 but we will not be using that number in testimony or the application.)

EDUs: no mention in testimony

System flows: From Dan Hufton's testimony "The plant has a design and permitted average daily flow capacity of 10.0 million gallons per day ("MGD"), a rated maximum flow capacity of 28.0 MGD."

Duane

Duane E. McKee
Executive Director
Butler Area Sewer Authority (BASA)
100 Litman Road
Butler, PA 16001
(p) 724-282-1978 ext. 111, (f) 724-282-7656
dmckee@basapa.org

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 Date, Buyer identifies any contract to which the Seller and/or Municipality 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 and/or Municipality 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.

Section 2.07. **Seller Approval of Agreement**.

(a) The execution of this Agreement by Municipality and Buyer shall constitute a binding agreement between those two Parties, notwithstanding the absence of Seller's execution of this Agreement.

(b) Upon Seller's approval of this Agreement, Seller shall deliver an executed counterpart signature page and shall, within thirty (30) days following such approval by Seller, provide updated Disclosure Schedules with all information required to make such Disclosure Schedules accurate and complete.

(c) Unless and until Seller approves this Agreement, Municipality shall enjoy all of the rights of Seller and Municipality shall be responsible for and discharge all of the obligations of Seller under this Agreement and shall be liable for any breaches of Seller's representations, warranties and covenants 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 Twelve Million Dollars ($12,000,000) (the "Purchase Price") which shall be paid as follows at Closing:

(a) Buyer shall provide for the payment in full the total amount of Outstanding Indebtedness on account of the Purchase Price; 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 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.

Address Type	Customers	Unique EDU's	Usage	Avg. Usage	Billed EDU's	Dollars	Avg. Dollars	Non-Meter Dollars
Commercial	200	322	14,554,000	6,974	3369	197,758.01	94.76	17,118.50
Industrial	5	5	19,125,000	318,750	60	63,051.78	1,050.86	60
Public	39	41	22,861,000	53,917	448	92,992.60	219.32	1,688.48
Residential	2652	2917	95,855,419	8,949	13208	1,506,066.39	140.61	57,287.55
Unknown	3	3	1,242,000	44,357	28	6,054.92	216.25	12
Water Totals	2899	3288	153,637,419		17113	1,865,923.70		76,166.53

Water Usage Detail

Address Type	Account Status	Account #	Account Name	Service House Number	Service Street Name	Service City	Service State	Service Zip
Commercial	Active	20701200-0	CONSTANCE ANCZARSKI	312	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	20702000-7	FRANCISCO SANTANA TRONCOSO & ROBIN PEREZ	401	-401 1/2 S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	20706900-0	PAUL G JORDAN	343	-341 S WEST,109 W LR	SHENANDOAH	PA	17976
Commercial	Active	20712500-0	JOSEPH ANCZARSKI	313	S FERGUSON ST	SHENANDOAH	PA	17976
Commercial	Active	20712550-0	JOSEPH ANCZARSKI	315	S FERGUSON ST	SHENANDOAH	PA	17976
Commercial	Active	20800100-0	MARITZA PERALTA	22	W CENTRE ST	SHENANDOAH	PA	17976
Commercial	Active	20800300-0	ADOLFO LUNA	30	W CENTRE ST	SHENANDOAH	PA	17976
Commercial	Active	20800500-0	DENISE BRATHWAITE	5	S JARDIN ST, APT 3	SHENANDOAH	PA	17976
Commercial	Active	20800900-0	JENNIFER WAITHE	9	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20803900-0	VERIZON	221	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20806600-0	WALUKIEWICZ ORAVITZ	132	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20807000-1	JESSE GOMEZ	122	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20807100-0	LEROY KNAPP, JR	120	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20807300-0	FALGUNI PATEL	114	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20808500-0	VALERIE REINMILLER	30	S JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20809800-0	JAMES VEGHTE	101	-103 W CENTRE ST	SHENANDOAH	PA	17976
Commercial	Active	20810400-0	BEVERLY BLACKWOOD	14	N JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20810900-0	STEPHEN TOTH	28	N JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20811300-0	ORAVITZ FUNERAL HOME	40	N JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20813400-0	JOSE LUIZ PEREZ	108	W COAL ST 1ST FL	SHENANDOAH	PA	17976
Commercial	Active	20821400-0	KATHY BOYLE	208	N MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	20824100-0	HALINA LITTLE	33	N JARDIN ST	SHENANDOAH	PA	17976
Commercial	Active	20900700-0	ANTONIO ZAMUDIO	231	N WEST ST	SHENANDOAH	PA	17976
Commercial	Active	20920300-0	ERIDANIA PEREZ	227	W COAL ST	SHENANDOAH	PA	17976
Commercial	Active	20921500-0	ROGER BETZ	226	W COAL ST	SHENANDOAH	PA	17976
Commercial	Active	21008300-0	GRISELDA M VELEON	218	W OAK ST	SHENANDOAH	PA	17976
Commercial	Active	41104600-0	FRANK MALOCU	609	W WASHINGTON ST	SHENANDOAH	PA	17976
Commercial	Active	41123400-0	FRANK HAIGLER	413	W COAL ST-GARAGE	SHENANDOAH	PA	17976
Commercial	Active	41130550-0	ROBERT SCHLACK	630	W COAL ST	SHENANDOAH	PA	17976
Commercial	Active	41131200-0	JOSE ULLOA	645	W COAL ST	SHENANDOAH	PA	17976
Commercial	Active	41131200-0	JOSE ULLOA	645	W COAL ST	SHENANDOAH	PA	17976
Commercial	Active	41144800-0	GLOVERS HILL ATH CLU	938	W PENN ST	SHENANDOAH	PA	17976
Commercial	Active	41204800-0	HAROLL MEREGILDO	509	W CENTRE ST	SHENANDOAH	PA	17976
Commercial	Active	90100100-0	BRIAN GROSE	23	N FERGUSON ST	SHENANDOAH	PA	17976
Commercial	Active	90100120-0	JAMESTOWN TRUST	34	N FERGUSON ST	SHENANDOAH	PA	17976
Commercial	Active	90100150-0	GROSE CHIROPRACTIC P.C.	24	N MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90100200-0	OMAR VERAS	22	N MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90100500-3	FROILAN & EDELENI FABIAN	21	W OAK ST	SHENANDOAH	PA	17976
Commercial	Active	90100900-2	EDUC ZAMUDIO & FLOR ESTELA GOMEZ	116	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90101000-0	TURKEY HILL #123	128	-130 S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90101200-0	TOM GWINN	10	-16 W CHERRY ST	SHENANDOAH	PA	17976
Commercial	Active	90101400-0	MICHELE PRYZBILIK	210	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90101600-0	JOSEPH ANCZARSKI	216	-218 S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90101650-0	JOSEPH ANCZARSKI	226	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90101700-0	JOSEPH ANCZARSKI	226	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90102000-0	HANS DEIBEL	316	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90102100-0	DAVID KARPOVICH	324	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90102200-0	HAIR DESIGNS BY ROSE	330	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90102300-0	KOWALONEK'S KIELBASY	332	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90102800-4	PREETI CORPORATION	415	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90103000-0	CARROLS LLC #1047	331	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90103300-0	EDWARD BOKANAVAGE	225	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90103600-0	GR SHEN HIST SOC	201	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90104210-0	JOSEPHINE RAINIS	129	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90104500-0	MICHAEL BRESLOSKY	123	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90104600-0	THE PIZZA SHOP	121	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90104700-0	TINA LEWANDOWSKI	119	S MAIN ST, 3 APTS	SHENANDOAH	PA	17976
Commercial	Active	90104800-0	RANDALL J MISKE	117	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90104900-8	GBU IMPROVEMENTS, LLC	113	S MAIN ST	SHENANDOAH	PA	17976
Commercial	Active	90105800-1	STEPHEN KOVAL	119	E OAK ST	SHENANDOAH	PA	17976

Appendix A-5.2

PART I

Item 1. Business

This annual report on Form 10-K is a combined report being filed by two separate Registrants, American States Water Company ("AWR") and Golden State Water Company ("GSWC"). References in this report to "Registrant" are to AWR and GSWC, collectively, unless otherwise specified. GSWC makes no representations as to the information contained in this report relating to AWR and its subsidiaries, other than GSWC.

AWR makes its periodic reports, Form 10-Q and Form 10-K, and current reports, Form 8-K, and amendments to those reports, available free of charge through its website, www.aswater.com, as soon as those reports are electronically filed with or furnished to the Securities and Exchange Commission ("SEC"). Such reports are also available on the SEC's website at www.sec.gov. AWR also makes available free of charge its code of business conduct and ethics, its corporate governance guidelines, its policy for the recoupment of performance-based compensation, its insider trading policy and the charters of its Nominating and Governance Committee, Compensation Committee and Audit and Finance Committee through its website or by calling (877) 463-6297.

Overview

AWR is the parent company of GSWC, Bear Valley Electric Service, Inc. ("BVES") and American States Utility Services, Inc. ("ASUS") (and its wholly-owned subsidiaries: Fort Bliss Water Services Company ("FBWS"), Old Dominion Utility Services, Inc. ("ODUS"), Terrapin Utility Services, Inc. ("TUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS"), Fort Riley Utility Services, Inc. ("FRUS"), Bay State Utility Services LLC ("BSUS"), and Patuxent River Utility Services LLC ("PRUS")).

AWR has three reportable segments: water, electric and contracted services. Within the segments, AWR has three principal business units, water and electric service utility operations conducted through its regulated utilities GSWC and BVES, respectively, and contracted services conducted through ASUS and its subsidiaries.

GSWC is a public water utility engaged in the purchase, production, distribution and sale of water in 10 counties in the state of California. GSWC is regulated by the California Public Utilities Commission ("CPUC"). BVES is a public electric utility that distributes electricity in several San Bernardino County mountain communities in California and is also regulated by the CPUC. Additional information regarding public utility regulation is discussed in Item 7. *"Management's Discussion and Analysis of Financial Condition and Results of Operations"* under the section titled *"Regulatory Matters."*

AWR's regulated utilities served 264,093 water customers and 24,777 electric customers at December 31, 2023, or a total of 288,870 customers, compared with 263,265 water customers and 24,705 electric customers at December 31, 2022, or a total of 287,970 customers. Both GSWC's and BVES's operations exhibit seasonal trends. Although both have diversified customer bases, residential and commercial customers account for the majority of water and electric sales and revenues. Revenues derived from commercial and residential customers accounted for approximately 90% of total water and electric revenues for the years ended December 31, 2023, 2022 and 2021.

ASUS, through its subsidiaries, has contracted with the U.S. government to provide water and/or wastewater services at various military installations. ASUS 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 an initial 50-year, firm-fixed-price contract and additional firm-fixed-price contracts, task order agreements and contracts with third party prime contractors. ASUS has one subsidiary that has entered into a task order agreement with the U.S. government that has a term of 15 years. Each of the contracts with the U.S. government is subject to termination, in whole or in part, prior to the end of its term for convenience of the U.S. government or as a result of default or nonperformance by the ASUS subsidiary performing the contract. The price for each of these contracts is subject to annual economic price adjustments or task order adjustments. The contracts are also subject to 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. AWR generally guarantees performance of all of the contracts of ASUS's subsidiaries.

Table of Contents

Appendix A-5.2

AMERICAN STATES WATER COMPANY AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1 — 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. ("BVES"), and American States Utility Services, Inc. ("ASUS") (and its subsidiaries, Fort Bliss Water Services Company ("FBWS"), Old Dominion Utility Services, Inc. ("ODUS"), Terrapin Utility Services, Inc. ("TUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS"), Fort Riley Utility Services, Inc. ("FRUS"), Bay State Utility Services LLC ("BSUS"), and Patuxent River Utility Services LLC ("PRUS")). AWR and its subsidiaries may be collectively referred to as "Registrant" or "the Company." AWR, through its wholly owned subsidiaries, serves over one million people in ten states.

GSWC and BVES are both California public utilities. GSWC engages in the purchase, production, distribution and sale of water throughout California serving approximately 264,100 customers connections. BVES distributes electricity in several San Bernardino County mountain communities in California serving approximately 24,800 customers connections. The California Public Utilities Commission ("CPUC") regulates GSWC's and BVES's businesses in matters including properties, rates, services, facilities, and transactions between GSWC, BVES, and their affiliates.

ASUS, through its 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 primarily pursuant to initial 50-year, firm-fixed-price contracts with the U.S. government. 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. ASUS also from time to time performs construction services on military bases as a subcontractor or pursuant to a task order agreement.

On August 15, 2023, ASUS was awarded a new 50-year contract by the U.S. government to operate, maintain, and provide construction management services for the water distribution and wastewater collection and treatment facilities at Naval Air Station Patuxent River, a United States Navy air station located in Maryland. The initial firm-fixed-price value of the contract is estimated at $349 million over a 50-year period and is subject to annual economic price adjustments. This initial value is also subject to adjustment based on the results of a joint inventory of assets to be performed during the transition period and will be finalized during the first year of operations.

On September 29, 2023, ASUS was awarded a new 15-year contract by the U.S. government, that is different than ASUS's other existing 50-year contracts, to operate, maintain, and provide construction management services for the water distribution and wastewater collection and treatment facilities at Joint Base Cape Cod ("JBCC") located in Massachusetts. Under this contract, ASUS will have the opportunity to perform work at JBCC through the periodic issuance of task orders by the U.S. government for up to a maximum initial firm-fixed-price value of $45.0 million over a 15-year period, subject to adjustments as task orders are issued. In September 2023, the first task order was issued with a value of $2.3 million to perform an evaluation, construction and transition services that are scheduled for completion in 2024.

There is no direct regulatory oversight by the CPUC over AWR or the operations, rates or services provided by ASUS or its 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, BVES and ASUS. ASUS owns all of the outstanding common shares of its 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 and Intercompany Transactions: As discussed in Note 9, prior to AWR and GSWC entering into new separate credit agreements on June 28, 2023 that replaced AWR's previous credit agreement, AWR borrowed under its credit facility and provided funds to both GSWC and ASUS in support of their operations. Under AWR's new credit facility, AWR borrows and continues to provide funds to ASUS in support of its operations, through an intercompany borrowing agreement, and AWR (parent). The interest rate charged to ASUS is sufficient to cover AWR's interest expense under the credit facility. GSWC's new credit facility provides support for its water operations. BVES has a separate credit facility and has also issued long-term debt to support its operations.

Furthermore, GSWC, BVES and ASUS provide and/or receive various support services to and from their parent, AWR, and among themselves. GSWC allocates certain corporate office administrative and general costs to its affiliates, BVES and ASUS, using allocation factors approved by the CPUC. During the years ended December 31, 2023, 2022 and 2021, GSWC allocated to ASUS approximately $5.0 million, $5.2 million and $5.3 million, respectively, of corporate office

TEM 1. BUSINESS

The Company

With a history dating back to 1886, American Water is the largest and most geographically diverse, publicly-traded water and wastewater utility company in the United States, as measured by both operating revenues and population served. A holding company originally incorporated in Delaware in 1936, the Company employs approximately 6,500 professionals who provide drinking water, wastewater and other related services to over 14 million people in 24 states. The Company conducts the majority of its business through regulated utilities that provide water and wastewater services, collectively presented as one reportable segment, referred to as the "Regulated Businesses." The Company also operates other businesses that provide water and wastewater services to the U.S. government on military installations, as well as municipalities. Individually, these other businesses do not meet the criteria of a reportable segment in accordance with generally accepted accounting principles in the United States ("GAAP"), and are collectively presented throughout this Annual Report on Form 10-K within "Other," which is consistent with how management assesses the results of these businesses.

Throughout this Annual Report on Form 10-K, unless the context otherwise requires, references to "we," "us," "our," the "Company," and "American Water" mean American Water Works Company, Inc. and its subsidiaries, taken together as a whole. References to "parent company" mean American Water Works Company, Inc., without its subsidiaries.

Regulated Businesses

The Company's primary business involves the ownership of utilities that provide water and wastewater services to residential, commercial, industrial, public authority, fire service and sale for resale customers. The Company's utilities operate in approximately 1,700 communities in 14 states in the United States, with 3.5 million active customers in its water and wastewater networks. Services provided by the Company's utilities are subject to regulation by multiple state utility commissions or other entities engaged in utility regulation, collectively referred to as public utility commissions ("PUCs"). Federal, state and local governments also regulate environmental, health and safety, and water quality and water accountability matters. The Company reports the results of the services provided by its utilities in the Regulated Businesses segment. Operating revenues for the Regulated Businesses were $3,920 million for 2023, $3,505 million for 2022 and $3,384 million for 2021, accounting for 93%, 92% and 86%, respectively, of the Company's total operating revenues for the same periods.

Presented in the table below is a geographic summary of the Regulated Businesses' operating revenues and the number of customers the Company serves, by type of service, for and as of the year ended December 31, 2023:

	Operating Revenues (in millions)			
	Water (a)	Wastewater	Total	% of Total
Pennsylvania	$ 810	$ 155	$ 965	24.6 %
New Jersey	908	57	965	24.6 %
Missouri	430	20	450	11.5 %
Illinois	366	61	427	10.9 %
California	300	4	304	7.8 %
Total—Top Five States (b)	2,814	297	3,111	79.4 %
Other (c)	779	30	809	20.6 %
Total Regulated Businesses	$ 3,593	$ 327	$ 3,920	100.0 %

(a) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.

(b) The Company's "Top Five States" are determined based upon operating revenues.

(c) Includes the Company's utility operations in the following states: Georgia, Hawaii, Indiana, Iowa, Kentucky, Maryland, Tennessee, Virginia and West Virginia and other revenue attributable collectively to the Regulated Businesses.

Customers

The Company's Regulated Businesses have a large and geographically diverse customer base. A customer is defined as a person, business, municipality or any other entity that purchases the Company's water or wastewater services as of the last business day of a reporting period. One single customer may purchase the Company's services for use by multiple individuals or businesses. Examples of these customers are homes, apartment complexes, businesses and governmental entities.

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NOTE 12 – GEOGRAPHIC CONCENTRATION OF CUSTOMERS

Artesian Water, Artesian Water Maryland and Artesian Water Pennsylvania provide regulated 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, 2023, Artesian Water was serving approximately 95,900 customers, Artesian Water Maryland was serving approximately 2,600 customers and Artesian Water Pennsylvania was serving approximately 40 customers.

Artesian Wastewater and TESI provide regulated wastewater utility service to customers within their established service territory in Sussex County, Delaware pursuant to rates filed with and approved by the DEPSC. The number of wastewater customers served more than doubled following the acquisition of TESI in January 2022. As of December 31, 2023, Artesian Wastewater and TESI were serving approximately 8,100 customers combined including one large industrial customer.

NOTE 13 – REGULATORY PROCEEDINGS

Our water and wastewater utilities generate operating revenue from customers based on rates that are established by state public service commissions through a rate-setting process that may include public hearings, evidentiary hearings and the submission of evidence and testimony in support of the Company's requested level of rates.

We are subject to regulation by the following state regulatory commissions:

- The DEPSC regulates Artesian Water, Artesian Wastewater, and TESI.
- The MDPSC regulates both Artesian Water Maryland and Artesian Wastewater Maryland.
- The PAPUC regulates Artesian Water Pennsylvania.

Our water and wastewater utility operations are also subject to regulation under the federal Safe Drinking Water Act of 1974, or Safe Drinking Water Act, the Clean Water Act of 1972, or the Clean Water Act, and related state laws, and under federal and state regulations issued under these laws. These laws and regulations establish criteria and standards for drinking water and for wastewater discharges. Capital expenditures and operating costs required as a result of water quality standards and environmental requirements have been traditionally recognized by state regulatory commissions as appropriate for inclusion in establishing rates.

Water and Wastewater Rates

Our regulated subsidiaries periodically seek rate increases to cover the cost of increased operating expenses, increased financing expenses due to additional investments in utility plant and other costs of doing business. In Delaware, utilities are permitted by law to place rates into effect, under bond, on a temporary basis pending completion of a rate increase proceeding. Any DSIC rate in effect will be reset to zero upon implementation of a temporary increase in base rates charged to customers. The first temporary increase may be up to the lesser of $2.5 million on an annual basis or 15% of gross water sales. Should the rate case not be completed within seven months, by law, the utility may put the entire requested rate relief, up to 15% of gross water sales, in effect under bond until a final resolution is ordered and placed into effect. If any such rates are found to be in excess of rates the DEPSC finds to be appropriate, the utility must refund customers the portion found to be in excess with interest. The timing of our rate increase requests is therefore dependent upon the estimated cost of the administrative process in relation to the investments and expenses that we hope to recover through the rate increase. We can provide no assurances that rate increase requests will be approved by applicable regulatory agencies and, if approved, we cannot guarantee that these rate increases will be granted in a timely or sufficient manner to cover the investments and expenses for which we initially sought the rate increase.

Artesian Water filed an initial request with the DEPSC on April 28, 2023, further supplemented with a request filed on November 30, 2023, to implement new rates to meet a requested increase in revenue of 22.66%, or approximately $16.7 million, on an annualized basis. The actual effective increase is less than 22.66% since Artesian Water has been permitted to recover specific investments made in infrastructure through the assessment of a 7.50% DSIC. Since the DSIC rate is set to zero when temporary rates are placed into effect, customers would experience an incremental increase of 15.16%, the net of the overall 22.66% increase less the DSIC rate of 7.50% currently in effect, if the requested increase is granted in full by the DEPSC. The new rates are designed to support Artesian Water's ongoing capital improvement program and to cover increased costs of operations, including chemicals and electricity for water treatment, water quality testing, fuel, taxes, interest, labor and benefits. In accordance with applicable Delaware law, Artesian Water is permitted to implement a temporary base rate increase of 15% of gross water sales on an annual basis or $2.5 million, whichever is lower, 60 days after the application is filed. Since Artesian Water had DSIC surcharges in excess of the allowable temporary increase and imposing the temporary increase would have require DSIC to be reset to zero, Artesian Water elected not to request the initial temporary rate increase. However, since the application was not resolved within the seven-month statutory timeframe, in accordance with applicable Delaware law, Artesian Water is permitted a temporary base rate increase of up to 15% of gross water sales on an annual basis. Artesian Water filed an interim rates application, which was approved, to place into effect on November 28, 2023 a temporary base rate increase of 15% of gross water sales on an annual basis and reducing the 7.5% DSIC rate to zero, with such interim rates subject to refund, until permanent rates are determined by the DEPSC. As of December 31, 2023, no amounts were held in reserve related to the temporary base rate increase. Artesian Water's last comprehensive application for an increase in base rate charges was filed in April 2014.

Appendix A-5.2

ABOUT US

Artesian Resources

Artesian Resources began to serve customers in small communities in northern Delaware more than 115 years ago. Our mission then was the same as it is now: to provide the best quality water, environmentally friendly wastewater solutions and the best customer service.

LEARN MORE

Artesian Water Highlights

8.8 billion

gallons of water per year

Providing high quality reliable drinking water and fire protection.

301,000

people served

The oldest and largest regulated water utility on the Delmarva Peninsula

ABOUT US

FEATURED

Read the latest news, releases and thought leadership!

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Overview

California Water Service Group (Company) 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 is a holding company with 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 that 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, meter reading, and billing 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, 2023, 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 497,700 customer connections in approximately 100 California communities through 21 separate districts, which are subject to regulation by the CPUC. California water operations accounted for approximately 89.5% of our total customer connections and 90.6% of our total consolidated operating revenue in 2023.

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 Hawthorne and City of Commerce leases in operating revenue and operating expenses because we are entitled to retain all customer billings and are responsible for all operating expenses. These leases are considered "nontariffed products and services" (NTPS) by the CPUC and require a 10% revenue sharing with regulated customers.

In October of 2011, an agreement was negotiated with the City of Hawthorne to lease and operate its water system. The system, which is located near the Hermosa Redondo district, serves about half of Hawthorne's population. The capital lease agreement required an up-front $8.1 million lease deposit to the city that is being amortized over the lease term. Additionally, annual lease payments are contracted to be adjusted based on changes in rates charged to customers. Under the lease, we are responsible for all aspects of system operation and capital improvements, although title to the system and system improvements reside with the city. Capital improvements are recorded as depreciable plant and equipment and depreciated per the asset lives set forth in the agreement. In exchange, we receive all revenue from the water system, which was $12.2 million, $12.5 million, and $11.4 million in 2023, 2022, and 2021, respectively. At the end of the lease, the city is required to reimburse us for the unamortized value of capital improvements made during the term of the lease. The City of Hawthorne capital lease is a 15-year lease and expires in 2026.

In April of 2018, a renewal agreement was negotiated with the City of Commerce for us to continue to lease and to operate its water system for 15 years. Under the agreement, the operating lease requires us to pay $0.8 million per year in monthly installments. We have operated the City of Commerce water system since 1985 and are responsible for all operations, maintenance, water quality assurance, customer service programs, and financing capital improvements to provide a reliable supply of water that meets federal and state standards to customers served by the City of Commerce system. The City of Commerce retains title to the system and system improvements and remains responsible for setting its customers' water rates. We bear the risks of operation and collection of amounts billed to customers. In exchange, we receive all revenue from the water system, which was $4.2 million, $4.2 million, and $3.4 million in 2023, 2022, and 2021, respectively. The agreement allows us to request a rate change annually in order to recover costs.

Hawaii Water provides service to approximately 6,500 water and wastewater customer connections on the islands of Kauai, Maui, Oahu, and Hawaii, including several large resorts and condominium complexes. Hawaii Water's regulated customer connections are subject to the jurisdiction of the Hawaii Public Utilities Commission (HPUC). Hawaii Water accounted for 1.2% of our total customer connections and approximately 5.2% of our total consolidated operating revenue in 2023.

Washington Water provides domestic water service to approximately 38,000 customer connections in the Tacoma, Olympia, Graham, Spanaway, Puyallup, Rainier, Yelm, and Gig Harbor areas. Washington Water's utility operations are regulated by the Washington Utilities and Transportation Commission (UTC). Washington Water accounted for approximately 6.8% of our total customer connections and approximately 3.0% of our total consolidated operating revenue in 2023.

New Mexico Water provides service to approximately 11,400 water and wastewater customer connections in our Rio Communities, Rio Del Oro, Meadow Lake, Indian Hills, Squaw Valley, Elephant Butte, Morningstar, Sandia Knolls, Juan Tomas, and Cypress Gardens systems. New Mexico's regulated operations are subject to the jurisdiction of the New Mexico Public Regulation Commission (NMPRC). New Mexico Water accounted for approximately 2.0% of our total customer connections and 0.9% of our total consolidated operating revenue in 2023.

In May of 2021, Texas Water became the majority owner of BVRT Utility Holding Company (BVRT), a Texas-based utility development company owning and operating four wastewater utilities serving growing communities outside of Austin and San Antonio. Texas Water initially invested funds to enable BVRT to continue to build wastewater infrastructure and converted its investment to equity. BVRT's four wastewater utilities currently serve or are under contract to serve approximately 2,800 customer connections. On August 16, 2022, BVRT entered into a long-term water supply agreement with the Guadalupe Blanco River Authority (GBRA) that enables BVRT to receive up to 2,419 acre-feet of potable water annually (see Note 14 for more details). Texas Water accounted for approximately 0.5% of our total customer connections and 0.3% of our total consolidated operating revenue in 2023.

The state regulatory bodies governing our regulated operations are referred to as the Commissions in this annual report. Rates and operations for regulated customers are subject to the jurisdiction of the respective state's regulatory Commission. The Commissions require that water and wastewater rates for each regulated district are independently determined based on the cost of service. The Commissions are expected to authorize rates sufficient to recover normal operating expenses and allow the utility to earn a fair and reasonable return on invested capital.

We treat and distribute water and treat wastewater in accordance with accepted water utility methods. Where applicable, we hold franchises and permits in the cities and communities where we operate. The franchises and permits allow us to operate and maintain facilities in public streets and rights-of-way as necessary.

Non-Regulated Activities

Non-regulated activities consist primarily of the operation of water systems that are owned by other entities under lease agreements, leasing of communication antenna sites on our properties, and billing of optional third-party insurance programs to our residential customers.

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regulated natural gas revenues are affected by the cost of gas, higher gas costs, as well as general economic conditions, may cause customers to conserve usage, or seek alternative energy sources. In addition, higher gas costs result in an increase to our purchased gas inventory, which requires additional borrowings under credit facilities, resulting in higher interest expense.

The Company's growth in revenues over the past five years is primarily a result of its acquisition in 2020 of Peoples Natural Gas Company LLC and its affiliated companies, or the Peoples Gas Acquisition, increases in water and wastewater rates, increase in the cost of natural gas in 2021 and 2022, 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
2023	1.0%
2022	1.7%
2021	1.2%
2020	42.9%
2019	2.1%

In 2023, 2022, 2021, 2020, and 2019, our customer count increased by 5,875, 31,537, 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 2019 through 2023, our utility customer base, adjusted to exclude customers associated with utility system dispositions, increased at an annual compound rate of 13.2%. During the five year period ended December 31, 2023, our utility customer base including customers associated with utility system acquisitions and dispositions increased from 1,005,590 at January 1, 2019 to 1,857,461 at December 31, 2023.

Acquisitions and Other Growth Ventures

We believe that acquisitions will continue to be an important source of customer growth for us. We intend to continue to pursue acquisitions of government-owned and regulated water and wastewater systems that provide services in areas near our existing service territories or in new service areas. We engage in continuing activities with respect to potential acquisitions, including calling on prospective sellers, performing analyses of and due diligence on acquisition candidates, making preliminary acquisition proposals, and negotiating the terms of potential acquisitions. Further, we are also seeking other potential business opportunities, including but not limited to, partnering with public and regulated utilities to invest in infrastructure projects, growing our market-based activities by acquiring businesses that provide water and wastewater or other utility-related services, and investing in infrastructure projects.

Based on the 2021 U.S. Census American Housing Survey, approximately 89% of the U.S. population obtain their water from public or private water utility systems, and 11% of the U.S. population obtain their water from individual wells. With approximately 50,000 community water systems in the U.S. (approximately 81% of which serve less than 3,300 customers), the water industry is the most fragmented of the major utility industries (telephone, natural gas, electric, water and wastewater). The majority of these community water systems are government-owned. The nation's water systems range in size from large government-owned systems, such as the New York City water system, which serves approximately 8.5 million people, to small systems, where a few customers share a common well. In the states where we operate regulated water utilities, we believe there are over 14,000 community water systems of widely-varying size, with the majority of the population being served by government-owned water systems.

Although not as fragmented as the water industry, the wastewater industry in the U.S. also presents opportunities for consolidation. Based on the 2021 U.S. Census American Housing Survey, approximately 84% of the U.S. population relies on public or private sewer systems, and 16% of the U.S. population relies on septic tank, cesspool, or other sewer options. A majority of wastewater facilities are government-owned rather than regulated utilities. In the states where we operate regulated water utilities, we believe there are approximately 4,000 wastewater facilities in operation, with the majority of the population being served by government-owned wastewater systems.

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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 5.5 million people in Pennsylvania, Ohio, Texas, Illinois, North Carolina, New Jersey, Indiana, Virginia, and Kentucky under the Aqua and Peoples brands. One of our largest operating subsidiaries, Aqua Pennsylvania, Inc., or Aqua Pennsylvania, accounted for approximately 56% of operating revenues and approximately 68% of income for our Regulated Water segment in 2023. As of December 31, 2023, 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. Our Peoples subsidiaries provide natural gas service to approximately 744,000 customers in western Pennsylvania and Kentucky. Approximately 95% of the total number of natural gas utility customers we serve are in western Pennsylvania. The Company also operates market-based activities, conducted through its non-regulated subsidiaries, that provide utility service line protection solutions and repair services to households and gas marketing and production activities. Currently, the Company seeks to acquire businesses in the U.S. regulated sector, focusing on water and wastewater utilities and to opportunistically pursue growth ventures in select market-based activities, such as infrastructure opportunities that are supplementary and complementary to our regulated water utility businesses.

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 66% of our 2023 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 the Fortescue System, and is not physically interconnected with the Middlesex System. The Fortescue System produced less than 0.1% of our 2023 consolidated operating revenues.

Tidewater System

Tidewater, together with its wholly-owned subsidiary, Southern Shores, provides water services to approximately 59,000 retail customers for residential, commercial and fire protection purposes in over 470 separate communities

in New Castle, Kent and Sussex Counties, Delaware. The Tidewater System produced approximately 25% of our 2023 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. 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 4% of our 2023 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 2023 consolidated operating revenues.

Pinelands Wastewater provides wastewater collection and treatment services to approximately 2,500 residential customers and one municipal wastewater system in Burlington County, New Jersey. Pinelands Wastewater produced approximately 1% of our 2023 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 2032. In addition to performing day-to-day service operations, USA is responsible for 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.

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. HomeServe is a leading national provider of such home maintenance service programs. USA receives a service fee for the billing, cash collection and other administrative matters associated with HomeServe's service contracts.

USA produced approximately 2% of our 2023 consolidated operating revenues.

White Marsh

White Marsh operates or maintains water and/or wastewater systems that serve approximately 4,300 service connections under 31 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 2023 consolidated operating revenues.

Middlesex Water Company Names New President & CEO

January 23, 2024 at 4:34 PM EST

ISELIN, N.J. , Jan. 23, 2024 (GLOBE NEWSWIRE) -- Middlesex Water Company (NASDAQ: MSEX) has named Nadine Leslie as its new President & CEO effective March 1, 2024. Ms. Leslie joins Middlesex following a comprehensive search for a successor to outgoing President & CEO Dennis W. Doll, who will retire from the Company February 29, 2024. Ms. Leslie will also be appointed to the Board of Directors effective March 1, 2024.

Ms. Leslie is an accomplished leader with domestic and international experience in the Water Industry. She previously served as Chief Executive Officer of SUEZ North America from 2019 to 2022. In this capacity, she was responsible for overseeing one of North America's leading environmental companies, with revenues over $1.1 billion, providing water and recycling and recovery services to 6.6 million people in the United States and Canada. The scope of her responsibilities included 15 regulated water utilities, 65 municipal contracts through innovative public-private partnerships and the long-term asset management contracts for water storage facilities, serving more than 4,000 municipal and industrial clients.

Prior to her appointment as CEO of SUEZ North America, Ms. Leslie served as Executive Vice President - Health & Safety for the Paris-based SUEZ Group. In this capacity, she was responsible for directing and providing Health & Safety oversight to all business units of the Group. She also led the development and implementation of behavior-based safety practices, audited Health and Safety procedure implementation and compliance consistent with corporate and regulatory requirements and monitored the effectiveness of safety control measures used throughout SUEZ business units around the world.

Ms. Leslie has more than 25 years of industry experience in operations, management, compliance, client relations and due diligence. Since joining the SUEZ North America team in 2000, she has held leadership positions of increasing responsibility within the company's regulated, contract and corporate segments. She served as part of the management team at projects located in Georgia and New Jersey in 2003 before being appointed Vice President and General Manager for the regulated utility business in the Toms River, NJ division in 2006. Ms. Leslie also headed the SUEZ corporate internal audit department from 2009 until 2011 and then served as President of SUEZ North America's Environmental Services from 2011 until 2016. In this capacity, she was responsible for overseeing the operations and management of contract operations throughout the United States and Canada. This included more than 80 projects affiliated with municipal and industrial water and wastewater systems as well as two solid waste treatment facilities.

Mr. Doll will remain Chairman of the Middlesex Board of Directors through the expiration of his current term at the Annual Meeting of Shareholders on May 21, 2024. Mr. Doll has also entered into a consulting agreement with the Company to aid in a seamless transfer of leadership. The consulting agreement is effective commensurate with Mr. Doll's retirement and expires May 21, 2024.

"I and the rest of the Middlesex Board of Directors are thrilled to have Nadine join our company. Her breadth of knowledge and experience bring a fresh perspective to the numerous opportunities and challenges facing our company and our industry," said Doll. "The search committee of our Board of Directors led a very comprehensive and thoughtful recruiting process to ensure we could identify a leader to further the Company's mission to provide operational and financial excellence." added Doll.

"I am thrilled to join the Middlesex Water Company team and grateful for the trust and confidence placed in me by the Middlesex Board of Directors" said Ms. Leslie, incoming President and CEO. "I am confident with the support of our talented team and Board members, we will navigate challenges, capitalize on opportunities and create additional value for our customers and shareholders. Congratulations to Dennis on his successful tenure and I look forward to working with him during the transition period."

About Middlesex Water Company
Established in 1897, Middlesex Water Company serves as a trusted provider of life-sustaining high quality water service for residential, commercial, industrial and fire protection purposes. The Company and its subsidiaries form the Middlesex family of companies, which collectively serve a population of nearly half a million people in New Jersey and Delaware. We offer a full range of water, wastewater utility and related services including municipal and industrial contract operations and water and wastewater system technical operations and maintenance. We are focused on meeting and balancing 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.

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including, among others, our long-term strategy and expectations, the status of our acquisition program, the impact of our acquisitions, the impact of current and projected rate requests and the impact of our capital program on our environmental compliance. 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, unfavorable weather conditions, the success of certain cost-containment initiatives, changes in regulations or regulatory treatment, availability and the cost of capital, the success of growth initiatives and other factors discussed in our filings with the Securities and Exchange Commission.

Contact:
Bernadette Sohler
Middlesex Water Company
(732) 638-7549
www.middlesexwater.com

A photo accompanying this announcement is available at https://www.globenewswire.com/NewsRoom/AttachmentNg/b4612a66-d715-4904-bed5-4de6bcff634c

Source: Middlesex Water Company

Nadine Leslie

Nadine Leslie Named President and CEO of Middlesex Water Company

structure will be used for any future WISC calculations for all divisions until the Commission has authorized or approved a different return on equity structure in a different proceeding.

On February 28, 2022, MWC filed requests for general rate increases in the Camden-Rockland, Freeport, Millinocket and Oakland Divisions. On February 2, 2023, MWC received final decisions from the MPUC on four general rate cases filed in 2022. The rate increases are retroactively effective for January 1, 2023 and authorize a $0.7 million increase in annual revenues.

On June 30, 2023, MWC filed a Water Infrastructure Surcharge for the Camden-Rockland division. The requested surcharge is 2.34% or $0.2 million. The Commission is expected to issue a decision regarding the surcharge in the first quarter of 2024.

Please also see Item 1A, "Risk Factors," Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and Note 3 of "Notes to Consolidated Financial Statements."

Description of Business

General

The principal business of Water Utility Services consists of the production, purchase, storage, purification, distribution, wholesale and retail sale of water and wastewater services. SJWC provides water services to approximately 232,400 connections that serve approximately one million people over 139 square miles residing in portions of the cities of San Jose and Cupertino and in the cities of Campbell, Monte Sereno, Saratoga and in the Town of Los Gatos, and adjacent unincorporated territories, all in the County of Santa Clara in the State of California. The CTWS companies provide water service to approximately 141,000 service connections that serve a population of approximately 461,000 people in 81 municipalities with a service area of approximately 272 square miles throughout Connecticut and Maine and 3,000 wastewater connections in Southbury, Connecticut. TWC provides water service to approximately 28,000 service connections that serve approximately 83,000 people in a service area comprising more than 271 square miles in the region between San Antonio and Austin, Texas and approximately 950 wastewater connections. Together, the Water Utility Services distribute water to customers in their respective service areas in accordance with accepted water utility methods.

Water Utility Services also provide non-tariffed services under agreements with municipalities and other utilities. These non-tariffed services include water system operations, maintenance agreements and antenna site leases. In addition, in October 1997, SJWC commenced operation of the City of Cupertino municipal water system under a 25-year lease which was due to expire in September of 2022 and was amended on January 8, 2020. The system is adjacent to the SJWC service area and has approximately 4,600 service connections. Under the terms of the lease, SJWC assumed responsibility for all maintenance and operating costs of the system, while receiving all payments for water service. SJWC paid an upfront $6.8 million concession fee and an additional $5.0 million in capital improvements to the City of Cupertino. On February 25, 2022, SJWC received a letter from the City of Cupertino exercising their option to extend the term of the lease an additional two years through October 1, 2024. SJWC paid an additional $1.6 million concession fee. The total concession fees paid for the agreement are being amortized over the contract term including the extension.

CTWS provides contracted services to water utilities, as well as offers Linebacker® protection plans for public drinking water customers in the states of Connecticut and Maine. Linebacker plans cover a limited amount of the cost of repairs to water and wastewater service lines and in-home plumbing. Services provided are dependent on the selected plan.

SJW Land Company owns undeveloped real estate property in California and Tennessee, as well as commercial and warehouse properties in Tennessee. Chester Realty, Inc. owns commercial properties and parcels of land in Connecticut.

Among other things, operating results from the water business fluctuate according to the demand for water, which is often influenced by seasonal conditions, such as impact of drought, summer temperatures or the amount and timing of precipitation in Water Utility Services' service areas. Revenue, production expenses and income are affected by changes in water sales and the sources of water supply. Overhead costs, such as payroll and benefits, depreciation, interest on long-term debt, and property taxes are not significantly impacted by seasonality or water supply mix. Generally, earnings are highest in the higher demand, warm summer months and lowest in the lower demand, cool winter months. Certain regulatory mechanisms in our service areas may mitigate the effects of demand fluctuations and/or variations in water supply costs on our operating results.

Water Supply

California Water Supply

SJWC's water supply consists of groundwater from wells, surface water from watershed run-off and diversion, reclaimed water, and imported water purchased from Valley Water under the terms of a master contract with Valley Water expiring in 2051. During normal rainfall years, purchased water provides approximately 40% to 50% of SJWC's annual production. An additional 40% to 50% of its water supply is pumped from the underground basin which is subject to a groundwater extraction charge paid to Valley Water. Surface supply, which during a normal rainfall year satisfies about 6% to 8% of SJWC's annual

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. The Company is currently in compliance with standards under the Lead and Copper Rule.

The EPA has published the Lead and Copper Rule Revisions, or LCRR, that includes a requirement to submit a service line inventory and a lead service line replacement plan to the respective states or agencies by October 16, 2024, as well as provide public education and sampling at elementary schools and childcare facilities. Additionally, the EPA is developing a new regulation, the Lead and Copper Rule Improvements, or LCRI, to better protect communities from exposure to lead in drinking water. The LCRI is expected to delay the due dates for lead service line replacement plans and result in modifications to other parts of the LCRR. The Company is executing an implementation plan to comply with the initial LCRR requirement to complete a lead service line inventory and begin additional sampling.

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.

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 met with the DEP on a regular basis to review the preliminary design and discuss scheduling, permitting, and construction requirements including their concern regarding the stability of the Lake Williams spillway in light of current design standards. The Company completed the final design and the permitting process to armor the dam and replace the spillway of the Lake Williams dam and began construction in 2022. The Company completed the dam armoring and spillway replacement in 2023 at a total cost of approximately $40 million. Additional capital expenditures will be incurred in 2024 to complete the sitework around the dam and reservoir. 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 is due primarily to the acquisition of water and wastewater systems and organic growth. During the year ended December 31, 2023, the Company increased its number of customers from 76,731 to 77,893. See "Management's Discussion and Analysis – Acquisitions and Growth" for a discussion of the Company's recent acquisitions.

Appendix A-5.2

THE YORK WATER COMPANY

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 ten wastewater collection and treatment systems. The Company operates within its franchised water and wastewater territory, which covers portions of 56 municipalities within four 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 for its primary system for York and Adams Counties from both the South Branch and East Branch of the Codorus Creek, which together have an average daily flow of approximately 73.0 million gallons from a combined watershed area of approximately 117 square miles. The Company has two reservoirs on this primary system, Lake Williams and Lake Redman, which together hold up to approximately 2.2 billion gallons of water. The Company supplements these 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 obtains its water supply for its system for Franklin County from the Roxbury Dam on the Conodoguinet Creek, which has an average daily flow of approximately 26.0 million gallons from a watershed area of approximately 33 square miles. The Company has a reservoir on this system which holds up to approximately 330 million gallons of water. The Company also owns thirteen wells which are capable of providing a safe yield of approximately 808,000 gallons per day to supply water to the customers of its groundwater satellite systems in York, Adams, and Lancaster Counties. As of December 31, 2023, the Company's average daily availability was 41.0 million gallons, and average daily consumption was approximately 21.8 million gallons. The Company's service territory had an estimated population of 209,000 as of December 31, 2023. 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 precipitation. 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 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.

Table of Contents

DCED-CLGS-30 (9-09)

Received by DCED: 04/01/2021
Approved by DCED:

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
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2020 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

150335 EAST COVENTRY TWP, CHESTER COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2020

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	1,075,699	718,632	2,399,040		2,306,134					6,499,505
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)	32,882									32,882
130.00	Due From Other Funds	77,933									77,933
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		1,186,514	718,632	2,399,040		2,306,134					6,610,320
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities										
230.00	Due To Other Funds		5,480			72,453					77,933

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2020

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits	224,544									224,544
Total Liabilities and Other Credits		224,544	5,480			72,453					302,477
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
280-289	Fund Balance / Retained Earnings on 12/31	961,970	713,152	2,399,040		2,233,681					6,307,843
291-299	Other Equity										
Total Fund and Account Group Equity		961,970	713,152	2,399,040		2,233,681					6,307,843
TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY											6,610,320

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	1,166,525							1,166,525
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	33,729							33,729
310.10	Real Estate Transfer Taxes	245,178							245,178
310.20	Earned Income Taxes / Wage Taxes	1,306,411		642,495					1,948,906
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	58,290							58,290
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other: _____								
	Other: _____								
Total Taxes		2,810,133		642,495					3,452,628
Licenses and Permits									
320-322	All Other Licenses and Permits	15,458							15,458
321.80	Cable Television Franchise Fees	133,173							133,173
Total Licenses and Permits		148,631							148,631
Fines and Forfeits									
330-332	Fines and Forfeits	11,035							11,035
Total Fines and Forfeits		11,035							11,035

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	1,276	2,893	12,526		7,181			23,876
342.00	Rents and Royalties	20,801							20,801
Total Interest, Rents and Royalties		22,077	2,893	12,526		7,181			44,677
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants			47,907					47,907
355.01	Public Utility Realty Tax (PURTA)	2,590							2,590
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		292,534						292,534
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	113,248							113,248
355.07	Foreign Fire Insurance Tax Distribution	43,643							43,643
355.08	Local Share Assessment/Gaming Proceeds								
355.09	Marcellus Shale Impact Fee Distribution								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		159,481	292,534	47,907					499,922
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	39,711		2,500					42,211
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		39,711		2,500					42,211
Charges for Service									
361.00	General Government	135,373							135,373
362.00	Public Safety	135,029							135,029
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	10,890							10,890
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					1,010,162			1,010,162
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	3,246							3,246
368.00	Airports								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		284,538				1,010,162			1,294,700
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	17,497							17,497
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	24,716				415			25,131
Total Unclassified Operating Revenues		42,213				415			42,628
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	27,001		18,440					45,441
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	26,849							26,849
Total Other Financing Sources		53,850		18,440					72,290
TOTAL REVENUES		3,571,669	295,427	723,868		1,017,758			5,608,722
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	32,834	2,142						34,976
401.00	Executive (Manager or Mayor)	187,112							187,112
402.00	Auditing Services / Financial Administration	110,564							110,564
403.00	Tax Collection	64,885							64,885
404.00	Solicitor / Legal Services	164,149							164,149
405.00	Secretary / Clerk								
406.00	Other General Government Administration	117,341							117,341
407.00	IT-Networking Services-Data Processing	10,062							10,062
408.00	Engineering Services	174,364							174,364
409.00	General Government Buildings and Plant	43,987							43,987
Total General Government		905,298	2,142						907,440
Public Safety									
410.00	Police	1,252,283							1,252,283
411.00	Fire	87,359							87,359
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	96,359							96,359

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
414.00	Planning and Zoning	87,741							87,741
415.00	Emergency Management and Communications	138							138
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		1,523,880							1,523,880
Health and Human Services									
420.00-425.00	Health and Human Services	10,572							10,572
Total Health and Human Services		10,572							10,572
Public Works - Sanitation									
426.00	Recycling Collection and Disposal								
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					290,937			290,937
Total Public Works - Sanitation						290,937			290,937
Public Works - Highways and Streets									
430.00	General Services - Administration	529,223		19,581					548,804
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	10,497							10,497
433.00	Traffic Control Devices		39,851						39,851
434.00	Street Lighting								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Public Works - Highways and Streets									
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains		1,460						1,460
437.00	Repairs of Tools and Machinery		17,038						17,038
438.00	Maintenance and Repairs of Roads and Bridges		40,412	35,560					75,972
439.00	Highway Construction and Rebuilding Projects		181,104	393,814					574,918
Total Public Works - Highways and Streets		539,720	279,865	448,955					1,268,540
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation	92,000							92,000
453.00	Spectator Recreation	18,134							18,134
454.00	Parks								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Culture and Recreation									
455.00	Shade Trees								
456.00	Libraries								
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
	Total Culture and Recreation	110,134							110,134
Community Development									
461.00	Conservation of Natural Resources			945,914					945,914
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development	322							322
	Total Community Development	322		945,914					946,236
Debt Service									
471.00	Debt Principal (short-term and long-term)	50,400		138,593		270,000			458,993
472.00	Debt Interest (short-term and long-term)	4,590		5,708		173,573			183,871
475.00	Fiscal Agent Fees								
	Total Debt Service	54,990		144,301		443,573			642,864
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	10,012							10,012
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	117,038							117,038

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2020

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
484.00	Worker Compensation Insurance								
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		127,050							127,050
Insurance									
486.00	Insurance, Casualty, and Surety	37,144							37,144
Total Insurance		37,144							37,144
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures	30,627							30,627
Total Unclassified Operating Expenditures		30,627							30,627
Other Financing Uses									
491.00	Refund of Prior Year Revenues	19,746							19,746
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses		19,746							19,746
TOTAL EXPENDITURES		3,359,483	282,007	1,539,170		734,510			5,915,170
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		212,186	13,420	-815,302		283,248			-306,448

EAST COVENTRY TWP

December 31, 2020

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Bank Loan	Note	2011	2021	380,000	83,680		42,675		41,005		41,005
General Obligation Note	Note	2004	2024	1,000,000	229,423		50,400		179,023		179,023
Bank Loan	Note	2011	2021	850,000	194,837		95,918		98,919		98,919
General Obligation Bonds	Bond	2015	2037	6,495,000	6,110,000		270,000		5,840,000		5,840,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) excludes unamortized premium/discount

Total bonds and notes outstanding	6,158,947
Capitalized lease obligations	0
Net debt	6,158,947

EAST COVENTRY TWP, CHESTER County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2020

Category	Capital Purchases	Capital Construction	Total
Community Development			
Electric			
Fire			
Gas System			
General Government		35,560	35,560
Health			
Housing			
Libraries			
Mass Transit			
Parks	894,879		894,879
Police			
Recreation			
Sewer	7,395		7,395
Solid Waste			
Streets / Highways	252,898	322,020	574,918
Water			
Other: _____			
TOTAL CAPITAL EXPENDITURES	1,155,172	357,580	1,512,752

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials)	1,569,197

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Christoher M Turtell Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

December 31, 2020

NOTES / COMMENTS

The Township has two defined benefit pension plans administered through the Pennsylvania Municipal Retirement System (PMRS). The plans are not included on this report because they do not meet the definition of a fiduciary activity. The Township contributed $78,636 to its police pension plan and $38,402 to its nonuniformed plan during 2020.

Included in the fund balance of the general fund is $95,863 assigned for future benefit payments at retirement.

DCED-CLGS-30 (9-09)

Received by DCED: 04/01/2022
Approved by DCED:

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2021 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

150335 EAST COVENTRY TWP, CHESTER COUNTY

Herbein + Company, Inc.
2763 Century Boulevard
Reading, PA 19610
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INDEPENDENT AUDITOR'S REPORT

Township Supervisors
East Coventry Township
Pottstown, Pennsylvania

President Judge of the Court of Common Pleas

Secretary of the Department of Community and Economic Development

Opinion

We have audited the accompanying balance sheet - modified cash basis of East Coventry Township ("the Township"), Pennsylvania, as of December 31, 2021 and the related statement of revenues and expenditures - modified cash basis, debt statement - modified cash basis, and statement of capital expenditures - modified cash basis for the year then ended.

In our opinion, the financial statements referred to above present fairly, in all material respects, the modified cash basis - financial position of East Coventry Township as of December 31, 2021, and the modified cash basis - revenues, expenditures, and changes in financial position, modified cash basis - debt statement, and modified cash basis - capital expenditures for the year then ended in accordance with the financial reporting provisions of the Department of Community and Economic Development of the Commonwealth of Pennsylvania.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of East Coventry Township, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Basis of Accounting

The financial statements are prepared by East Coventry Township, in accordance with the financial reporting provisions of the Department of Community and Economic Development of the Commonwealth of Pennsylvania under the modified cash basis, which is a basis of accounting other than accounting principles generally accepted in the United States of America to meet the requirements of the Department of Community and Economic Development of the Commonwealth of Pennsylvania. As a result, the financial statements may not be suitable for another purpose. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the financial reporting provisions of the Department of Community and Economic Development of the Commonwealth of Pennsylvania. Management is also responsible for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about East Coventry Township's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of East Coventry Township's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about East Coventry Township's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Restriction on Use

This report is intended solely for the information and use of management, the Board of Supervisors, President Judge of the Court of the Common Pleas, and the Secretary of the Department of Community and Economic Development, and is not intended to be, and should not be, used by anyone other than these specified parties.

Reading, Pennsylvania
April 1, 2022

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2021

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	1,761,822	657,721	3,296,779		2,523,691					8,240,013
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds	140,966									140,966
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits										
Total Assets and Other Debits		1,902,788	657,721	3,296,779		2,523,691					8,380,979
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities										
230.00	Due To Other Funds					140,966					140,966

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2021

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits	302,066									302,066
Total Liabilities and Other Credits		302,066				140,966					443,032
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	1,600,722	657,721	3,296,779		2,382,725					7,937,947
291-299	Other Equity										
Total Fund and Account Group Equity		1,600,722	657,721	3,296,779		2,382,725					7,937,947
TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY											8,380,979

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	1,200,150							1,200,150
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	34,806							34,806
310.10	Real Estate Transfer Taxes	426,006							426,006
310.20	Earned Income Taxes / Wage Taxes	1,464,121		714,500					2,178,621
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	60,232							60,232
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other: _____								
	Other: _____								
Total Taxes		3,185,315		714,500					3,899,815
Licenses and Permits									
320-322	All Other Licenses and Permits	6,675							6,675
321.80	Cable Television Franchise Fees	130,215							130,215
Total Licenses and Permits		136,890							136,890
Fines and Forfeits									
330-332	Fines and Forfeits	12,881							12,881
Total Fines and Forfeits		12,881							12,881

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	840	728	2,626		2,157			6,351
342.00	Rents and Royalties	9,850							9,850
Total Interest, Rents and Royalties		10,690	728	2,626		2,157			16,201
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements	353,363							353,363
353.00	Federal Payments in Lieu of Taxes								
Total Federal		353,363							353,363
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	2,804							2,804
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		272,883						272,883
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	115,135							115,135
355.07	Foreign Fire Insurance Tax Distribution	39,180							39,180
355.08	Local Share Assessment/Gaming Proceeds								
355.09	Marcellus Shale Impact Fee Distribution								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		157,119	272,883						430,002
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	1,799		42,739					44,538
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		1,799		42,739					44,538
Charges for Service									
361.00	General Government	236,773							236,773
362.00	Public Safety	104,546							104,546
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	5,660							5,660
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					875,996			875,996
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	500							500
368.00	Airports								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		347,479				875,996			1,223,475
Unclassified Operating Revenues									
383.00	Special Assessments		10,226						10,226
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	775							775
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	8,536							8,536
Total Unclassified Operating Revenues		9,311	10,226						19,537
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	6,670							6,670
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt			1,415,256		5,986,666			7,401,922
394.00	Proceeds of Short Term-Debt								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	15,486							15,486
Total Other Financing Sources		22,156		1,415,256		5,986,666			7,424,078
TOTAL REVENUES		4,237,003	283,837	2,175,121		6,864,819			13,560,780
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	21,286							21,286
401.00	Executive (Manager or Mayor)	192,909							192,909
402.00	Auditing Services / Financial Administration	118,407							118,407
403.00	Tax Collection	63,251							63,251
404.00	Solicitor / Legal Services	207,436							207,436
405.00	Secretary / Clerk								
406.00	Other General Government Administration	130,123							130,123
407.00	IT-Networking Services-Data Processing	18,053							18,053
408.00	Engineering Services	199,456							199,456
409.00	General Government Buildings and Plant	96,231							96,231
Total General Government		1,047,152							1,047,152
Public Safety									
410.00	Police	1,336,952							1,336,952
411.00	Fire	93,934							93,934
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	81,404							81,404

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
414.00	Planning and Zoning	72,608							72,608
415.00	Emergency Management and Communications								
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		1,584,898							1,584,898
Health and Human Services									
420.00-425.00	Health and Human Services	14,218							14,218
Total Health and Human Services		14,218							14,218
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	18,000							18,000
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					314,980			314,980
Total Public Works - Sanitation		18,000				314,980			332,980
Public Works - Highways and Streets									
430.00	General Services - Administration	508,789	28,828	8,670					546,287
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	49,731							49,731
433.00	Traffic Control Devices		34,895						34,895
434.00	Street Lighting								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Public Works - Highways and Streets									
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains		5,019						5,019
437.00	Repairs of Tools and Machinery		16,119						16,119
438.00	Maintenance and Repairs of Roads and Bridges		254,407	18,318					272,725
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		558,520	339,268	26,988					924,776
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation	74,613							74,613
453.00	Spectator Recreation								
454.00	Parks								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Culture and Recreation									
455.00	Shade Trees								
456.00	Libraries								
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		74,613							74,613
Community Development									
461.00	Conservation of Natural Resources			1,117,330					1,117,330
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development	100							100
Total Community Development		100		1,117,330					1,117,430
Debt Service									
471.00	Debt Principal (short-term and long-term)	50,400		131,355		6,115,000			6,296,755
472.00	Debt Interest (short-term and long-term)	3,082		1,709		165,289			170,080
475.00	Fiscal Agent Fees					120,506			120,506
Total Debt Service		53,482		133,064		6,400,795			6,587,341
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	10,168							10,168
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	157,935							157,935

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2021

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
484.00	Worker Compensation Insurance								
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		168,103							168,103
Insurance									
486.00	Insurance, Casualty, and Surety	45,580							45,580
Total Insurance		45,580							45,580
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures	33,585							33,585
Total Unclassified Operating Expenditures		33,585							33,585
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		3,598,251	339,268	1,277,382		6,715,775			11,930,676
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		638,752	-55,431	897,739		149,044			1,630,104

EAST COVENTRY TWP

December 31, 2021

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
Bank Loan	Note	2011	2021	380,000	41,005		41,005		0		0
General Obligation Note	Note	2004	2024	1,000,000	179,023		50,400		128,623		128,623
Bank Loan	Note	2011	2021	850,000	98,919		90,350		8,569		8,569
General Obligation Bonds	Bond	2015	2037	6,495,000	5,840,000		5,840,000		0		0
General Obligation Bonds - 2021	Bond	2021	2041	7,105,000	0	7,105,000	275,000		6,830,000		6,830,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	6,967,192
Capitalized lease obligations	0
Net debt	6,967,192

EAST COVENTRY TWP, CHESTER County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2021

Category	Capital Purchases	Capital Construction	Total
Community Development			
Electric			
Fire			
Gas System			
General Government		18,318	18,318
Health			
Housing			
Libraries			
Mass Transit			
Parks	1,020,715		1,020,715
Police	28,883		28,883
Recreation			
Sewer			
Solid Waste			
Streets / Highways			
Water			
Other: _____			
TOTAL CAPITAL EXPENDITURES	1,049,598	18,318	1,067,916

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials)	1,610,303

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Christopher Turtell Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

December 31, 2021

NOTES / COMMENTS

The Township has two defined benefit pension plans administered through the Pennsylvania Municipal Retirement System (PMRS). The plans are not included on this report because they do not meet the definition of a fiduciary activity. The Township contributed $97,238 to its police pension plan and $60,697 to its nonuniformed plan during 2021.

Included in the fund balance is a grant of $353,363 received from the State and Local Fiscal Recovery Funds for the American Rescue Plan Act.

Included in the fund balance of the general fund is $103,400 assigned for future benefit payments at retirement.

DCED-CLGS-30 (9-09)

Received by DCED: 05/15/2023
Approved by DCED:

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2022 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

150335 EAST COVENTRY TWP, CHESTER COUNTY

Herbein
CPAs + Advisors

Herbein + Company Inc.
2763 Century Boulevard
Reading, PA 19610
www.herbein.com I 610.378.1175

INDEPENDENT AUDITOR'S REPORT

Township Supervisors
East Coventry Township
Pottstown, Pennsylvania

President Judge of the Court of Common Pleas

Secretary of the Department of Community and Economic Development

Opinion

We have audited the accompanying modified cash basis financial statements of East Coventry Township ("the Township"), Pennsylvania, which comprise the balance sheet as of December 31, 2022, and the related statement of revenues and expenditures, debt statement, and statement of capital expenditures for the year then ended in the format prescribed by the Department of Community and Economic Development of the Commonwealth of Pennsylvania.

In our opinion, the financial statements referred to above present fairly, in all material respects, the modified cash basis financial position of East Coventry Township as of December 31, 2022, and the changes in the modified cash basis financial position and related debt statement and statement of capital expenditures for the year then ended in accordance with the financial reporting provisions of the modified cash basis of accounting within the format prescribed by the Department of Community and Economic Development of the Commonwealth of Pennsylvania.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of East Coventry Township, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Basis of Accounting

The financial statements are prepared on the modified cash basis of accounting within the format prescribed by the Department of Community and Economic Development of the Commonwealth of Pennsylvania, which is a basis of accounting other than accounting principles generally accepted in the United States of America. Consequently, revenues are recognized when received rather than when earned and expenditures are recognized when paid rather than when the liability is incurred. In addition, the Township does not include footnote disclosures. As a result, the financial statements may not be suitable for another purpose. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the modified cash basis of accounting within the financial reporting provisions of the Department of Community and Economic Development of the Commonwealth of Pennsylvania, and for determining that the modified cash basis of accounting is an acceptable basis for preparation of the financial statements in the circumstances. Management is also responsible for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about East Coventry Township's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of East Coventry Township's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about East Coventry Township's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Restriction on Use

This report is intended solely for the information and use of management, the Board of Supervisors, President Judge of the Court of the Common Pleas, and the Secretary of the Department of Community and Economic Development, and is not intended to be, and should not be, used by anyone other than these specified parties.

Herbein + Company, Inc.

Reading, Pennsylvania
May 15, 2023

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2022

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	2,955,286	619,227	3,795,557		3,094,732					10,464,802
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)	9,051				185					9,236
130.00	Due From Other Funds	4,115									4,115
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits		74								74
Total Assets and Other Debits		2,968,452	619,301	3,795,557		3,094,917					10,478,227
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities										
230.00	Due To Other Funds					4,115					4,115

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2022

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits	830,451									830,451
Total Liabilities and Other Credits		830,451				4,115					834,566
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
280-289	Fund Balance / Retained Earnings on 12/31	2,138,001	619,301	3,795,557		3,090,802					9,643,661
291-299	Other Equity										
Total Fund and Account Group Equity		2,138,001	619,301	3,795,557		3,090,802					9,643,661
TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY											10,478,227

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Taxes									
301.00	Real Estate Taxes	1,217,750							1,217,750
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	34,464							34,464
310.10	Real Estate Transfer Taxes	333,331							333,331
310.20	Earned Income Taxes / Wage Taxes	1,561,010		760,548					2,321,558
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	69,334							69,334
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other: _____								
	Other: _____								
Total Taxes		3,215,889		760,548					3,976,437
Licenses and Permits									
320-322	All Other Licenses and Permits	3,354							3,354
321.80	Cable Television Franchise Fees	129,311							129,311
Total Licenses and Permits		132,665							132,665
Fines and Forfeits									
330-332	Fines and Forfeits	11,182							11,182
Total Fines and Forfeits		11,182							11,182

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	7,356	3,008	17,206		9,872			37,442
342.00	Rents and Royalties	13,271							13,271
Total Interest, Rents and Royalties		20,627	3,008	17,206		9,872			50,713
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements	355,598							355,598
353.00	Federal Payments in Lieu of Taxes								
Total Federal		355,598							355,598
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	3,082							3,082
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		279,144						279,144
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	119,150							119,150
355.07	Foreign Fire Insurance Tax Distribution	49,788							49,788
355.08	Local Share Assessment/Gaming Proceeds								
355.09	Marcellus Shale Impact Fee Distribution								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		172,020	279,144						451,164
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	1,720		71,847					73,567
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services	6,019							6,019
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		7,739		71,847					79,586
Charges for Service									
361.00	General Government	152,923	400						153,323
362.00	Public Safety	111,215							111,215
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	5,773							5,773
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					1,610,342			1,610,342
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	39,181							39,181
368.00	Airports								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		309,092	400			1,610,342			1,919,834
Unclassified Operating Revenues									
383.00	Special Assessments								
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors	192,570							192,570
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	25,704				675			26,379
Total Unclassified Operating Revenues		218,274				675			218,949
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	27,289							27,289
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	11,846							11,846
Total Other Financing Sources		39,135							39,135
TOTAL REVENUES		4,482,221	282,552	849,601		1,620,889			7,235,263
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	15,222							15,222
401.00	Executive (Manager or Mayor)	212,030							212,030
402.00	Auditing Services / Financial Administration	123,181							123,181
403.00	Tax Collection	62,420							62,420
404.00	Solicitor / Legal Services	264,286							264,286
405.00	Secretary / Clerk								
406.00	Other General Government Administration	158,235							158,235
407.00	IT-Networking Services-Data Processing	20,398							20,398
408.00	Engineering Services	245,631							245,631
409.00	General Government Buildings and Plant	46,557							46,557
Total General Government		1,147,960							1,147,960
Public Safety									
410.00	Police	1,414,810		53,164					1,467,974
411.00	Fire	140,996							140,996
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	156,404							156,404

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
414.00	Planning and Zoning	80,937							80,937
415.00	Emergency Management and Communications								
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		1,793,147		53,164					1,846,311
Health and Human Services									
420.00-425.00	Health and Human Services	14,320							14,320
Total Health and Human Services		14,320							14,320
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	18,000							18,000
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					418,512			418,512
Total Public Works - Sanitation		18,000				418,512			436,512
Public Works - Highways and Streets									
430.00	General Services - Administration	573,228		89,908					663,136
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	24,444	7,751						32,195
433.00	Traffic Control Devices		2,569						2,569
434.00	Street Lighting								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains		721						721
437.00	Repairs of Tools and Machinery		16,620						16,620
438.00	Maintenance and Repairs of Roads and Bridges		293,311						293,311
439.00	Highway Construction and Rebuilding Projects								
Total Public Works - Highways and Streets		597,672	320,972	89,908					1,008,552
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation	81,086							81,086
453.00	Spectator Recreation								
454.00	Parks								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Culture and Recreation									
455.00	Shade Trees								
456.00	Libraries								
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		81,086							81,086
Community Development									
461.00	Conservation of Natural Resources			199,166					199,166
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development	3,445							3,445
Total Community Development		3,445		199,166					202,611
Debt Service									
471.00	Debt Principal (short-term and long-term)	50,400		8,569		340,000			398,969
472.00	Debt Interest (short-term and long-term)	2,881		16		154,300			157,197
475.00	Fiscal Agent Fees								
Total Debt Service		53,281		8,585		494,300			556,166
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	10,330							10,330
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	152,541							152,541

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2022

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
484.00	Worker Compensation Insurance								
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		162,871							162,871
Insurance									
486.00	Insurance, Casualty, and Surety	54,168							54,168
Total Insurance		54,168							54,168
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures	18,992							18,992
Total Unclassified Operating Expenditures		18,992							18,992
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		3,944,942	320,972	350,823		912,812			5,529,549
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		537,279	-38,420	498,778		708,077			1,705,714

EAST COVENTRY TWP

December 31, 2022

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
General Obligation Note	Note	2004	2024	1,000,000	128,623		50,400		78,223		78,223
Bank Loan	Note	2011	2021	850,000	8,569		8,569		0		0
General Obligation Bonds - 2021	Bond	2021	2041	7,105,000	6,830,000		340,000		6,490,000		6,490,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) excludes unamortized premium/discount

Total bonds and notes outstanding	6,568,223
Capitalized lease obligations	0
Net debt	6,568,223

EAST COVENTRY TWP, CHESTER County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2022

Category	Capital Purchases	Capital Construction	Total
Community Development	176,327		176,327
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	80,189		80,189
Recreation			
Sewer			
Solid Waste			
Streets / Highways			
Water			
Other: _____			
TOTAL CAPITAL EXPENDITURES	256,516		256,516

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials)	1,703,695

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Christopher Turtell, CPA Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

December 31, 2022

NOTES / COMMENTS

The Township has two defined benefit pension plans and a defined contribution plan administered through the Pennsylvania Municipal Retirement System (PMRS). The plans are not included on this report because they do not meet the definition of a fiduciary activity. The Township contributed $96,319 to its police pension plan and $56,222 to its nonuniformed plans during 2022.

Included in the fund balance of the general fund is $103,540 assigned for future benefit payments at retirement.

DCED-CLGS-30 (9-09)

Received by DCED: 04/01/2024
Approved by DCED:

Department of Community & Economic Development
Governor's Center for Local Government Services
Commonwealth Keystone Building
400 North Street, 4th Floor
Harrisburg, PA 17120-0225
Ph: 888-223-6837 | fax: 717-783-1402

2023 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

150335 EAST COVENTRY TWP, CHESTER COUNTY

DCED-CLGS-30 (9-09)

BALANCE SHEET

DCED-CLGS-30 (09-09)

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2023

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Assets and Other Debits											
100-120	Cash and Investments	2,928,154	709,664	4,014,541		3,119,662					10,772,021
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)	291,366									291,366
130.00	Due From Other Funds	10,740									10,740
131-139, 150-159	Other Current Assets										
160-169	Fixed Assets										
180-189	Other Debits		74								74
Total Assets and Other Debits		3,230,260	709,738	4,014,541		3,119,662					11,074,201
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities										
230.00	Due To Other Funds		6,625			4,115					10,740

EAST COVENTRY TWP, CHESTER County

BALANCE SHEET

December 31, 2023

		Governmental Funds				Proprietary Funds		Fid. Fund	Account Groups		Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
Liabilities and Other Credits											
260-269	Long-Term-Liabilities										
240-259	Current Portion of Long-Term Debt and Other Credits	1,042,735									1,042,735
Total Liabilities and Other Credits		1,042,735	6,625			4,115					1,053,475
Fund and Account Group Equity											
281-284	Contributed Capital										
290.00	Investment in General Fixed Assets										
270-289	Fund Balance / Retained Earnings on 12/31	2,187,525	703,113	4,014,541		3,115,547					10,020,726
291-299	Other Equity										
Total Fund and Account Group Equity		2,187,525	703,113	4,014,541		3,115,547					10,020,726
TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY											11,074,201

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Taxes									
301.00	Real Estate Taxes	1,256,618							1,256,618
305.00	Occupation Taxes (levied under municipal code)								
308.00	Residence Taxes (levied by cities of the 3rd Class)								
309.00	Regional Asset District Sales Tax (Allegheny County municipalities only)								
310.00	Per Capita Taxes	34,261							34,261
310.10	Real Estate Transfer Taxes	374,046							374,046
310.20	Earned Income Taxes / Wage Taxes	1,646,785		802,923					2,449,708
310.30	Business Gross Receipts Taxes								
310.40	Occupation Taxes (levied under Act 511)								
310.50	Local Services Tax **	74,368							74,368
310.60	Amusement / Admission Taxes								
310.70	Mechanical Device Taxes								
310.90	Other: _____								
	Other: _____								
Total Taxes		3,386,078		802,923					4,189,001
Licenses and Permits									
320-322	All Other Licenses and Permits	32,660							32,660
321.80	Cable Television Franchise Fees	125,566							125,566
Total Licenses and Permits		158,226							158,226
Fines and Forfeits									
330-332	Fines and Forfeits	8,825							8,825
Total Fines and Forfeits		8,825							8,825

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Interest, Rents and Royalties									
341.00	Interest Earnings	56,534	18,326	96,663		72,650			244,173
342.00	Rents and Royalties	4,650							4,650
Total Interest, Rents and Royalties		61,184	18,326	96,663		72,650			248,823
Federal									
351.03	Highways and Streets								
351.09	Community Development								
351.00	All Other Federal Capital and Operating Grants								
352.01	National Forest								
352.00	All Other Federal Shared Revenue and Entitlements								
353.00	Federal Payments in Lieu of Taxes								
Total Federal									
State									
354.03	Highways and Streets								
354.09	Community Development								
354.15	Recycling / Act 101								
354.00	All Other State Capital and Operating Grants								
355.01	Public Utility Realty Tax (PURTA)	2,876							2,876
355.02-355.03	Motor Vehicle Fuel Tax (Liquid Fuels Tax) and State Road Turnback		287,686						287,686
355.04	Alcoholic Beverage Licenses								
355.05	General Municipal Pension System State Aid	140,288							140,288
355.07	Foreign Fire Insurance Tax Distribution	49,867							49,867
355.08	Local Share Assessment/Gaming Proceeds								
355.09	Marcellus Shale Impact Fee Distribution								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

REVENUES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
State									
355.00	All Other State Shared Revenues and Entitlements								
356.00	State Payments in Lieu of Taxes								
Total State		193,031	287,686						480,717
Local Government Units									
357.03	Highways and Streets								
357.00	All Other Local Governmental Units Capital and Operating Grants	885		189,100					189,985
358.00	Local Government Unit Shared Payments for Contracted Intergovernmental Services								
359.00	Local Governmental Units and Authorities Payments in Lieu of Taxes								
Total Local Government Units		885		189,100					189,985
Charges for Service									
361.00	General Government	297,083							297,083
362.00	Public Safety	235,684							235,684
363.20	Parking								
363.00	All Other Charges for Highway & Street Services	6,625							6,625
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)					817,722			817,722
364.30	Solid Waste Collection and Disposal Charge (trash)								
364.60	Host Municipality Benefit Fee for Solid Waste Facility								
364.00	All Other Charges for Sanitation Services								
365.00	Health								
366.00	Human Services								
367.00	Culture and Recreation	7,320							7,320
368.00	Airports								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Charges for Service									
369.00	Bars								
370.00	Cemeteries								
372.00	Electric System								
373.00	Gas System								
374.00	Housing System								
375.00	Markets								
377.00	Transit Systems								
378.00	Water System								
379.00	All Other Charges for Service								
Total Charges for Service		546,712				817,722			1,364,434
Unclassified Operating Revenues									
383.00	Special Assessments		179,298						179,298
386.00	Escheats (sale of personal property)								
387.00	Contributions and Donations from Private Sectors								
388.00	Fiduciary Fund Pension Contributions								
389.00	All Other Unclassified Operating Revenues	25,076							25,076
Total Unclassified Operating Revenues		25,076	179,298						204,374
Other Financing Sources									
391.00	Proceeds of General Fixed Asset Disposition	17,500							17,500
392.00	Interfund Operating Transfers								
393.00	Proceeds of General Long-Term Debt								
394.00	Proceeds of Short Term-Debt								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
REVENUES									
Other Financing Sources									
395.00	Refunds of Prior Year Expenditures	7,776							7,776
Total Other Financing Sources		25,276							25,276
TOTAL REVENUES		4,405,293	485,310	1,088,686		890,372			6,869,661
EXPENDITURES									
General Government									
400.00	Legislative (Governing) Body	13,624							13,624
401.00	Executive (Manager or Mayor)	421,910							421,910
402.00	Auditing Services / Financial Administration	125,259							125,259
403.00	Tax Collection	66,081							66,081
404.00	Solicitor / Legal Services	246,244							246,244
405.00	Secretary / Clerk								
406.00	Other General Government Administration	146,987							146,987
407.00	IT-Networking Services-Data Processing	42,344							42,344
408.00	Engineering Services	328,658							328,658
409.00	General Government Buildings and Plant	52,393							52,393
Total General Government		1,443,500							1,443,500
Public Safety									
410.00	Police	1,472,499							1,472,499
411.00	Fire	126,703							126,703
412.00	Ambulance / Rescue								
413.00	UCC and Code Enforcement	200,457							200,457

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Safety									
414.00	Planning and Zoning	58,716							58,716
415.00	Emergency Management and Communications								
416.00	Militia and Armories								
417.00	Examination of Licensed Occupations								
418.00	Public Scales (weights and measures)								
419.00	Other Public Safety								
Total Public Safety		1,858,375							1,858,375
Health and Human Services									
420.00-425.00	Health and Human Services	17,283							17,283
Total Health and Human Services		17,283							17,283
Public Works - Sanitation									
426.00	Recycling Collection and Disposal	20,160							20,160
427.00	Solid Waste Collection and Disposal (garbage)								
428.00	Weed Control								
429.00	Wastewater / Sewage Treatment and Collection					373,127			373,127
Total Public Works - Sanitation		20,160				373,127			393,287
Public Works - Highways and Streets									
430.00	General Services - Administration	626,300		22,247					648,547
431.00	Cleaning of Streets and Gutters								
432.00	Winter Maintenance – Snow Removal	8,614	1,300						9,914
433.00	Traffic Control Devices		238						238
434.00	Street Lighting								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Public Works - Highways and Streets									
435.00	Sidewalks and Crosswalks								
436.00	Storm Sewers and Drains								
437.00	Repairs of Tools and Machinery		21,218						21,218
438.00	Maintenance and Repairs of Roads and Bridges		378,742	185,893					564,635
439.00	Highway Construction and Rebuilding Projects			78,026					78,026
Total Public Works - Highways and Streets		634,914	401,498	286,166					1,322,578
Other Public Works Enterprises									
440.00	Airports								
441.00	Cemeteries								
442.00	Electric System								
443.00	Gas System								
444.00	Markets								
445.00	Parking								
446.00	Storm Water and Flood Control								
447.00	Transit System								
448.00	Water System								
449.00	Water Transport and Terminals								
Total Other Public Works Enterprises									
Culture and Recreation									
451.00	Culture-Recreation Administration								
452.00	Participant Recreation	76,378							76,378
453.00	Spectator Recreation								
454.00	Parks								

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

EXPENDITURES

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
Culture and Recreation									
455.00	Shade Trees								
456.00	Libraries								
457.00	Civil and Military Celebrations								
458.00	Senior Citizens' Centers								
459.00	All Other Culture and Recreation								
Total Culture and Recreation		76,378							76,378
Community Development									
461.00	Conservation of Natural Resources			583,536					583,536
462.00	Community Development and Housing								
463.00	Economic Development								
464.00	Economic Opportunity								
465-469	All Other Community Development								
Total Community Development				583,536					583,536
Debt Service									
471.00	Debt Principal (short-term and long-term)	50,400				345,000			395,400
472.00	Debt Interest (short-term and long-term)	2,702				147,500			150,202
475.00	Fiscal Agent Fees								
Total Debt Service		53,102				492,500			545,602
Employer Paid Benefits and Withholding Items									
481.00	Employer Paid Withholding Taxes and Unemployment Compensation								
482.00	Judgments and Losses								
483.00	Pension / Retirement Fund Contributions	179,806							179,806

EAST COVENTRY TWP, CHESTER County

STATEMENT OF REVENUES AND EXPENDITURES

December 31, 2023

		Governmental Funds				Proprietary Funds		Fiduciary Fund	Total
		General Fund	Special Revenue (Including State Liquid Fuels)	Capital Projects	Debt Service	Enterprise	Internal Service	Trust and Agency	Memorandum Only
EXPENDITURES									
Employer Paid Benefits and Withholding Items									
484.00	Worker Compensation Insurance								
487.00	Other Group Insurance Benefits								
Total Employer Paid Benefits and Withholding Items		179,806							179,806
Insurance									
486.00	Insurance, Casualty, and Surety	60,448							60,448
Total Insurance		60,448							60,448
Unclassified Operating Expenditures									
488.00	Fiduciary Fund Benefits and Refunds Paid								
489.00	All Other Unclassified Expenditures	11,803							11,803
Total Unclassified Operating Expenditures		11,803							11,803
Other Financing Uses									
491.00	Refund of Prior Year Revenues								
492.00	Interfund Operating Transfers								
493.00	All Other Financing Uses								
Total Other Financing Uses									
TOTAL EXPENDITURES		4,355,769	401,498	869,702		865,627			6,492,596
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		49,524	83,812	218,984		24,745			377,065

EAST COVENTRY TWP

December 31, 2023

DEBT STATEMENT

OUTSTANDING BONDS AND NOTES
Listed below are all currently outstanding bond and note issues according to our files, excluding bond issues redeemed or refunded and defeased. Please show the principal payments and make any other necessary corrections and additions.

Purpose	Bond (B) Capital Lease (C) Lease Rental (L) Note (N)	Issue Year (yyyy)	Maturity Year (yyyy)	Original Amount of Issue	Outstanding Beginning of Year (1)	Principal Incurred This Year	Principal Paid This Year	Current Year Accretion on Compound Interest Bonds	Outstanding at Year End (1)	Plus (less) Unamortized Premium (Discount)	Total Balance
General Obligation Bonds and Notes											
General Obligation Note	Note	2004	2024	1,000,000	78,223		50,400		27,823		27,823
General Obligation Bonds - 2021	Bond	2021	2041	7,105,000	6,490,000		345,000		6,145,000		6,145,000
Revenue Bonds and Notes											
Lease Rental Debt											
Other											

(1) - excludes unamortized premium/discount

Total bonds and notes outstanding	6,172,823
Capitalized lease obligations	0
Net debt	6,172,823

EAST COVENTRY TWP, CHESTER County

STATEMENT OF CAPITAL EXPENDITURES

December 31, 2023

Category	Capital Purchases	Capital Construction	Total
Community Development	552,319		552,319
Electric			
Fire			
Gas System			
General Government			
Health			
Housing			
Libraries			
Mass Transit			
Parks			
Police	36,962		36,962
Recreation			
Sewer			
Solid Waste			
Streets / Highways	75,002	139,036	214,038
Water			
Other: _____			
TOTAL CAPITAL EXPENDITURES	664,283	139,036	803,319

EMPLOYEE COMPENSATION

Total salaries, wages, commissions, etc. paid this year (including all employees and elected officials)	1,879,218

Independent Public Accountant/Certified Public Accountant Submission Page

Opinion page was provided in lieu of signature page.

SIGNATURE AND VERIFICATION

Signed: Herbein and Company, Inc. Appointed Auditor/CPA

DCED-CLGS-30 (9-09)

December 31, 2023

NOTES / COMMENTS

The Township has two defined benefit pension plans and a defined contribution plan administered through the Pennsylvania Municipal Retirement System (PMRS). The plans are not included on this report because they do not meet the definition of a fiduciary activity. The Township contributed $129,409 to its police pension and $50,397 to its nonuniformed plans during 2023.

Included in the fund balance of the general fund is $120,500 assigned for future benefits at retirement.

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2021

	Jan 1 - Oct 2020	Nov-Dec 2020	2020 Y/E Proj	2020 Budget	2021 Budget
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	740,113.29	16,586.71	756,700.00	798,000.00	806,600.00
364.130 · Application Fees	11,000.00	5,000.00	16,000.00	28,000.00	2,000.00
364.140 · Inspection Fees	0.00	0.00	0.00	6,000.00	0.00
364.160 · Sewer Certification Fee	915.00	135.00	1,050.00	975.00	1,050.00
370.100 · Interest	4.62	2.00	6.62	3,500.00	150.00
370.200 · Returned Check Fee	0.00	35.00	35.00	175.00	175.00
Total 364.000 · Sanitation	752,032.91	21,758.71	773,791.62	836,650.00	809,975.00
Total 300.000 · Revenues	752,032.91	21,758.71	773,791.62	836,650.00	809,975.00
358.000 · Miscellaneous	0.00	0.00	0.00	6,000.00	500.00
Total Income	752,032.91	21,758.71	773,791.62	842,650.00	810,475.00
Gross Profit	752,032.91	21,758.71	773,791.62	842,650.00	810,475.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	6,076.88	2,025.62	8,102.50	8,102.50	8,500.00
414.121 · Salary - Sewer Maint Laborer	18,750.00	6,250.00	25,000.00	25,000.00	26,000.00
414.122 · Salary - Financial Accountant	11,812.50	3,937.50	15,750.00	15,750.00	16,500.00
414.125 · Salary - Sewer Maint Overtime	6,675.00	2,225.00	8,900.00	8,900.00	9,500.00
414.126 · Salary Burden/Benefits	12,090.00	4,030.00	16,120.00	16,120.00	16,700.00
414.130 · Training	65.00	0.00	65.00	750.00	750.00
429.300 · Auditing Expenses	2,100.00	0.00	2,100.00	2,100.00	2,300.00
429.310 · Engineer Fees	10,559.70	2,000.00	12,559.70	12,000.00	13,000.00
429.320 · Legal Fees	11,205.00	2,000.00	13,205.00	3,000.00	5,000.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
429.350 · Appl/Inspection Fees	0.00	0.00	0.00	500.00	0.00
430.100 · NorCo Sewer Authority Fees	96,248.63	20,000.00	116,248.63	135,000.00	135,000.00
440.000 · Miscellaneous Expenses	1,579.98	150.00	1,729.98	1,700.00	1,850.00
440.050 · Pump Station Materials Purchase	3,528.33	900.00	4,428.33	4,500.00	4,600.00
440.060 · Electric	14,390.45	2,900.00	17,290.45	19,000.00	19,000.00
440.065 · Telephone	1,782.33	400.00	2,182.33	2,750.00	2,500.00
440.070 · Water	527.59	110.00	637.59	800.00	800.00
440.075 · Vehicle Maintenance (25%)	0.00	1,050.00	1,050.00	1,050.00	1,050.00
440.320 · Contracted Services	2,625.00	0.00	2,625.00	500.00	500.00
440.374 · Pump Station Repairs	6,249.99	1,250.00	7,499.99	9,000.00	9,000.00
470.200 · Principal	0.00	270,000.00	270,000.00	270,000.00	280,000.00
470.300 · Interest Expense	86,786.25	86,786.25	173,572.50	173,572.50	168,172.50
487.161 · FICA - Social Security	3,435.07	895.16	4,330.23	3,580.66	3,751.00
487.162 · FICA - Medicare	692.56	209.35	901.91	837.41	877.25
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2021

	Jan 1 - Oct 2020	Nov-Dec 2020	2020 Y/E Proj	2020 Budget	2021 Budget
Total 400.000 · Wastewater Collection & Treat	297,180.26	407,118.89	704,299.15	715,513.07	726,350.75
Total Expense	297,180.26	407,118.89	704,299.15	715,513.07	726,350.75
Net Income	454,852.65	-385,360.18	69,492.47	127,136.93	84,124.25
Cash Brought Forward					94,950.00
Net Income and Cash Brought Forward					179,074.25

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2022

Appendix A-5.2

	Jan - Oct 21	Nov-Dec 21	Y/E Proj	2021 Budget	2022 Budget
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	816,361.95	0.00	816,361.95	806,600.00	825,100.00
364.130 · Application Fees	2,500.00	0.00	2,500.00	2,000.00	0.00
364.160 · Sewer Certification Fee	1,140.00	30.00	1,170.00	1,050.00	1,200.00
370.100 · Interest	78.00	72.00	150.00	150.00	150.00
370.200 · Returned Check Fee	175.00	35.00	210.00	175.00	210.00
Total 364.000 · Sanitation	820,254.95	137.00	820,391.95	809,975.00	826,660.00
Total 300.000 · Revenues	820,254.95			809,975.00	826,660.00
358.000 · Miscellaneous	0.00	0.00	0.00	500.00	500.00
Total Income	820,254.95	0.00	0.00	810,475.00	827,160.00
Gross Profit	820,254.95	0.00	0.00	810,475.00	827,160.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	4,250.00	4,250.00	8,500.00	8,500.00	7,264.00
414.121 · Salary - Sewer Maint Laborer	13,000.00	13,000.00	26,000.00	26,000.00	23,225.00
414.122 · Salary - Financial Accountant	8,250.00	8,250.00	16,500.00	16,500.00	13,500.00
414.125 · Salary - Sewer Maint Overtime	4,750.00	4,750.00	9,500.00	9,500.00	9,800.00
414.126 · Salary Burden/Benefits	7,800.00	7,800.00	15,600.00	16,700.00	14,500.00
414.130 · Training	125.00	0.00	125.00	750.00	750.00
429.300 · Auditing Expenses	500.00	0.00	500.00	2,300.00	2,300.00
429.310 · Engineer Fees	14,307.14	1,500.00	15,807.14	13,000.00	13,000.00
429.320 · Legal Fees	5,186.80	500.00	5,686.80	5,000.00	5,800.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
430.100 · NorCo Sewer Authority Fees	106,284.68	33,000.00	139,284.68	135,000.00	142,000.00
440.000 · Miscellaneous Expenses	1,486.00	300.00	1,786.00	1,850.00	1,850.00
440.050 · Pump Station Materials Purchase	4,637.17	0.00	4,637.17	4,600.00	4,800.00
440.060 · Electric	13,597.03	3,900.00	17,497.03	19,000.00	19,000.00
440.065 · Telephone	1,933.53	600.00	2,533.53	2,500.00	2,600.00
440.070 · Water	604.71	150.00	754.71	800.00	850.00
440.075 · Vehicle Maintenance (25%)	158.95	875.00	1,033.95	1,050.00	1,050.00
440.320 · Contracted Services	1,550.00	0.00	1,550.00	500.00	2,000.00
440.374 · Pump Station Repairs	13,464.26	0.00	13,464.26	9,000.00	17,000.00
470.200 · Principal	0.00	280,000.00	280,000.00	280,000.00	285,000.00
470.300 · Interest Expense	84,086.25	84,086.25	168,172.50	168,172.50	162,572.50
487.161 · FICA - Social Security	1,939.98	3,334.92	5,274.90	3,751.00	3,334.92
487.162 · FICA - Medicare	453.71	779.94	1,233.65	877.25	779.94
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2022

	Jan - Oct 21	Nov-Dec 21	Y/E Proj	2021 Budget	2022 Budget
Total 400.000 · Wastewater Collection & Treat	288,365.21	447,076.11	735,441.32	726,350.75	733,976.36
Total Expense	288,365.21	447,076.11	735,441.32	726,350.75	733,976.36
Net Income	**531,889.74**	**-447,076.11**	**-735,441.32**	**84,124.25**	**93,183.64**
Cash Brought Forward					737,674.00
Total Net Income & Cash Brought Forward					**830,857.64**

East Coventry Twp. Sewer Operating Fund 08
Final Budget
2023

	Jan - Aug 22	Sept-Dec 22	Y/E Proj 22	2022 Budget	2023 Budget
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	622,194.38	203,500.00	825,694.38	825,100.00	901,320.00
364.130 · Application/Insp Fees	2,000.00	0.00	2,000.00	0.00	51,500.00
364.160 · Sewer Certification Fee	825.00	375.00	1,200.00	1,200.00	1,200.00
370.100 · Interest	0.00	0.00	0.00	150.00	150.00
370.200 · Returned Check Fee	35.00	35.00	70.00	210.00	210.00
Total 364.000 · Sanitation	625,054.38	203,910.00	828,964.38	826,660.00	954,380.00
Total 300.000 · Revenues	625,054.38	203,910.00	828,964.38	826,660.00	954,380.00
358.000 · Miscellaneous	7,039.12	0.00	7,039.12	500.00	500.00
Total Income	632,093.50	203,910.00	836,003.50	827,160.00	954,880.00
Gross Profit	632,093.50	203,910.00	836,003.50	827,160.00	954,880.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	3,632.00	3,632.00	7,264.00	7,264.00	7,499.25
414.121 · Salary - Sewer Maint Laborer	11,612.50	11,612.50	23,225.00	23,225.00	30,693.54
414.122 · Salary - Financial Accountant	6,750.00	6,750.00	13,500.00	13,500.00	13,938.75
414.125 · Salary - Sewer Maint Overtime	7,250.00	2,550.00	9,800.00	9,800.00	10,500.00
414.126 · Salary Burden/Benefits	4,750.00	4,750.00	9,500.00	14,500.00	17,300.00
414.130 · Training	0.00	300.00	300.00	750.00	750.00
429.300 · Auditing Expenses	750.00	0.00	750.00	2,300.00	2,300.00
429.310 · Engineer Fees	14,036.96	2,000.00	16,036.96	13,000.00	20,000.00
429.320 · Legal Fees	7,649.64	500.00	8,149.64	5,800.00	8,300.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
429.350 · Appl/Inspection Fees	65.00	0.00	65.00	0.00	70.00
430.100 · NorCo Sewer Authority Fees	84,794.46	60,600.00	145,394.46	142,000.00	148,000.00
440.000 · Miscellaneous Expenses	0.00	300.00	300.00	1,850.00	1,850.00
440.050 · Pump Station Materials Purchase	1,236.19	2,500.00	3,736.19	4,800.00	4,800.00
440.060 · Electric	11,452.74	4,500.00	15,952.74	19,000.00	19,000.00
440.065 · Telephone	1,493.47	1,000.00	2,493.47	2,600.00	2,600.00
440.070 · Water	384.52	200.00	584.52	850.00	850.00
440.075 · Vehicle Maintenance (25%)	828.49	200.00	1,028.49	1,050.00	1,100.00
440.320 · Contracted Services	440.00	1,550.00	1,990.00	2,000.00	2,000.00
440.374 · Pump Station Repairs	11,270.07	2,500.00	13,770.07	17,000.00	17,000.00
470.200 · Principal	0.00	285,000.00	285,000.00	285,000.00	285,000.00
470.300 · Interest Expense	77,150.00	85,422.50	162,572.50	162,572.50	165,000.00
487.161 · FICA - Social Security	0.00	3,334.92	3,334.92	3,334.92	3,883.15
487.162 · FICA - Medicare	0.00	779.94	779.94	779.94	908.16
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00
Total 400.000 · Wastewater Collection & Treat	245,546.04	479,981.86	725,527.90	733,976.36	764,342.85
Total Expense	245,546.04	479,981.86	725,527.90	733,976.36	764,342.85
Net Income	**386,547.46**	**-276,071.86**	**110,475.60**	**93,183.64**	**190,537.15**
Cash Brought Forward					558,224.08
Total Net Income & Cash Brought Forward					**748,761.23**

East Coventry Twp. Sewer Capital Fund 09
Final Budget
2023

	Jan - Aug 22	Sept-Dec 22	Y/E Proj 22	2022 Budget	2023 Budget
Ordinary Income/Expense					
Income					
364.110 Sewage Tapping Fee	0.00	0.00	0.00	0.00	700,091.00
370.100 · Interest Income	1,288.36	920.00	2,208.36	2,500.00	2,500.00
380.000 · Miscellaneous Income	260.00	0.00	260.00	0.00	0.00
Total Income	1,548.36	920.00	2,468.36	2,500.00	702,591.00
Gross Profit	1,548.36	920.00	2,468.36	2,500.00	702,591.00
Expense					
450.000 · Capital Expenses	5,645.50	30,000.00	35,645.50	60,500.00	60,500.00
Total Expense	5,645.50	30,000.00	35,645.50	60,500.00	60,500.00
Net Ordinary Income	-4,097.14	-29,080.00	-33,177.14	-58,000.00	642,091.00
Net Income	-4,097.14	-29,080.00	-33,177.14	-58,000.00	642,091.00
Cash Brought Forward					1,943,845.8
Total Net Income & Cash Brought Forward					2,585,936.8

East Coventry Twp. Sewer Operating Fund 08
FINAL BUDGET
2024

	Jan - Sep 23	Oct-Dec 23	Y/E Proj 2023	Budget 2023	Budget 2024
Income					
300.000 · Revenues					
364.000 · Sanitation					
364.120 · Sewer Use Charge	620,918.60	208,000.00	828,918.60	901,320.00	906,500.00
364.130 · Application Fees	8,000.00	3,000.00	11,000.00	51,500.00	49,000.00
364.160 · Sewer Certification Fee	450.00	150.00	600.00	1,200.00	600.00
370.100 · Interest	0.00	0.00	0.00	150.00	0.00
370.200 · Returned Check Fee	35.00	0.00	35.00	210.00	210.00
Total 364.000 · Sanitation	629,403.60	211,150.00	840,553.60	954,380.00	956,310.00
Total 300.000 · Revenues	629,403.60	211,150.00	840,553.60	954,380.00	956,310.00
358.000 · Miscellaneous	857.00	0.00	857.00	500.00	500.00
Total Income	630,260.60	211,150.00	841,410.60	954,880.00	956,810.00
Gross Profit	630,260.60	211,150.00	841,410.60	954,880.00	956,810.00
Expense					
400.000 · Wastewater Collection & Treat					
414.120 · Salary - Sewer Dept Supervisor	3,500.00	3,999.25	7,499.25	7,499.25	7,506.93
414.121 · Salary - Sewer Maint Laborer	15,300.00	15,393.54	30,693.54	30,693.54	31,884.15
414.122 · Salary - Financial Accountant	7,800.00	6,138.75	13,938.75	13,938.75	14,391.76
414.125 · Salary - Sewer Maint Overtime	5,250.00	5,250.00	10,500.00	10,500.00	10,850.00
414.126 · Salary Burden/Benefits	8,650.00	8,650.00	17,300.00	17,300.00	17,750.00
414.130 · Training	0.00	250.00	250.00	750.00	750.00
429.300 · Auditing Expenses	2,000.00	0.00	2,000.00	2,300.00	2,300.00
429.310 · Engineer Fees	15,664.75	4,335.25	20,000.00	20,000.00	21,000.00
429.320 · Legal Fees	49,798.70	16,500.00	66,298.70	8,300.00	68,000.00
429.340 · Legal Advertising & Notices	0.00	0.00	0.00	500.00	500.00
430.100 · NorCo Sewer Authority Fees	109,099.42	20,000.00	129,099.42	148,000.00	148,000.00
440.000 · Miscellaneous Expenses	0.00	0.00	0.00	1,850.00	1,850.00
440.050 · Pump Station Materials Purchase	962.71	325.00	1,287.71	4,800.00	4,800.00
440.060 · Electric	13,733.73	4,580.00	18,313.73	19,000.00	19,230.00
440.065 · Telephone	1,761.43	600.00	2,361.43	2,600.00	2,600.00
440.070 · Water	432.52	144.00	576.52	850.00	850.00
440.075 · Vehicle Maintenance (25%)	1,157.97	390.00	1,547.97	1,100.00	1,750.00
440.320 · Contracted Services	527.00	175.00	702.00	2,000.00	2,000.00
440.374 · Pump Station Repairs	11,758.83	4,000.00	15,758.83	17,000.00	17,000.00
470.200 · Principal	0.00	345,000.00	345,000.00	285,000.00	355,000.00
470.300 · Interest Expense	73,750.00	73,750.00	147,500.00	165,000.00	137,150.00
487.161 · FICA - Social Security	2,400.00	1,908.46	4,308.46	3,883.15	4,007.24
487.162 · FICA - Medicare	453.00	446.33	899.33	908.16	937.18
489.100 · Equipment Purchase	0.00	0.00	0.00	500.00	500.00
Total 400.000 · Wastewater Collection & Treat	324,000.06	511,835.58	835,835.64	764,272.85	870,607.25
Total Expense	324,000.06	511,835.58	835,835.64	764,272.85	870,607.25
Net Income	**306,260.54**	**-300,685.58**	**5,574.96**	**190,607.15**	**86,202.75**
Cash Brought Forward					412,759.00
Net Income and Cash Brought Forward					**498,961.75**

East Coventry Twp. Sewer Capital Fund 08
Final Budget
2024

	Jan - Sep 23	Oct-Dec 23	Y/E Proj 23	Budget 23	Budget 24
Ordinary Income/Expense					
Income					
364.110 · Sewage Tapping Fee	13,594.00	13,594.00	27,188.00	700,091.00	13,594.00
370.100 · Interest Income	42,423.29	14,141.00	56,564.29	2,500.00	59,000.00
Total Income	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Gross Profit	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Expense					
450.000 · Capital Expenses	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Total Expense	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Net Ordinary Income	54,643.91	27,275.00	81,918.91	642,091.00	12,594.00
Net Income	**54,643.91**	**27,275.00**	**81,918.91**	**642,091.00**	**12,594.00**
Cash Brought Forward					2,791,072.00
Net Income and Cash Brought Forward					**2,803,666.00**

East Coventry Twp. Sewer Capital Fund 409
Final Budget
2021

	Jan 1 - Oct 2020	Nov-Dec 2020	2020 Proj. Y/E	2020 Budget	2021 Budget
Ordinary Income/Expense					
Income					
364.110 · Sewage Tapping Fee	197,113.00	67,970.00	265,083.00	190,316.00	27,188.00
370.100 · Interest Income	5,919.13	1,180.00	7,099.13	12,000.00	7,100.00
Total Income	203,032.13	69,150.00	272,182.13	202,316.00	34,288.00
Gross Profit	203,032.13	69,150.00	272,182.13	202,316.00	34,288.00
Expense					
450.000 · Capital Expenses	7,395.14	0.00	7,395.14	70,000.00	65,000.00
Total Expense	7,395.14	0.00	7,395.14	70,000.00	65,000.00
Net Ordinary Income	195,636.99	69,150.00	264,786.99	132,316.00	-30,712.00
Net Income	**195,636.99**	**69,150.00**	**264,786.99**	**132,316.00**	**(30,712.00)**
Cash Brought Forward					**1,946,234.00**
Net Income and Cash Brought Forward					**1,915,522.00**

East Coventry Twp. Sewer Capital Fund 09
Final Budget
2023

	Jan - Aug 22	Sept-Dec 22	Y/E Proj 22	2022 Budget	2023 Budget
Ordinary Income/Expense					
Income					
364.110 Sewage Tapping Fee	0.00	0.00	0.00	0.00	700,091.00
370.100 · Interest Income	1,288.36	920.00	2,208.36	2,500.00	2,500.00
380.000 · Miscellaneous Income	260.00	0.00	260.00	0.00	0.00
Total Income	1,548.36	920.00	2,468.36	2,500.00	702,591.00
Gross Profit	1,548.36	920.00	2,468.36	2,500.00	702,591.00
Expense					
450.000 · Capital Expenses	5,645.50	30,000.00	35,645.50	60,500.00	60,500.00
Total Expense	5,645.50	30,000.00	35,645.50	60,500.00	60,500.00
Net Ordinary Income	-4,097.14	-29,080.00	-33,177.14	-58,000.00	642,091.00
Net Income	-4,097.14	-29,080.00	-33,177.14	-58,000.00	642,091.00
Cash Brought Forward					1,943,845.8
Total Net Income & Cash Brought Forward					2,585,936.8

East Coventry Twp. Sewer Capital Fund 08
Final Budget
2024

	Jan - Sep 23	Oct-Dec 23	Y/E Proj 23	Budget 23	Budget 24
Ordinary Income/Expense					
Income					
364.110 · Sewage Tapping Fee	13,594.00	13,594.00	27,188.00	700,091.00	13,594.00
370.100 · Interest Income	42,423.29	14,141.00	56,564.29	2,500.00	59,000.00
Total Income	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Gross Profit	56,017.29	27,735.00	83,752.29	702,591.00	72,594.00
Expense					
450.000 · Capital Expenses	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Total Expense	1,373.38	460.00	1,833.38	60,500.00	60,000.00
Net Ordinary Income	54,643.91	27,275.00	81,918.91	642,091.00	12,594.00
Net Income	**54,643.91**	**27,275.00**	**81,918.91**	**642,091.00**	**12,594.00**
Cash Brought Forward					2,791,072.00
Net Income and Cash Brought Forward					**2,803,666.00**

	Township Of East Coventry Data & Demographics (As of July 1, 2023)
POPULATION	
Total Population	7,182 (100%)
Population in Households	6,988 (97.3%)
Population in Families	5,826 (81.1%)
Population in Group Quarters1	194 (2.7%)
Population Density	674
Diversity Index2	36
INCOME	
Median Household Income	$112,078
Average Household Income	$149,167
% of Income for Mortgage4	22%
Per Capita Income	$54,274
Wealth Index5	166
HOUSING	
Total HU (Housing Units)	2,720 (100%)
Owner Occupied HU	2,054 (75.5%)
Renter Occupied HU	557 (20.5%)
Vacant Housing Units	109 (4.0%)
Median Home Value	$417,188
Average Home Value	$424,817
Housing Affordability Index3	95
HOUSEHOLDS	
Total Households	2,611
Average Household Size	2.68
Family Households	1,829
Average Family Size	3

Appendix A-5.2

Pump Station No. 1

Pump Station No. 1

Pump Station No. 1

Pump Station No. 1

Pump Station No. 3

Pump Station No. 3

Appendix A-5.2

Pump Station No. 3

Pump Station No. 4

Pump Station No. 4

Pump Station No. 4

Pump Station No. 4

Pump Station No. 2

Appendix A-5.2

Pump Station No. 2

Pump Station No. 2

Pump Station No. 2

Pump Station No. 2

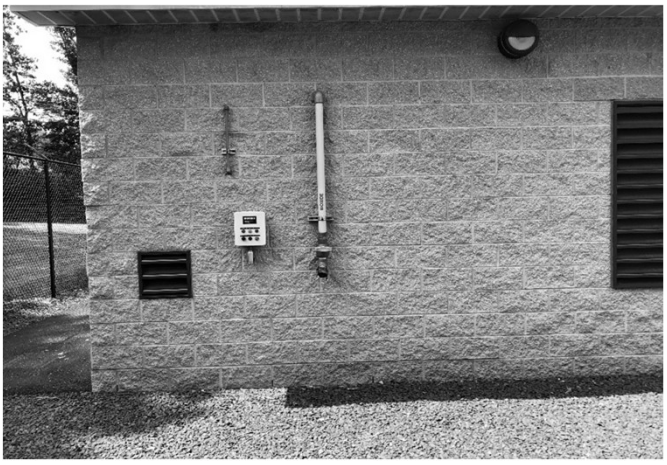
Pump Station No. 5

Pump Station No. 5

Appendix A-5.2

Pump Station No. 5

Pump Station No. 5



Pump Station No. 5

Appendix A-5.2

Type	Date	Num	Name	Memo	Amount
300.000 · Revenues					
364.120 · Sewer Use Charge					
Invoice	01/03/2023	46068	28 Wil-Be Drive - Azzi	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46069	31 Wil-Be Drive - Campbell	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46070	30 Wil-Be Drive - Phalcomepely/Venamnani	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46071	34 Wil-Be Drive - Nagabhairava	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46072	36 Wil-Be Drive - Megni	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46073	41 Wil-Be Drive - Ladha	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46074	54 Wil-Be Drive - Sampurna	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46075	56 Wil-Be Drive - Thadisetty/Gudipati	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46076	58 Wil-Be Drive - Chaturvedula	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46077	35 Wil-Be Drive - Hudson	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46078	22 Wil-Be Drive - Moore	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46079	18 Wil-Be Drive - Gonzalez	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46080	24 Wil-Be Drive - Clothier	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46081	63 Wil-Be Drive - Griste	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46082	39 Wil Be Drive - Alace/Mahimairkj	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46083	74 Wil-Be Drive - Davis	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46084	75 Wil-Be Drive - Tancredi	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46085	67 Wil-Be Drive - Dyapa/Mantravadi	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46086	2 Wil-Be Drive - Kundoor/Gangireddy	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46087	64 Wil-Be Drive - Manickan/Gobisankar	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46088	68 Wil-Be Drive - Peddireddy	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46089	65 Wil-Be Drive - Narasimhan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46090	60 Wil-Be Drive - Jonnagadla/Kayathi	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46091	71 Wil-Be Drive - Kibbler	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46092	20 Wil-Be Drive - Radhakrishnan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46093	72 Wil-Be Drive - Rangarajan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46094	66 Wil-Be - Venkatasubramanian	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46095	70 Wil-Be Drive - Heckel	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46096	86 Wil-Be Drive - Soma	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46097	84 Wil-Be Drive - Rajappa	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46098	46 Wil-Be Dr - Seiple/Lonsdale	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46099	48 Wil-Be Dr - Raghupathi/Gnanasekaran	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46100	44 Wil-Be Dr - Muthukrishnan/Baskaran	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46101	50 Wil-Be Dr - Kostusiak	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46102	33 Wil-Be Dr - Annamalai/Chockalingam	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46103	40 Wil-Be Dr - Callan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46104	42 Wil-Be Dr - Solairaj	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46105	3 Wil-Be Drive - Kagiavas	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46106	5 Wil-Be Dr. - Klemp	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46107	7 Wil-Be Drive - Syska/Prail	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46108	1 Wil-Be Drive - Mathiyazhagan/Pachiannan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46109	52 Wil-Be Dr-Mathiyazhagan/Viswanathan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46110	80 Wil-Be Dr - Ramanan/Balachandran	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46111	82 Wil-Be Dr - Jonnagadia/Nayak	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46112	76 Wil-Be Dr - Buddharaju	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46113	78 Wil-Be Dr - Manikandan/Manoharan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46114	88 Wil-Be Dr - Manichettiar	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46115	94 Wil-Be Dr - Bhagvath	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46116	96 Wil-Be Dr - Rajakumar	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46117	89 Wil-Be Drive - Chenna	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46118	90 Wil-Be Dr - Ramalingam	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46119	87 Wil-Be Dr.-Varathungarajan	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46120	98 Wil-Be Dr. - Sundar	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46121	93 Wil-Be Dr. - Karounos	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46122	92 Wil-Be Dr. - Srinivasan/Sivaraman	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46123	97 Wil-Be Dr. - Yurchyk	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46124	95 Wil-Be Dr. - Karthik/Emerson	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46125	91 Wil-Be Dr. - Ferder/Ballett	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46126	73 Wil Be Drive - Brown	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	185.00
Invoice	01/03/2023	46127	700 Summer Lane - Orchard Ridge	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	13,320.00
Invoice	01/03/2023	46127	700 Summer Lane - Orchard Ridge	Sewer Use Charge 4th Quarter 2022 October, November & December 2022	37,370.00
Invoice	01/03/2023	46127	700 Summer Lane - Orchard Ridge	sewer Use Charge Billing Period Prorated Billing	370.00
Total 364.120 · Sewer Use Charge					206,583.34
Total 300.000 · Revenues					206,583.34
TOTAL					**206,583.34**

Count **830**

EAST COVENTRY TOWNSHIP

North Coventry Municipal Authority EDU Connection Report For The Period Ending 2/28/2022

Project	Approved EDUs	EDU's Connected this Month	EDU's Previously Connected	Total EDU's Connected	Remaining EDU's to be Connected
Orchard Ridge	276	0	276	276	0
Heather Glen	30	0	29	29	1
Coventry Glen	380	0	380	380	0
Woodcrest Estates	22	0	22	22	0
Creekview	62	0	62	62	0
Parkerford Church	2	0	2	2	0
Whispering Woods	80	0	80	80	0
East Coventry Elementary School	16	0	16	16	0
Miscellaneous	1075	0	248	248	827
TOTALS	1943	0	1115	1115	828

Total Flow

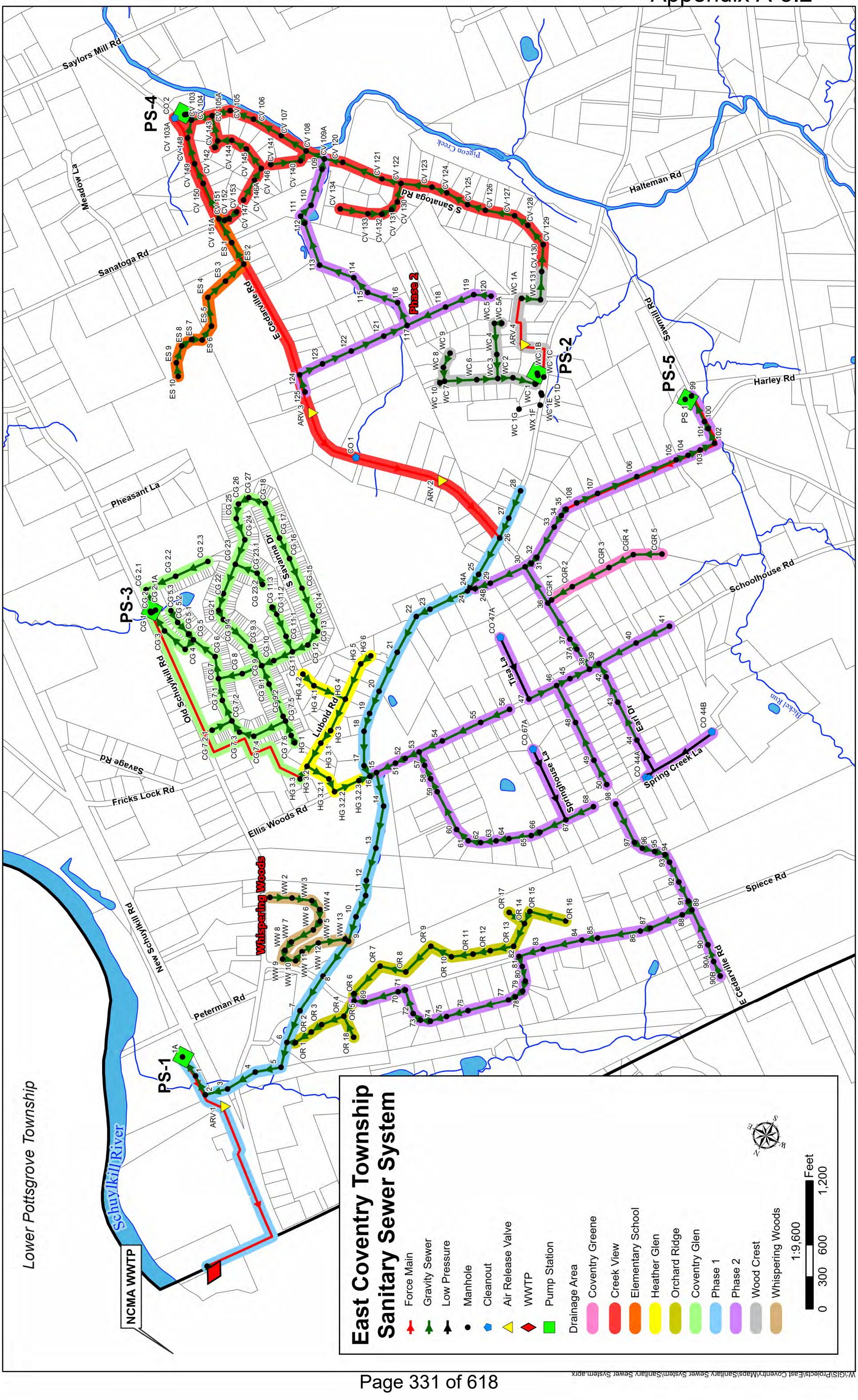
Pump Station #1	Total Gallons this Month	3,882,200
	Average Gallons Per Day	138,650
Pump Station #2	Total Gallons this Month	143,600
	Average Gallons Per Day	5,129
Pump Station #3	Total Gallons this Month	1,487,100
	Average Gallons Per Day	53,111
Pump Station #4	Total Gallons this Month	578,200
	Average Gallons Per Day	20,650
Pump Station #5	Total Gallons this Month	52,000
	Average Gallons Per Day	1,857

Average Gravity Flows

PS-1 EDU's	Avg. GPD	GPD/EDU
578	63,032	109.05
PS-2 EDU's	**Avg. GPD**	**GPD/EDU**
26	5,129	197.25
PS-3 EDU's	**Avg. GPD**	**GPD/EDU**
383	53,111	138.67
PS-4 EDU's	**Avg. GPD**	**GPD/EDU**
113	15,521	137.36
PS-5 EDU's	**Avg. GPD**	**GPD/EDU**
15	1,857	123.81

System Average Gallons Per Day/Connected EDU's: 138,650 / 1,115 = 124.35 **GPD/EDU**

New Connection(s) this month: 0


East Coventry Township
Sanitary Sewer System
Force Main
Gravity Sewer
Low Pressure
Manhole
Cleanout
Air Release Valve
WWTP
Pump Station
Drainage Area
Coventry Greene
Creek View
Elementary School
Heather Glen
Orchard Ridge
Coventry Glen
Phase 1
Phase 2
Wood Crest
Whispering Woods
1:9,600
0 300 600 1,200
Feet
PS-1
PS-2
PS-3
PS-4
PS-5
NCMA WWTP
Schuylkill River
Lower Pottsgrove Township
Saylors Mill Rd
Meadow La
Sanatoga Rd
Pigeon Creek
Halteman Rd
S Sanatoga Rd
E Cedarville Rd
Phase 2
Sawmill Rd
Harley Rd
Pheasant La
Old Schuylkill Rd
Lubold Rd
S Evans Dr
Savage Rd
Fricks Lock Rd
Ellis Woods Rd
Whispering Woods
New Schuylkill Rd
Peterman Rd
Tisa La
Springhouse La
Earl Dr
Spring Creek La
Schoolhouse Rd
Spiece Rd
Nickel Run
W:\GIS\Projects\East Coventry\Maps\Sanitary Sewer System\Sanitary Sewer System.aprx

Appendix A-5.2

EAST COVENTRY TOWNSHIP
CHESTER COUNTY PENNSYLVANIA

SEWER DEPARTMENT

The Township provides public sewer to approximately 1,100 residences in the Township. Public water is supplied by **Pennsylvania American Water**.

Sewer Rates and Fees

Sewer tapping fee..... ...$6,797.00
Sewer connection permit fees.....$500.00
Sewer usage fee (quarterly).....$185.00
Billing dates for the quarterly usage fees are January 01, April 01, July 01 and October 01.
Payment terms are 30 days.
Please make sure the **address of the property is indicated on your payment**.
Sewer usage fees may be paid by mailing a check to the Township Building; paying in person at the Township Building with check, cash or credit card; or online by credit card (Please Note that a 2.75% convenience fee is charged by the credit card company).

Sewer Certifications may be obtained by submitting a request and payment of $15.00 to the Township Building.

Private On-Lot Septic System Pump Out Information

As required by the Pennsylvania Department of Environmental Protection, all property owners with on-lot septic systems shall pump out their systems every three (3) years. The Township requests that as property owners have their on-lot systems pumped out by a waste disposal company, the property owners forward a copy of their receipt for the Township's records. For more information, please contact the Township at 610-495-5443.

Sewer Department News

ACT 537 SPECIAL SEWER STUDY, PARKER FORD AREA
Study Presentation
Study Link

Consensus Forecast of U.S. Interest Rates and Key Assumptions

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Qtr	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	Mar 22	Mar 15	Mar 8	Mar 1	Feb	Jan	Dec	1Q 2024*	**2024**	**2024**	**2024**	**2025**	**2025**	**2025**
Federal Funds Rate	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	**5.2**	**5.0**	**4.6**	**4.2**	**3.9**	**3.7**
Prime Rate	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	**8.4**	**8.1**	**7.7**	**7.4**	**7.0**	**6.8**
SOFR	5.31	5.31	5.31	5.31	5.31	5.32	5.33	5.31	**5.3**	**5.0**	**4.6**	**4.3**	**3.9**	**3.7**
Commercial Paper, 1-mo.	5.32	5.32	5.31	5.32	5.31	5.32	5.32	5.32	**5.2**	**4.9**	**4.5**	**4.2**	**3.9**	**3.6**
Treasury bill, 3-mo.	5.47	5.48	5.47	5.45	5.44	5.45	5.44	5.45	**5.3**	**4.9**	**4.5**	**4.2**	**3.8**	**3.6**
Treasury bill, 6-mo.	5.37	5.37	5.35	5.31	5.28	5.21	5.34	5.28	**5.1**	**4.8**	**4.5**	**4.1**	**3.8**	**3.6**
Treasury bill, 1 yr.	5.02	5.01	4.94	5.00	4.92	4.79	4.96	4.90	**4.8**	**4.5**	**4.2**	**3.9**	**3.7**	**3.6**
Treasury note, 2 yr.	4.64	4.62	4.54	4.64	4.54	4.32	4.46	4.48	**4.4**	**4.1**	**3.9**	**3.7**	**3.6**	**3.5**
Treasury note, 5 yr.	4.28	4.21	4.12	4.26	4.19	3.98	4.00	4.12	**4.1**	**3.9**	**3.8**	**3.7**	**3.6**	**3.6**
Treasury note, 10 yr.	4.28	4.21	4.13	4.26	4.21	4.06	4.02	4.16	**4.1**	**4.0**	**3.9**	**3.9**	**3.8**	**3.8**
Treasury bond, 30 yr.	4.44	4.36	4.28	4.39	4.38	4.26	4.14	4.33	**4.3**	**4.2**	**4.2**	**4.1**	**4.1**	**4.0**
Corporate Aaa bond	5.15	5.10	5.07	5.16	5.13	5.01	4.95	5.08	**5.0**	**4.9**	**4.9**	**4.8**	**4.8**	**4.8**
Corporate Baa bond	5.65	5.62	5.59	5.69	5.65	5.53	5.51	5.60	**5.9**	**5.8**	**5.8**	**5.8**	**5.8**	**5.7**
State & Local bonds	4.13	4.09	4.10	4.12	4.12	4.09	4.13	4.11	**4.2**	**4.2**	**4.1**	**4.1**	**4.0**	**4.0**
Home mortgage rate	6.87	6.74	6.88	6.94	6.78	6.64	6.82	6.75	**6.7**	**6.5**	**6.4**	**6.2**	**6.1**	**6.0**
	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2022	2022	2022	2023	2023	2023	2023	2024**	**2024**	**2024**	**2024**	**2025**	**2025**	**2025**
Fed's AFE Index	113.5	118.8	119.8	115.5	114.6	115.0	116.6	115.5	**115.4**	**114.8**	**114.3**	**114.1**	**114.0**	**114.6**
Real GDP	-0.6	2.7	2.6	2.2	2.1	4.9	3.4	2.0	**1.6**	**1.4**	**1.5**	**1.7**	**1.9**	**2.0**
GDP Price Index	9.1	4.4	3.9	3.9	1.7	3.3	1.6	2.2	**2.4**	**2.3**	**2.2**	**2.2**	**2.1**	**2.2**
Consumer Price Index	10.0	5.3	4.0	3.8	3.0	3.4	2.7	2.9	**2.9**	**2.4**	**2.3**	**2.3**	**2.2**	**2.3**
PCE Price Index	7.2	4.7	4.1	4.2	2.5	2.6	1.8	2.3	**2.4**	**2.2**	**2.1**	**2.2**	**2.1**	**2.1**

*Interest rate data for 1Q 2024 based on historical data through the week ended March 22. **Data for 1Q 2024 for the Fed's AFE $ Index based on data through the week ended March 22. Figures for 1Q 2024 Real GDP, GDP Chained Price Index, Consumer Price Index, and PCE Price Index are consensus forecasts from the March 2024 survey.

Blue Chip Financial Forecasts, April 1, 2024. Copyright © 2024 CCH Incorporated. All Rights Reserved.

IQ_TEV Total Enterprise Value

		American States Water Company	American Water Works Company, Inc.	Artesian Resources Corporation	California Water Service Group	Essential Utilities, Inc.	Middlesex Water Company	SJW Group	The York Water Company
SPOT	**4/30/2024**	**3,541.104**	**35,893.603**	**537.832**	**4,130.748**	**17,109.362**	**1,315.915**	**3,520.673**	**689.645**
2013	1/31/2013	1,272.729	12,286.137	313.776	1,346.998	5,463.243	471.008	840.392	327.909
2013	2/28/2013	1,319.039	12,543.905	310.650	1,372.614	5,752.372	473.371	849.367	322.237
2013	3/31/2013	1,421.276	12,924.431	313.406	1,480.334	6,070.791	479.603	884.304	327.140
2013	4/30/2013	1,382.181	13,011.119	322.028	1,488.901	6,111.438	480.988	866.219	326.493
2013	5/31/2013	1,327.647	12,730.222	310.271	1,388.183	6,001.923	466.480	900.226	329.776
2013	6/30/2013	1,338.061	12,959.456	311.607	1,377.682	6,030.071	477.079	883.124	329.129
2013	7/31/2013	1,541.518	13,217.123	321.512	1,509.379	6,391.779	496.380	892.992	355.640
2013	8/31/2013	1,344.711	13,008.539	307.599	1,421.185	5,931.749	484.377	858.423	334.858
2013	9/30/2013	1,393.458	13,104.640	311.146	1,438.847	6,008.335	506.089	896.079	341.960
2013	10/31/2013	1,429.051	13,387.603	316.282	1,509.493	6,087.743	495.629	907.986	350.224
2013	11/30/2013	1,439.115	13,212.258	322.689	1,532.222	5,877.778	516.290	893.165	363.409
2013	12/31/2013	1,421.692	13,196.213	316.752	1,542.247	5,792.958	499.733	940.143	350.984
2014	1/31/2014	1,408.915	13,251.478	313.833	1,552.749	5,856.573	483.176	916.352	343.736
2014	2/28/2014	1,457.723	13,861.514	307.667	1,575.749	6,042.927	488.111	953.434	341.147
2014	3/31/2014	1,545.292	13,960.600	315.416	1,596.279	6,024.472	510.130	952.839	344.156
2014	4/30/2014	1,471.451	13,983.832	312.162	1,551.564	6,028.013	486.661	919.410	339.087
2014	5/31/2014	1,455.593	14,549.126	313.525	1,530.414	6,100.259	486.122	915.588	344.787
2014	6/30/2014	1,569.991	14,699.502	314.941	1,632.714	6,248.990	497.473	918.820	350.611
2014	7/31/2014	1,466.063	14,398.750	308.963	1,569.887	5,816.962	483.724	922.876	327.441
2014	8/31/2014	1,504.687	14,985.574	307.188	1,645.895	6,067.568	492.765	934.005	343.916
2014	9/30/2014	1,431.912	14,559.199	298.616	1,554.111	5,805.341	477.832	924.502	341.606
2014	10/31/2014	1,639.398	15,480.025	315.919	1,706.069	6,278.412	525.200	1,033.923	367.012
2014	11/30/2014	1,599.013	15,364.380	313.338	1,660.170	6,344.315	517.774	993.669	342.619
2014	12/31/2014	1,705.381	15,409.208	322.240	1,638.180	6,365.511	534.208	1,037.788	381.175
2015	1/31/2015	1,781.413	15,918.445	318.712	1,634.833	6,427.333	515.036	1,071.181	387.067
2015	2/28/2015	1,783.911	15,659.191	315.263	1,700.947	6,308.784	537.430	1,071.732	387.067
2015	3/31/2015	1,774.738	15,689.014	316.257	1,656.971	6,292.882	527.808	1,024.348	397.687
2015	4/30/2015	1,708.039	15,744.786	317.463	1,644.315	6,381.568	528.220	985.925	408.985
2015	5/31/2015	1,703.231	15,539.174	311.723	1,645.267	6,326.332	508.673	1,003.771	374.761
2015	6/30/2015	1,663.940	14,776.135	308.993	1,595.477	6,002.288	520.457	1,015.365	355.474
2015	7/31/2015	1,707.765	15,366.410	312.852	1,556.263	6,170.504	523.362	1,006.790	361.646
2015	8/31/2015	1,687.895	15,548.252	318.585	1,513.172	6,214.504	524.314	984.846	359.324
2015	9/30/2015	1,823.823	16,114.257	335.890	1,584.511	6,410.758	541.771	1,025.777	356.622
2015	10/31/2015	1,799.617	16,525.243	338.013	1,579.311	6,787.353	572.968	1,045.579	384.415
2015	11/30/2015	1,849.951	16,647.800	353.053	1,587.450	6,930.835	572.246	1,018.443	394.035
2015	12/31/2015	1,854.358	17,004.944	363.938	1,622.879	7,010.227	586.998	1,003.768	407.850
2016	1/31/2016	1,981.070	17,931.006	389.534	1,710.013	7,315.448	626.878	1,063.895	429.979
2016	2/29/2016	1,898.437	18,049.528	372.803	1,727.113	7,204.881	610.991	1,154.038	444.178
2016	3/31/2016	1,787.041	18,781.144	369.135	1,822.751	7,431.837	644.639	1,155.876	478.391
2016	4/30/2016	1,873.359	19,457.530	361.329	1,907.492	7,403.482	738.018	1,114.000	467.232
2016	5/31/2016	1,783.573	19,859.644	367.975	1,966.020	7,524.858	738.049	1,115.898	431.212
2016	6/30/2016	1,957.570	21,709.652	417.489	2,243.309	8,118.712	842.482	1,215.780	495.968
2016	7/31/2016	1,934.907	21,366.663	418.089	2,224.254	7,937.897	808.862	1,284.437	488.259
2016	8/31/2016	1,805.259	19,994.999	360.465	2,068.828	7,228.007	691.809	1,291.874	446.991
2016	9/30/2016	1,844.377	20,146.216	369.619	2,145.581	7,240.420	722.253	1,312.112	464.494
2016	10/31/2016	1,841.818	20,003.894	366.978	2,084.430	7,279.433	736.255	1,459.764	489.140
2016	11/30/2016	1,945.995	19,732.904	393.220	2,254.717	7,127.461	815.201	1,519.906	548.981
2016	12/31/2016	2,061.556	19,713.324	398.917	2,223.537	7,182.442	851.037	1,567.159	572.095

		American States Water Company	American Water Works Company, Inc.	Artesian Resources Corporation	California Water Service Group	Essential Utilities, Inc.	Middlesex Water Company	SJW Group	The York Water Company
IQ_TEV	Total Enterprise Value								
2017	1/31/2017	1,996.461	19,905.567	389.627	2,252.318	7,248.066	767.474	1,446.877	541.276
2017	2/28/2017	2,047.038	21,005.750	405.435	2,392.199	7,523.184	764.867	1,435.642	543.844
2017	3/31/2017	2,031.672	20,926.809	404.806	2,348.927	7,599.924	753.446	1,429.755	533.381
2017	4/30/2017	2,041.028	21,280.485	459.255	2,390.278	7,766.839	772.741	1,427.576	564.881
2017	5/31/2017	2,093.355	21,154.982	433.318	2,339.857	7,745.858	729.496	1,411.182	511.596
2017	6/30/2017	2,152.674	21,113.998	457.631	2,443.100	7,854.194	799.276	1,434.551	534.073
2017	7/31/2017	2,227.371	21,675.300	465.979	2,584.899	7,868.402	793.407	1,505.884	533.431
2017	8/31/2017	2,169.768	21,819.040	453.840	2,515.272	7,959.355	778.848	1,559.816	513.165
2017	9/30/2017	2,167.935	21,820.823	459.738	2,548.885	7,922.048	799.924	1,582.374	526.013
2017	10/31/2017	2,332.837	23,042.057	487.148	2,739.110	8,361.244	868.706	1,653.532	542.715
2017	11/30/2017	2,476.643	23,708.052	503.036	2,911.964	8,804.494	920.464	1,834.526	569.968
2017	12/31/2017	2,484.712	23,695.565	468.093	2,899.961	9,024.830	818.955	1,746.286	528.172
2018	1/31/2018	2,386.045	22,211.482	455.741	2,676.690	8,488.205	782.177	1,664.408	499.236
2018	2/28/2018	2,330.478	21,836.881	418.441	2,544.649	8,219.887	745.889	1,536.610	453.581
2018	3/31/2018	2,328.275	22,289.321	451.736	2,500.460	8,201.649	771.522	1,533.329	492.648
2018	4/30/2018	2,426.935	23,282.773	468.415	2,624.854	8,395.553	852.870	1,707.585	508.105
2018	5/31/2018	2,451.747	22,749.901	480.670	2,696.964	8,369.772	901.984	1,763.351	514.206
2018	6/30/2018	2,484.072	23,148.728	478.088	2,634.468	8,455.162	864.849	1,826.988	501.956
2018	7/31/2018	2,592.803	23,659.726	461.952	2,786.663	8,768.262	899.530	1,814.911	491.641
2018	8/31/2018	2,612.593	24,095.482	458.067	2,789.067	8,877.359	938.895	1,676.083	482.498
2018	9/30/2018	2,638.674	24,174.899	465.173	2,873.189	8,827.543	981.843	1,742.928	486.373
2018	10/31/2018	2,641.612	24,290.974	462.968	2,829.926	8,050.059	925.781	1,746.945	495.930
2018	11/30/2018	2,854.211	25,542.931	463.975	3,025.470	8,506.486	1,045.851	2,028.455	521.201
2018	12/31/2018	2,852.741	24,704.953	451.203	3,118.722	8,488.692	1,070.612	2,073.270	507.494
2019	1/31/2019	2,877.728	25,589.887	455.156	3,208.128	8,641.721	1,117.347	2,196.215	518.356
2019	2/28/2019	3,025.515	26,859.987	490.710	3,333.307	9,026.116	1,161.131	1,849.590	564.264
2019	3/31/2019	3,031.767	27,312.084	479.352	3,441.939	9,123.151	1,127.299	1,866.040	540.471
2019	4/30/2019	3,028.482	28,021.492	468.022	3,320.050	11,050.329	1,161.422	1,887.889	536.716
2019	5/31/2019	3,121.361	29,319.236	466.417	3,263.733	11,290.895	1,193.839	1,875.662	542.849
2019	6/30/2019	3,205.990	29,857.182	478.012	3,331.602	11,685.697	1,195.321	1,851.208	558.914
2019	7/31/2019	3,288.044	29,829.949	469.082	3,464.451	11,810.826	1,274.213	1,989.620	562.153
2019	8/31/2019	3,884.746	32,110.699	480.794	3,654.773	10,594.814	1,247.870	2,087.461	582.798
2019	9/30/2019	3,786.405	31,552.483	486.230	3,485.801	10,711.334	1,312.817	2,086.324	664.804
2019	10/31/2019	3,980.509	31,431.278	485.879	3,625.583	10,819.222	1,350.758	2,206.163	669.734
2019	11/30/2019	3,620.848	31,026.340	492.349	3,405.560	10,629.068	1,394.308	2,163.663	678.928
2019	12/31/2019	3,670.581	31,355.352	493.271	3,413.263	11,205.363	1,407.556	2,170.492	702.048
2020	1/31/2020	3,741.313	33,768.714	498.659	3,461.408	12,284.567	1,437.014	2,235.658	718.284
2020	2/29/2020	3,321.663	31,843.781	466.908	3,283.261	10,810.825	1,301.150	3,151.102	652.432
2020	3/31/2020	3,511.490	31,126.337	498.652	3,397.807	11,201.474	1,312.483	3,056.183	668.987
2020	4/30/2020	3,426.059	31,517.277	475.551	3,191.238	11,468.551	1,315.831	3,106.331	628.114
2020	5/31/2020	3,550.718	32,843.911	479.889	3,292.562	15,977.179	1,451.846	3,233.842	682.602
2020	6/30/2020	3,426.051	33,144.409	490.099	3,326.661	15,604.716	1,439.987	3,213.031	728.972
2020	7/31/2020	3,361.504	36,513.246	480.649	3,383.125	16,366.794	1,394.988	3,223.009	707.480
2020	8/31/2020	3,342.280	35,704.383	488.618	3,307.546	16,052.756	1,397.813	3,245.849	700.589
2020	9/30/2020	3,300.601	36,345.845	481.605	3,214.184	15,486.091	1,363.233	3,198.199	657.053
2020	10/31/2020	3,291.012	37,366.024	488.471	3,269.510	15,725.350	1,401.172	3,193.349	656.793
2020	11/30/2020	3,259.697	38,014.499	513.794	3,534.809	16,590.019	1,477.460	3,358.436	696.617
2020	12/31/2020	3,469.596	38,030.813	514.725	3,761.581	17,083.015	1,546.988	3,465.807	716.975
2021	1/31/2021	3,386.596	39,036.873	547.444	3,791.984	16,840.196	1,671.545	3,374.713	675.737
2021	2/28/2021	3,245.232	36,222.602	515.978	3,893.920	15,986.424	1,485.815	3,323.574	651.856
2021	3/31/2021	3,340.061	37,685.571	541.459	3,963.904	16,764.010	1,666.677	3,400.003	766.019

		American States Water Company	American Water Works Company, Inc.	Artesian Resources Corporation	California Water Service Group	Essential Utilities, Inc.	Middlesex Water Company	SJW Group	The York Water Company
IQ_TEV	Total Enterprise Value								
2021	4/30/2021	3,472.960	38,787.077	548.064	4,123.256	17,349.628	1,719.388	3,442.143	800.898
2021	5/31/2021	3,503.694	38,895.355	553.306	4,026.161	17,480.428	1,798.882	3,409.374	782.208
2021	6/30/2021	3,510.708	38,733.847	513.800	3,960.076	16,968.753	1,724.948	3,375.116	716.451
2021	7/31/2021	3,834.066	41,633.725	533.442	4,378.985	17,809.166	2,090.894	3,565.949	755.147
2021	8/31/2021	4,010.188	44,081.595	540.347	4,423.820	18,053.677	2,226.277	3,577.871	804.546
2021	9/30/2021	3,763.240	41,684.037	529.782	4,185.729	17,181.238	2,110.315	3,480.408	701.239
2021	10/31/2021	3,959.617	42,616.925	549.980	4,252.000	17,424.538	2,251.487	3,520.518	756.755
2021	11/30/2021	4,085.497	41,691.818	576.037	4,364.055	17,716.969	2,128.318	3,563.170	748.481
2021	12/31/2021	4,427.527	45,375.219	607.616	4,829.636	19,339.578	2,430.317	3,737.653	786.746
2022	1/31/2022	4,013.472	40,281.270	623.558	4,315.656	18,088.501	2,096.824	3,608.207	729.610
2022	2/28/2022	3,732.609	38,400.829	608.322	4,096.303	17,883.367	2,079.496	3,555.659	722.403
2022	3/31/2022	3,912.119	41,029.501	628.164	4,222.530	19,040.466	2,174.185	3,687.988	738.296
2022	4/30/2022	3,530.984	38,716.435	609.522	3,836.918	17,428.769	1,893.110	3,372.977	699.191
2022	5/31/2022	3,563.128	38,202.183	630.033	3,933.709	18,041.991	1,824.977	3,459.152	736.815
2022	6/30/2022	3,646.648	37,751.435	630.804	4,034.802	17,935.876	1,871.509	3,476.085	728.980
2022	7/31/2022	3,855.817	39,863.729	656.852	4,338.696	19,512.074	2,013.281	3,610.024	765.450
2022	8/31/2022	3,736.380	38,598.202	703.687	4,254.445	19,148.482	1,906.446	3,568.887	742.936
2022	9/30/2022	3,550.856	35,273.327	643.650	3,937.006	17,111.415	1,702.701	3,366.228	663.898
2022	10/31/2022	4,013.186	38,243.846	679.906	4,446.526	17,861.286	1,931.177	3,787.037	737.087
2022	11/30/2022	4,317.869	39,417.198	701.492	4,603.871	19,223.387	2,001.379	3,908.618	777.289
2022	12/31/2022	4,116.802	39,537.205	736.984	4,368.676	19,089.619	1,740.680	4,105.693	767.153
2023	1/31/2023	4,176.679	40,277.244	740.620	4,397.733	18,827.328	1,832.225	3,991.086	773.863
2023	2/28/2023	3,996.679	37,923.461	720.256	4,182.275	18,019.716	1,715.257	4,001.471	745.738
2023	3/31/2023	4,014.661	40,888.375	715.839	4,319.377	18,402.915	1,744.109	3,991.909	778.775
2023	4/30/2023	4,009.485	39,870.915	716.100	4,278.123	18,151.764	1,653.428	3,985.431	740.771
2023	5/31/2023	4,068.918	39,131.270	710.352	4,324.596	17,515.070	1,815.441	4,018.866	756.502
2023	6/30/2023	4,001.621	38,800.375	689.094	4,028.963	17,295.635	1,803.064	3,817.103	740.205
2023	7/31/2023	4,053.758	40,099.998	666.609	4,192.111	17,924.858	1,820.370	3,859.884	741.063
2023	8/31/2023	3,941.537	38,408.327	645.669	4,032.277	16,679.806	1,728.791	3,710.570	741.290
2023	9/30/2023	3,737.055	35,505.818	605.880	3,862.633	16,000.026	1,568.884	3,531.076	694.781
2023	10/31/2023	3,713.760	34,302.766	578.143	3,947.632	15,769.906	1,520.610	3,679.773	674.460
2023	11/30/2023	3,804.453	37,239.907	607.530	4,056.706	16,580.242	1,544.753	3,780.681	713.444
2023	12/31/2023	3,823.683	37,269.113	601.892	4,131.731	17,055.550	1,575.380	3,771.421	721.177
2024	1/31/2024	3,608.456	35,717.314	555.384	3,750.838	16,653.345	1,403.546	3,585.890	681.936
2024	2/29/2024	3,545.178	35,149.296	531.067	3,857.709	16,609.473	1,313.088	3,502.694	675.061
2024	3/31/2024	3,575.878	35,864.048	558.671	3,891.737	17,237.914	1,347.638	3,551.746	700.539
2024	4/30/2024	3,541.104	35,893.603	537.832	4,130.748	17,109.362	1,315.915	3,520.673	689.645
2024	5/31/2024	3,643.981	38,024.947	539.350	4,175.218	17,339.072	1,386.125	3,529.054	718.074
2024	6/30/2024	3,606.007	37,711.283	533.105	4,094.363	17,229.662	1,357.243	3,513.259	718.792
2024	7/31/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
2024	8/31/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
2024	9/30/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
2024	10/31/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
2024	11/30/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
2024	12/31/2024	3,979.785	40,156.306	574.786	4,350.213	18,154.172	1,603.634	3,744.456	776.887
	MAX								

		American States Water Company	American Water Works Company, Inc.	Artesian Resources Corporation	California Water Service Group	Essential Utilities, Inc.	Middlesex Water Company	SJW Group	The York Water Company
IQ_TEV	Total Enterprise Value								
2014		$1,705.381	$15,480.025	$322.240	$1,706.069	$6,365.511	$534.208	$1,037.788	$381.175
2015		$1,854.358	$17,004.944	$363.938	$1,700.947	$7,010.227	$586.998	$1,071.732	$408.985
2016		$2,061.556	$21,709.652	$418.089	$2,254.717	$8,118.712	$851.037	$1,567.159	$572.095
2017		$2,484.712	$23,708.052	$503.036	$2,911.964	$9,024.830	$920.464	$1,834.526	$569.968
2018		$2,854.211	$25,542.931	$480.670	$3,118.722	$8,877.359	$1,070.612	$2,073.270	$521.201
2019		$3,980.509	$32,110.699	$493.271	$3,654.773	$11,810.826	$1,407.556	$2,206.163	$702.048
2020		$3,741.313	$38,030.813	$514.725	$3,761.581	$17,083.015	$1,546.988	$3,465.807	$728.972
2021		$4,427.527	$45,375.219	$607.616	$4,829.636	$19,339.578	$2,430.317	$3,737.653	$804.546
2022		$4,317.869	$41,029.501	$736.984	$4,603.871	$19,512.074	$2,174.185	$4,105.693	$777.289
2023		$4,176.679	$40,888.375	$740.620	$4,397.733	$18,827.328	$1,832.225	$4,018.866	$778.775
2024		$3,979.785	$40,156.306	$574.786	$4,350.213	$18,154.172	$1,603.634	$3,744.456	$776.887
		MIN							
2014		$1,408.915	$13,251.478	$298.616	$1,530.414	$5,805.341	$477.832	$915.588	$327.441
2015		$1,663.940	$14,776.135	$308.993	$1,513.172	$6,002.288	$508.673	$984.846	$355.474
2016		$1,783.573	$17,931.006	$360.465	$1,710.013	$7,127.461	$610.991	$1,063.895	$429.979
2017		$1,996.461	$19,905.567	$389.627	$2,252.318	$7,248.066	$729.496	$1,411.182	$511.596
2018		$2,328.275	$21,836.881	$418.441	$2,500.460	$8,050.059	$745.889	$1,533.329	$453.581
2019		$2,877.728	$25,589.887	$455.156	$3,208.128	$8,641.721	$1,117.347	$1,849.590	$518.356
2020		$3,259.697	$31,126.337	$466.908	$3,191.238	$10,810.825	$1,301.150	$2,235.658	$628.114
2021		$3,245.232	$36,222.602	$513.800	$3,791.984	$15,986.424	$1,485.815	$3,323.574	$651.856
2022		$3,530.984	$35,273.327	$608.322	$3,836.918	$17,111.415	$1,702.701	$3,366.228	$663.898
2023		$3,713.760	$34,302.766	$578.143	$3,862.633	$15,769.906	$1,520.610	$3,531.076	$674.460
2024		$3,541.104	$35,149.296	$531.067	$3,750.838	$16,609.473	$1,313.088	$3,502.694	$675.061
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
		MIDPOINT ENT VALUE							
2014		$1,557.148	$14,365.752	$310.428	$1,618.242	$6,085.426	$506.020	$976.688	$354.308
2015		$1,759.149	$15,890.539	$336.465	$1,607.060	$6,506.257	$547.835	$1,028.289	$382.229
2016		$1,922.564	$19,820.329	$389.277	$1,982.365	$7,623.087	$731.014	$1,315.527	$501.037
2017		$2,240.587	$21,806.809	$446.331	$2,582.141	$8,136.448	$824.980	$1,622.854	$540.782
2018		$2,591.243	$23,689.906	$449.556	$2,809.591	$8,463.709	$908.250	$1,803.300	$487.391
2019		$3,429.118	$28,850.293	$474.213	$3,431.450	$10,226.273	$1,262.452	$2,027.877	$610.202
2020		$3,500.505	$34,578.575	$490.816	$3,476.409	$13,946.920	$1,424.069	$2,850.732	$678.543
2021		$3,836.380	$40,798.910	$560.708	$4,310.810	$17,663.001	$1,958.066	$3,530.614	$728.201
2022		$3,924.427	$38,151.414	$672.653	$4,220.394	$18,311.744	$1,938.443	$3,735.961	$720.594
2023		$3,945.219	$37,595.571	$659.382	$4,130.183	$17,298.617	$1,676.417	$3,774.971	$726.617
2024		$3,760.445	$37,652.801	$552.926	$4,050.526	$17,381.822	$1,458.361	$3,623.575	$725.974
SPOT		$3,541.104	$35,893.603	$537.832	$4,130.748	$17,109.362	$1,315.915	$3,520.673	$689.645

	SPOT 4 2023	4 2023	4 2022	4 2021	4 2020	4 2019	4 2018	4 2017	4 2016	4 2015	4 2014	4 2013
	CQ42023 CQ42023	CQ42023 CQ42023	CQ42022 CQ42022	CQ42021 CQ42021	CQ42020 CQ42020	CQ42019 CQ42019	CQ42018 CQ42018	CQ42017 CQ42017	CQ42016 CQ42016	CQ42015 CQ42015	CQ42014 CQ42014	CQ42013 CQ42013
	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE	IQ_GPPE
	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment	Gross Property, Plant & Equipment
American States Water Company	2,532.952	2,532.952	2,378.337	2,270.982	2,126.262	2,001.858	1,866.538	1,746.634	1,692.519	1,599.336	1,521.295	1,468.948
American Water Works Company, Inc.	32,275.000	32,275.000	29,818.000	27,505.000	25,709.000	24,044.000	23,204.000	21,716.000	19,954.000	18,504.000	17,269.000	16,497.763
Artesian Resources Corporation	904.705	904.705	846.182	754.937	712.151	672.391	629.375	582.018	539.678	514.847	496.223	472.929
California Water Service Group	4,905.949	4,905.949	4,523.255	4,182.707	3,878.445	3,540.033	3,204.703	2,947.967	2,695.414	2,485.727	2,323.703	2,195.096
Essential Utilities, Inc.	15,014.437	15,014.437	13,779.121	12,659.306	11,680.353	8,214.803	7,648.469	7,003.993	6,509.117	6,088.011	5,707.017	5,350.868
Middlesex Water Company	1,252.689	1,252.689	1,153.975	1,083.822	1,000.470	893.664	785.863	712.990	662.635	617.412	592.589	566.285
SJW Group	4,129.656	4,129.656	3,876.151	3,654.971	3,403.010	3,192.780	1,976.448	1,834.123	1,704.585	1,576.208	1,467.612	1,374.327
The York Water Company	612.887	612.887	541.122	483.313	436.163	399.269	378.800	363.657	340.843	326.789	314.054	299.673

	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE	IQ_NPPE
	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment	Net Property, Plant & Equipment
American States Water Company	1,908.480	1,908.480	1,772.106	1,676.718	1,557.936	1,458.595	1,304.683	1,213.264	1,159.766	1,069.638	1,021.056	997.283
American Water Works Company, Inc.	25,524.000	25,524.000	23,305.000	21,176.000	19,805.000	18,335.000	17,409.000	16,246.000	14,992.000	13,933.000	13,029.000	12,388.354
Artesian Resources Corporation	718.483	718.483	672.238	594.633	563.817	535.013	502.527	464.384	429.383	409.562	397.823	383.102
California Water Service Group	3,765.909	3,765.909	3,470.882	2,849.059	2,654.027	2,409.873	2,220.873	2,036.971	1,847.460	1,689.251	1,579.060	1,503.612
Essential Utilities, Inc.	12,134.488	12,134.488	11,172.680	10,300.796	9,573.211	6,358.657	5,930.326	5,399.860	5,001.615	4,688.925	4,401.990	4,138.568
Middlesex Water Company	1,013.049	1,013.049	935.584	881.299	813.014	722.044	628.476	566.718	526.907	491.069	474.603	455.919
SJW Group	3,168.753	3,168.753	2,654.825	2,518.530	2,356.988	2,230.343	1,365.771	1,278.025	1,180.481	1,082.639	1,011.434	953.401
The York Water Company	495.273	495.273	431.901	383.626	344.365	313.993	299.871	289.524	271.652	262.189	253.959	245.000

		2023 Customers	2022 Customers	2021 Customers	2020 Customers	2019 Customers	2018 Customers	2017 Customers	2016 Customers	2015 Customers	2014 Customers	2013 Customers
American States Water Company	288,870	288,870	287,970	287,500	286,341	285,128	284,272	283,223	284,942	283,997	280,717	279,036
American Water Works Company, Inc.	3,486,000	3,486,000	3,449,000	3,530,000	3,496,000	3,434,000	3,382,000	3,353,000	3,312,000	3,252,691	3,219,499	3,158,226
Artesian Resources Corporation	106,640	106,640	104,740	100,640	95,640	92,640	90,440	86,500	85,000	81,400	81,900	81,200
California Water Service Group	553,600	553,600	553,000	547,600	543,000	520,600	517,500	514,300	511,500	508,404	502,900	500,700
Essential Utilities, Inc.	1,857,461	1,857,461	1,851,586	1,820,049	1,798,803	1,026,704	1,005,590	982,949	972,265	920,381	941,007	930,577
Middlesex Water Company	125,300	125,300	122,300	121,300	122,200	120,000	113,300	114,920	109,300	108,720	105,720	102,010
SJW Group	405,350	405,350	402,900	398,000	389,293	386,607	247,267	244,133	242,421	241,000	238,977	237,600
The York Water Company	77,893	77,893	76,731	73,144	72,681	71,411	70,263	69,604	67,052	66,000	64,118	63,779

		2023 population	2022 population	2021 population	2020 population	2019 population	2018 population	2017 population	2016 population	2015 population	2014 population	2013 population
American States Water Company	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
American Water Works Company, Inc.	14,000,000	14,000,000	14,000,000	14,000,000	15,000,000	15,000,000	14,000,000	15,000,000	12,200,000	12,100,000	11,500,000	11,400,000
Artesian Resources Corporation	325,740	325,740	324,220	326,700	300,000	300,000	300,000	290,000	314,300	301,000	260,000	260,000
California Water Service Group	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	1,600,000	1,600,000	1,600,000
Essential Utilities, Inc.	5,500,000	5,500,000	5,000,000	5,000,000	5,000,000	3,000,000	3,000,000	3,000,000	3,053,800	2,890,800	3,000,000	3,000,000
Middlesex Water Company	500,000	500,000	500,000	500,000	500,000	400,000	400,000	412,000	400,000	390,000	385,878	400,000
SJW Group	1,544,000	1,544,000	1,536,000	1,526,000	1,614,866	1,604,442	1,114,200	1,100,200	1,092,600	1,089,000	1,077,000	1,071,000
The York Water Company	209,000	209,000	208,000	204,000	202,000	201,000	199,000	198,000	196,000	194,000	190,000	189,000

	1	2	3	4	5	6	7	8	9	10	11	12
	SPOT		2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Average Gross Property, Plant & Equipment												
American States Water Company	2,532.952		2,455.645	2,324.660	2,198.622	2,064.060	1,934.198	1,806.586	1,719.577	1,645.928	1,560.316	1,495.122
American Water Works Company, Inc.	32,275.000		31,046.500	28,661.500	26,607.000	24,876.500	23,624.000	22,460.000	20,835.000	19,229.000	17,886.500	16,883.382
Artesian Resources Corporation	904.705		875.444	800.560	733.544	692.271	650.883	605.697	560.848	527.263	505.535	484.576
California Water Service Group	4,905.949		4,714.602	4,352.981	4,030.576	3,709.239	3,372.368	3,076.335	2,821.691	2,590.571	2,404.715	2,259.400
Essential Utilities, Inc.	15,014.437		14,396.779	13,219.214	12,169.830	9,947.578	7,931.636	7,326.231	6,756.555	6,298.564	5,897.514	5,528.943
Middlesex Water Company	1,252.689		1,203.332	1,118.899	1,042.146	947.067	839.764	749.427	687.813	640.024	605.001	579.437
SJW Group	4,129.656		4,002.904	3,765.561	3,528.991	3,297.895	2,584.614	1,905.286	1,769.354	1,640.397	1,521.910	1,420.970
The York Water Company	612.887		577.005	512.218	459.738	417.716	389.035	371.229	352.250	333.816	320.422	306.864
Average Net Property, Plant & Equipment												
American States Water Company	1,908.480		1,840.293	1,724.412	1,617.327	1,508.266	1,381.639	1,258.974	1,186.515	1,114.702	1,045.347	1,009.170
American Water Works Company, Inc.	25,524.000		24,414.500	22,240.500	20,490.500	19,070.000	17,872.000	16,827.500	15,619.000	14,462.500	13,481.000	12,708.677
Artesian Resources Corporation	718.483		695.361	633.436	579.225	549.415	518.770	483.456	446.884	419.473	403.693	390.463
California Water Service Group	3,765.909		3,618.396	3,159.971	2,751.543	2,531.950	2,315.373	2,128.922	1,942.216	1,768.356	1,634.156	1,541.336
Essential Utilities, Inc.	12,134.488		11,653.584	10,736.738	9,937.004	7,965.934	6,144.492	5,665.093	5,200.738	4,845.270	4,545.458	4,270.279
Middlesex Water Company	1,013.049		974.317	908.442	847.157	767.529	675.260	597.597	546.813	508.988	482.836	465.261
SJW Group	3,168.753		2,911.789	2,586.678	2,437.759	2,293.666	1,798.057	1,321.898	1,229.253	1,131.560	1,047.037	982.418
The York Water Company	495.273		463.587	407.764	363.996	329.179	306.932	294.698	280.588	266.921	258.074	249.480
Average Customers												
American States Water Company	288,870		288,420	287,735	286,921	285,735	284,700	283,748	284,083	284,470	282,357	279,877
American Water Works Company, Inc.	3,486,000		3,467,500	3,489,500	3,513,000	3,465,000	3,408,000	3,367,500	3,332,500	3,282,346	3,236,095	3,188,863
Artesian Resources Corporation	106,640		105,690	102,690	98,140	94,140	91,540	88,470	85,750	83,200	81,650	81,550
California Water Service Group	553,600		553,300	550,300	545,300	531,800	519,050	515,900	512,900	509,952	505,652	501,800
Essential Utilities, Inc.	1,857,461		1,854,524	1,835,818	1,809,426	1,412,754	1,016,147	994,270	977,607	946,323	930,694	935,792
Middlesex Water Company	125,300		123,800	121,800	121,750	121,100	116,650	114,110	112,110	109,010	107,220	103,865
SJW Group	405,350		404,125	400,450	393,647	387,950	316,937	245,700	243,277	241,711	239,989	238,289
The York Water Company	77,893		77,312	74,938	72,913	72,046	70,837	69,934	68,328	66,526	65,059	63,949
Average Population												
American States Water Company	1,000,000		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
American Water Works Company, Inc.	14,000,000		14,000,000	14,000,000	14,500,000	15,000,000	14,500,000	14,500,000	13,600,000	12,150,000	11,800,000	11,450,000
Artesian Resources Corporation	325,740		324,980	325,460	313,350	300,000	300,000	295,000	302,150	307,650	280,500	260,000
California Water Service Group	2,000,000		2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	1,800,000	1,600,000	1,600,000
Essential Utilities, Inc.	5,500,000		5,250,000	5,000,000	5,000,000	4,000,000	3,000,000	3,000,000	3,026,900	2,972,300	2,945,400	3,000,000
Middlesex Water Company	500,000		500,000	500,000	500,000	450,000	400,000	406,000	406,000	395,000	387,939	392,939
SJW Group	1,544,000		1,540,000	1,531,000	1,570,433	1,609,654	1,359,321	1,107,200	1,096,400	1,090,800	1,083,000	1,074,000
The York Water Company	209,000		208,500	206,000	203,000	201,500	200,000	198,500	197,000	195,000	192,000	189,500

Midpoint Ent Value

3	American States Water Company	3,541	3,945	3,924	3,836	3,501	3,429	2,591	2,241	1,923	1,759	1,557
4	American Water Works Company, Inc.	35,894	37,596	38,151	40,799	34,579	28,850	23,690	21,807	19,820	15,891	14,366
5	Artesian Resources Corporation	538	659	673	561	491	474	450	446	389	336	310
6	California Water Service Group	4,131	4,130	4,220	4,311	3,476	3,431	2,810	2,582	1,982	1,607	1,618
7	Essential Utilities, Inc.	17,109	17,299	18,312	17,663	13,947	10,226	8,464	8,136	7,623	6,506	6,085
8	Middlesex Water Company	1,316	1,676	1,938	1,958	1,424	1,262	908	825	731	548	506
9	SJW Group	3,521	3,775	3,736	3,531	2,851	2,028	1,803	1,623	1,316	1,028	977
10	The York Water Company	690	727	721	728	679	610	487	541	501	382	354

Midpoint GPPE

3	American States Water Company	1.40	1.61	1.69	1.74	1.70	1.77	1.43	1.30	1.17
4	American Water Works Company, Inc.	1.11	1.21	1.33	1.53	1.39	1.22	1.05	1.05	1.03
5	Artesian Resources Corporation	0.59	0.75	0.84	0.76	0.71	0.73	0.74	0.80	0.74
6	California Water Service Group	0.84	0.88	0.97	1.07	0.94	1.02	0.91	0.92	0.77
7	Essential Utilities, Inc.	1.14	1.20	1.39	1.45	1.40	1.29	1.16	1.20	1.21
8	Middlesex Water Company	1.05	1.39	1.73	1.88	1.50	1.50	1.21	1.20	1.14
9	SJW Group	0.85	0.94	0.99	1.00	0.86	0.78	0.95	0.92	0.80
10	The York Water Company	1.13	1.26	1.41	1.58	1.62	1.57	1.31	1.54	1.50
	Median	1.08	1.21	1.36	1.49	1.40	1.26	1.11	1.12	1.09

Midpoint NPPE

3	American States Water Company	1.86	2.14	2.28	2.37	2.32	2.48	2.06	1.89	1.72
4	American Water Works Company, Inc.	1.41	1.54	1.72	1.99	1.81	1.61	1.41	1.40	1.37
5	Artesian Resources Corporation	0.75	0.95	1.06	0.97	0.89	0.91	0.93	1.00	0.93
6	California Water Service Group	1.10	1.14	1.34	1.57	1.37	1.48	1.32	1.33	1.12
7	Essential Utilities, Inc.	1.41	1.48	1.71	1.78	1.75	1.66	1.49	1.56	1.57
8	Middlesex Water Company	1.30	1.72	2.13	2.31	1.86	1.87	1.52	1.51	1.44
9	SJW Group	1.11	1.30	1.44	1.45	1.24	1.13	1.36	1.32	1.16
10	The York Water Company	1.39	1.57	1.77	2.00	2.06	1.99	1.65	1.93	1.88
	Median	1.35	1.51	1.71	1.88	1.78	1.64	1.45	1.45	1.40

Midpoint Customers

3	American States Water Company	12,258	13,679	13,639	13,371	12,251	12,045	9,132	7,887	6,758
4	American Water Works Company, Inc.	10,297	10,842	10,933	11,614	9,979	8,465	7,035	6,544	6,038
5	Artesian Resources Corporation	5,043	6,239	6,550	5,713	5,214	5,180	5,081	5,205	4,679
6	California Water Service Group	7,462	7,465	7,669	7,905	6,537	6,611	5,446	5,034	3,887
7	Essential Utilities, Inc.	9,211	9,328	9,975	9,762	9,872	10,064	8,512	8,323	8,055
8	Middlesex Water Company	10,502	13,541	15,915	16,083	11,759	10,823	7,959	7,359	6,706
9	SJW Group	8,686	9,341	9,329	8,969	7,348	6,398	7,339	6,671	5,443
10	The York Water Company	8,854	9,399	9,616	9,987	9,418	8,614	6,969	7,914	7,531
	Median	9,032	9,370	9,795	9,874	9,645	8,540	7,187	7,015	6,372

Midpoint Population

3	American States Water Company	3,541	3,945	3,924	3,836	3,501	3,429	2,591	2,241	1,923
4	American Water Works Company, Inc.	2,564	2,685	2,725	2,814	2,305	1,990	1,634	1,603	1,631
5	Artesian Resources Corporation	1,651	2,029	2,067	1,789	1,636	1,581	1,524	1,477	1,265
6	California Water Service Group	2,065	2,065	2,110	2,155	1,738	1,716	1,405	1,291	1,101
7	Essential Utilities, Inc.	3,111	3,295	3,662	3,533	3,487	3,409	2,821	2,688	2,565
8	Middlesex Water Company	2,632	3,353	3,877	3,916	3,165	3,156	2,237	2,032	1,851
9	SJW Group	2,280	2,451	2,440	2,248	1,771	1,492	1,629	1,480	1,206
10	The York Water Company	3,300	3,485	3,498	3,587	3,367	3,051	2,455	2,745	2,569

Median	2,598	2,990	3,112	3,173	2,735	2,520	1,935	1,818	1,741

	SPOT	2023	2022	2021	2020	2019	2018	2017	2016
Median Enterprise Value as a Multiple of:									
GPPE	1.08	1.21	1.36	1.49	1.40	1.26	1.11	1.12	1.09
NPPE	1.35	1.51	1.71	1.88	1.78	1.64	1.45	1.45	1.40
Customers	9,032	9,370	9,795	9,874	9,645	8,540	7,187	7,015	6,372
Population	2,598	2,990	3,112	3,173	2,735	2,520	1,935	1,818	1,741

	SPOT	2023	2022	2021	2020	2019	2018	2017	2016
Index Values of Multiples:									
GPPE	1.00	1.12	1.26	1.38	1.29	1.16	1.02	1.04	1.00
NPPE	1.00	1.12	1.27	1.40	1.32	1.22	1.08	1.08	1.04
Customers	1.00	1.04	1.08	1.09	1.07	0.95	0.80	0.78	0.71
Population	1.00	1.15	1.20	1.22	1.05	0.97	0.75	0.70	0.67

NetPlant Advances CIAC DefTax ITC

		2023 Net Property, Plant & Equipment	Advances for construction	Contributions in aid of construction	Deferred income taxes, net	Deferred investment tax credits	2023 Known "Cost Free" Capital	2023 Percentage of Known "Cost Free" Capital
		(Millions of $)						
	Comparable Group							
1	American States Water Co	$1,892.280	$67.431	$151.414	$161.577	$1.011	$381.433	20%
2	American Water Works Co Inc	$25,438.000	$352.000	$1,551.000	$1,481.000	$0.000	$3,384.000	13%
3	Artesian Resources -CL A	$714.284	$2.797	$247.934	$58.381	$0.423	$309.535	43%
4	California Water Service Gp	$3,773.255	$199.448	$286.491	$352.762	$0.000	$838.701	22%
5	Essential Utilities, Inc.	$12,097.072	$128.755	$645.066	$1,628.324	$0.000	$2,402.145	20%
6	Middlesex Water Co	$998.342	$21.313	$122.270	$88.736	$0.000	$232.319	23%
7	SJW Corp	$3,183.810	$146.582	$326.451	$238.528	$0.000	$711.561	22%
8	York Water Co	$495.273	$18.853	$47.321	$55.235	$0.000	$121.409	25%
	Median							22%

CONSOLIDATED BALANCE SHEETS - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
Regulated utility plant, at cost		
Water	$2,082,927	$2,006,468
Electric	156,471	133,815
Total	2,239,398	2,140,283
Non-regulated utility property, at cost	40,223	38,066
Total utility plant, at cost	2,279,621	2,178,349
Less — accumulated depreciation	-624,472	-606,231
Utility plant before construction work in progress	1,655,149	1,572,118
Construction work in progress	237,131	181,648
Net utility plant	1,892,280	1,753,766
Other Property and Investments		
Goodwill	1,116	1,116
Other property and investments	42,932	36,907
Total other property and investments	44,048	38,023
Current Assets		
Cash and cash equivalents	14,073	5,997
Accounts receivable — customers, less allowance for doubtful accounts	34,250	26,206
Unbilled receivable (Note 2)	23,516	20,663
Receivable from U.S. government, less allowance for doubtful accounts (Note 2)	49,306	34,974
Other accounts receivable, less allowance for doubtful accounts	6,340	4,215
Income taxes receivable	52	3901
Materials and supplies	17,574	14,623
Regulatory assets — current	45,144	14,028
Prepayments and other current assets	5,767	5,450
Contract assets (Note 2)	9,956	9,390
Purchase power contract derivatives at fair value	0	11,847
Total current assets	205,978	151,294
Regulatory and Other Assets		
Unbilled revenue, receivable from U.S government	4,886	6,456
Receivable from U.S. government (Note 2)	42,183	50,482
Contract assets (Note 2)	4,422	5,592
Operating lease right-of-use assets	7,982	9,535
Regulatory assets	25,585	5,694
Other	18,758	13,532
Total other assets	103,816	91,291
Total Assets	2,246,122	2,034,374
Capitalization		
Common shareholder's equity	776,109	709,549
Long-term debt	575,555	446,547
Total capitalization	1,351,664	1,156,096
Current Liabilities		
Notes payable to bank	42,000	255,500
Long-term debt — current	353	399
Accounts payable	68,705	84,849
Income taxes payable	492	1,848
Accrued other taxes	14,654	16,257
Accrued employee expenses	14,738	13,996
Accrued interest	8,607	5,308
Regulatory liabilities	0	4,574
Contract liabilities (Note 2)	1352	903
Operating lease liabilities	1,856	1,892
Purchase power contract derivative at fair value (Note 5)	2,360	0
Other	11,506	10,996
Total current liabilities	166623	396522
Other Credits		
Note payable to bank, noncurrent	291,500	22,000
Advances for construction	67,431	64,351
Contributions in aid of construction — net	151,414	147,918
Deferred income taxes	161,577	149,677
Regulatory liabilities	1,222	40,602
Unamortized investment tax credits	1,011	1,082
Accrued pension and other post-retirement benefits	32,652	33,636
Operating lease liabilities	6,619	8,090
Other	14,409	14,400
Total other credits	727,835	481,756
Commitments and Contingencies		
Total liabilities and capitalization	$2,246,122	$2,034,374

NetPlant	1,892,280	1,753,766
Advances	67,431	64,351
CIAC	151,414	147,918
DefTax	161,577	149,677
ITC	1,011	1,082

Consolidated Balance Sheets - USD ($) $ in Millions	Dec. 31, 2023	Dec. 31, 2022
ASSETS		
Property, plant and equipment	$32,189	$29,736
Accumulated depreciation	-6,751	-6,513
Property, plant and equipment, net	25,438	23,223
Current assets:		
Cash and cash equivalents	330	85
Restricted funds	34	32
Accounts receivable, net of allowance for uncollectible accounts of $51 and $60, respectively	339	334
Income tax receivable	86	114
Unbilled revenues	302	275
Materials and supplies	112	98
Other	186	312
Total current assets	1,389	1,250
Regulatory and other long-term assets:		
Regulatory assets	1106	990
Seller promissory note from the sale of the Homeowner Services Group	720	720
Operating lease right-of-use assets	86	82
Goodwill	1,143	1,143
Other	416	379
Total regulatory and other long-term assets	3,471	3,314
Total assets	30,298	27,787
Capitalization:		
Common stock ($0.01 par value; 500,000,000 shares authorized; 200,144,968 and 187,200,539 shares issued, respectively)	2	2
Paid-in-capital	8,550	6,824
Retained earnings	1,659	1267
Accumulated other comprehensive loss	-26	-23
Treasury stock, at cost (5,414,867 and 5,342,477 shares, respectively)	-388	-377
Total common shareholders' equity	9,797	7,693
Long-term debt	11,715	10,926
Redeemable preferred stock at redemption value	3	3
Total long-term debt	11,718	10,929
Total capitalization	21,515	18,622
Current liabilities:		
Short-term debt	179	1175
Current portion of long-term debt	475	281
Accounts payable	294	254
Accrued liabilities	791	706
Accrued taxes	67	49
Accrued interest	93	91
Other	252	255
Total current liabilities	2,151	2,811
Regulatory and other long-term liabilities:		
Advances for construction	352	316
Deferred income taxes and investment tax credits	2,717	2,437
Regulatory liabilities	1,481	1,590
Operating lease liabilities	73	70
Accrued pension expense	262	235
Other	196	202
Total regulatory and other long-term liabilities	5,081	4,850
Contributions in aid of construction	1,551	1,504
Commitments and contingencies		
Total capitalization and liabilities	$30,298	$27,787

NetPlant	25,438	23,223
Advances	352	316
CIAC	1,551	1,504
DefTax	1,481	1,590
ITC	0	0

CONSOLIDATED BALANCE SHEETS - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
ASSETS		
Utility plant, at original cost (less accumulated depreciation - 2023 - $185,170; 2022 - $172,954	$714,284	$668,031
Current assets		
Cash and cash equivalents	2,505	1309
Accounts and other receivables (less provision for expected credit loss 2023 - $328; 2022 - $41	12,830	13,511
Income tax receivable	1,799	1,632
Unbilled operating revenues	1,934	1,586
Materials and supplies	5,983	4,702
Prepaid property taxes	2,269	2,186
Prepaid expenses and other	3,297	2,878
Total current assets	30,617	27,804
Other assets		
Non-utility property (less accumulated depreciation - 2023 - $1,052; 2022 - $990)	3,693	3,740
Other deferred assets	8,504	10,536
Goodwill	1,939	1939
Operating lease right of use assets	506	467
Total other assets	14,642	16,682
Regulatory assets, net	7,289	7,274
Total assets	766,832	719,791
Stockholders' equity		
Common stock	10,285	9,502
Preferred stock	0	0
Additional paid-in capital	143,369	107,142
Retained earnings	76,743	71,286
Total stockholders' equity	230,397	187,930
Long-term debt, net of current portion	178,307	175,619
Total stockholders' equity and long-term debt	408,704	363,549
Current liabilities		
Lines of credit	0	20,174
Current portion of long-term debt	2,235	2,003
Accounts payable	9,697	10,929
Accrued expenses	3,519	4,246
Overdraft payable	9	43
Accrued interest	2275	989
Income taxes payable	2	6
Customer and other deposits	2,983	2,489
Other	1,694	3,191
Total current liabilities	22,414	44,070
Commitments and contingencies		
Deferred credits and other liabilities		
Net advances for construction	2,797	3,686
Operating lease liabilities	503	466
Regulatory liabilities	25,676	28,721
Deferred investment tax credits	423	439
Deferred income taxes	58,381	54,552
Total deferred credits and other liabilities	87,780	87,864
Net contributions in aid of construction	247,934	224,308
Total Liabilities and Stockholders' Equity	$766,832	$719,791

NetPlant	714,284	668,031
Advances	2,797	3,686
CIAC	247,934	224,308
DefTax	58,381	54,552
ITC	423	439

Consolidated Balance Sheets - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
Utility plant:		
Land	$47,002	$45,861
Depreciable plant and equipment	4,557,964	4,215,619
Construction work in progress	287,596	247,013
Intangible assets	32,921	27,779
Total utility plant	4,925,483	4,536,272
Less accumulated depreciation and amortization	-1,152,228	-1,063,341
Net utility plant	3,773,255	3,472,931
Current assets:		
Cash and cash equivalents	39,591	62,100
Restricted cash	45,375	22,925
Receivables:		
Customers, net	59,349	55,079
Regulatory balancing accounts	64,240	66,826
Other, net	16,431	20,932
Unbilled revenue, net	36,999	33,140
Materials and supplies at weighted average cost	16,170	12,564
Taxes, prepaid expenses, and other assets	18,130	21,969
Total current assets	296,285	295,535
Other assets:		
Regulatory assets	257,621	283,620
Goodwill	37,039	36,814
Other	231,333	175,913
Total other assets	525,993	496,347
TOTAL ASSETS	4,595,533	4,264,813
Capitalization:		
Common stock, $0.01 par value; 136,000 shares authorized, 57,724 and 55,598 outstanding in 2023 and 2022, respectively	577	556
Additional paid-in capital	876,583	760,336
Retained earnings	549,573	556,698
Noncontrolling interests	3,579	4,804
Total equity	1,430,312	1,322,394
Long-term debt, net	1,052,768	1,052,487
Total capitalization	2,483,080	2,374,881
Current liabilities:		
Current maturities of long-term debt, net	672	3,310
Short-term borrowings	180,000	70,000
Accounts payable	157,305	140,986
Regulatory balancing accounts	21,540	12,240
Accrued other taxes	4,591	8,607
Accrued interest	6,625	6,490
Other accrued liabilities	59,606	53,017
Total current liabilities	430,339	294,650
Deferred income taxes	352,762	330,251
Regulatory Liabilities	683,717	627,740
Pension	82,920	78,443
Advances for construction	199,448	199,832
Contributions in aid of construction	286,491	285,401
Other long-term liabilities	76,776	73,615
Commitments and contingencies (Note 14)		
TOTAL CAPITALIZATION AND LIABILITIES	$4,595,533	$4,264,813

NetPlant	3,773,255	3,472,931
Advances	199,448	199,832
CIAC	286,491	285,401
DefTax	352,762	330,251
ITC	0	0

Consolidated Balance Sheets - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
Assets		
Property, plant and equipment, at cost	$14,977,021	$13,737,387
Less: accumulated depreciation	2,879,949	2,606,441
Net property, plant and equipment	12,097,072	11,130,946
Current assets:		
Cash and cash equivalents	4,612	11,398
Accounts receivable, net	144,300	206,324
Unbilled revenues	101,436	170,504
Inventory - materials and supplies	47,494	46,592
Inventory - gas stored	65,173	153,143
Current assets held for sale		11167
Prepayments and other current assets	99,884	39,759
Regulatory assets	29,080	19,272
Total current assets	491,979	658,159
Regulatory assets	1,766,892	1,342,753
Deferred charges and other assets, net	102,388	166,653
Funds restricted for construction activity	1,381	1,342
Goodwill	2,340,738	2,340,792
Non-current assets held for sale		32124
Operating lease right-of-use assets	37,416	41,734
Intangible assets	3,593	4,604
Total assets	16,841,459	15,719,107
Essential Utilities stockholders' equity:		
Common stock at $0.50 par value, authorized 600,000,000 shares, issued 276,595,228 and 266,973,321 as of December 31, 2023 and December 31, 2022	138,297	133,486
Capital in excess of par value	4,137,696	3,793,262
Retained earnings	1,706,675	1,534,331
Treasury stock, at cost, 3,299,191 and 3,236,237 shares as of December 31, 2023 and December 31, 2022	-86,485	-83,693
Total stockholders' equity	5,896,183	5,377,386
Long-term debt, excluding current portion	6,870,593	6,418,039
Less: debt issuance costs	44,508	46,982
Long-term debt, excluding current portion, net of debt issuance costs	6,826,085	6,371,057
Commitments and contingencies (See Note 9)		
Current liabilities:		
Current portion of long-term debt	67,415	199,356
Loans payable	160,123	228,500
Accounts payable	221,191	238,843
Book overdraft	13,358	28,694
Accrued interest	53,084	47,063
Accrued taxes	40,641	34,393
Liabilities related to assets held for sale		3263
Regulatory liabilities	31,270	35276
Dividends payable	83,929	75808
Other accrued liabilities	126,916	130,673
Total current liabilities	797,927	1,021,869
Deferred credits and other liabilities:		
Deferred income taxes and investment tax credits	1,628,324	1,345,766
Customers' advances for construction	128,755	114,732
Regulatory liabilities	820,910	778,754
Asset retirement obligations	848	843
Operating lease liabilities	34,425	37,666
Non-current liabilities related to assets held for sale		974
Pension and other postretirement benefit liabilities	38,850	31,244
Other	24,086	28,562
Total deferred credits and other liabilities	2,676,198	2,338,541
Contributions in aid of construction	645,066	610,254
Total liabilities and equity	$15,719,107	$14,658,278

NetPlant	12,097,072	11,130,946
Advances	128,755	114,732
CIAC	645,066	610,254
DefTax	1,628,324	1,345,766
ITC	0	0

CONSOLIDATED BALANCE SHEETS - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
Statement of Financial Position [Abstract]		
Water Production	$303,791	$249,153
Transmission and Distribution	809,862	735,138
General	100,593	97,581
Construction Work in Progress	19,636	53,570
TOTAL	1,233,882	1,135,442
Less Accumulated Depreciation	235,540	214,891
UTILITY PLANT - NET	998,342	920,551
Cash and Cash Equivalents	2,390	3,828
Accounts Receivable, net of allowance for uncollectible accounts of $2,137 and $2,326, respectively	18,172	16,018
Litigation Settlement Receivable	69,872	
Unbilled Revenues	9,297	8,659
Materials and Supplies (at average cost)	6,972	6,177
Prepayments	1833	2624
TOTAL CURRENT ASSETS	108,536	37,306
Operating Lease Right of Use Asset	3,185	3,826
Preliminary Survey and Investigation Charges	1,932	2,806
Regulatory Assets	90,694	90,046
Non-utility Assets - Net	11,522	11,207
Employee Benefit Plans	21,779	8689
Other	62	19
TOTAL OTHER ASSETS	129,174	116,593
TOTAL ASSETS	1,236,052	1,074,450
CAPITALIZATION AND LIABILITIES		
Common Stock, No Par Value	246,764	233,054
Retained Earnings	176,227	167,274
TOTAL COMMON EQUITY	422,991	400,328
Preferred Stock	2,084	2,084
Long-term Debt	358,153	290,280
TOTAL CAPITALIZATION	783,228	692,692
Current Portion of Long-term Debt	7,740	17,462
Notes Payable	42,750	55,500
Accounts Payable	27,618	24,847
Litigation Settlement Payable	6,237	
Accrued Taxes	10,535	12,162
Accrued Interest	3,138	2,535
Unearned Revenues and Advanced Service Fees	1,390	1,365
Other	4421	3988
TOTAL CURRENT LIABILITIES	103,829	117,859
COMMITMENTS AND CONTINGENT LIABILITIES (Note 4)		
Customer Advances for Construction	21,313	21,382
Lease Obligations	3,063	3,706
Accumulated Deferred Income Taxes	88,736	77,783
Regulatory Liabilities	113021	46,734
Other	592	919
TOTAL OTHER LIABILITIES	226,725	150,524
CONTRIBUTIONS IN AID OF CONSTRUCTION	122,270	113,375
TOTAL CAPITALIZATION AND LIABILITIES	$1,236,052	$1,074,450

NetPlant	998,342	920,551
Advances	21,313	21,382
CIAC	122,270	113,375
DefTax	88,736	77,783
ITC	0	0

Consolidated Balance Sheets - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
Utility plant:		
Land	$41,415	$39,982
Depreciable plant and equipment	3,967,911	3,661,285
Construction work in progress	106,980	116,851
Intangible assets	35,946	35,959
Total utility plant	4,152,252	3,854,077
Less accumulated depreciation and amortization	981,598	1,223,760
Net utility plant	3,170,654	2,630,317
Nonutility properties and real estate investments	13,350	58,033
Less accumulated depreciation and amortization	194	17,158
Net nonutility properties and real estate investments	13,156	40,875
Current assets:		
Cash and cash equivalents	9,723	12,344
Accounts receivable:		
Customers, net of allowances for uncollectible accounts of $6,551 and $5,753 in 2023 and 2022, respectively	67,870	59,172
Income tax	5187	0
Other	3,684	5,560
Accrued unbilled revenue	49,543	45,722
Assets held for sale	40,850	0
Prepaid expenses	11,110	9,753
Current regulatory assets	4,276	19,740
Other current assets	6146	6095
Total current assets	198,389	158,386
Other assets:		
Regulatory assets, less current portion	235,910	246,035
Investments	16,411	14,819
Postretirement benefit plans	33,794	16,990
Other intangible asset	28,386	0
Goodwill	640,311	640,311
Other	8,056	7,323
Total other assets	962,868	925,478
Total assets	4,345,067	3,755,056
Stockholders' equity:		
Common stock, $0.001 par value; authorized 70,000,000 shares in 2023 and 2022; issued and outstanding 32,023,004 shares i	32	31
Additional paid-in capital	736,191	651,004
Retained earnings	495,383	458,356
Accumulated other comprehensive income	1,791	1,477
Total stockholders' equity	1,233,397	1,110,868
Long-term debt, less current portion	1,526,699	1,491,965
Total capitalization	2,760,096	2,602,833
Current liabilities:		
Lines of credit	171,500	159,578
Current portion of long-term debt	48,975	4,360
Accrued groundwater extraction charges, purchased water and power	24,479	19,707
Accounts payable	46,121	29,581
Accrued interest	15,816	13,907
Accrued payroll	12,229	11,908
Income tax payable	0	2696
Current regulatory liabilities	3,059	3,672
Other current liabilities	20795	22913
Total current liabilities	342,974	268,322
Deferred income taxes	238,528	218,155
Advances for construction	146,582	137,696
Contributions in aid of construction	326,451	323,668
Postretirement benefit plans	46,836	59,738
Regulatory liabilities, less current portion	461,108	118,760
Other noncurrent liabilities	22,492	25,884
Commitments and contingencies		
Total equity and liabilities	$4,345,067	$3,755,056

NetPlant	3,183,810	2,671,192
Advances	146,582	137,696
CIAC	326,451	323,668
DefTax	238,528	218,155
ITC	0	0

Balance Sheets - USD ($) $ in Thousands	Dec. 31, 2023	Dec. 31, 2022
ASSETS		
UTILITY PLANT, at original cost	$620,201	$549,141
Plant acquisition adjustments	-9,384	-9,178
Accumulated depreciation	-117,113	-108,758
Net utility plant	493,704	431,205
OTHER PHYSICAL PROPERTY, net of accumulated depreciation of $501 in 2023 and $463 in 2022	1,569	696
CURRENT ASSETS:		
Cash and cash equivalents	1	1
Accounts receivable, net of reserves of $1,005 in 2023 and $855 in 2022	7,837	6,701
Unbilled revenues	3,484	3,290
Recoverable income taxes	332	882
Materials and supplies inventories, at cost	3,109	2,335
Prepaid expenses	821	1,025
Total current assets	15,584	14,234
OTHER LONG-TERM ASSETS:		
Prepaid pension cost	23,380	17,090
Note receivable	255	255
Deferred regulatory assets	48,949	42,545
Other assets	4,764	4,570
Total other long-term assets	77,348	64,460
Total Assets	588,205	510,595
COMMON STOCKHOLDERS' EQUITY:		
Common stock, no par value, authorized 46,500,000 shares, issued and outstanding 14,332,245 shares in 2023 and 14,285,584 shares in 2022	136,174	134,220
Retained earnings	85,004	72,963
Total common stockholders' equity	221,178	207,183
PREFERRED STOCK, authorized 500,000 shares, no shares issued	0	0
LONG-TERM DEBT	180,007	139,465
COMMITMENTS		
CURRENT LIABILITIES:		
Accounts payable	10873	10,766
Dividends payable	2,754	2,628
Accrued compensation and benefits	1,629	1,541
Accrued interest	1,741	965
Deferred regulatory liabilities	644	593
Other accrued expenses	502	488
Total current liabilities	18,143	16,981
DEFERRED CREDITS:		
Customers' advances for construction	18,853	14,911
Deferred income taxes	55,235	47,901
Deferred employee benefits	3,847	3,725
Deferred regulatory liabilities	42,989	37,448
Other deferred credits	632	680
Total deferred credits	121,556	104,665
Contributions in aid of construction	47,321	42,301
Total Stockholders' Equity and Liabilities	$588,205	$510,595

NetPlant	495,273	431,901
Advances	18,853	14,911
CIAC	47,321	42,301
DefTax	55,235	47,901
ITC	0	0

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

ADR21014 I January 2023

Analytical Data Report

Population and Employment Forecasts
2015–2050

DELAWARE VALLEY li..data

The Delaware Valley Regional Planning Commission is the federally designated Metropolitan Planning Organization for the Greater Philadelphia region, established by an Interstate Compact between the Commonwealth of Pennsylvania and the State of New Jersey. Members include Bucks, Chester, Delaware, Montgomery, and Philadelphia counties, plus the City of Chester, in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer counties, plus the cities of Camden and Trenton, in New Jersey.

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DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

DVRPC's vision for the Greater Philadelphia Region is a prosperous, innovative, equitable, resilient, and sustainable region that increases mobility choices by investing in a safe and modern transportation system; that protects and preserves our natural resources while creating healthy communities; and that fosters greater opportunities for all.

DVRPC's mission is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

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Background

This analytical data report (ADR) documents the population and employment forecasts developed for the nine-county Greater Philadelphia region through the year 2050 and the process by which they were developed for the Delaware Valley Regional Planning Commission's (DVRPC's) *Connections 2050* Long-Range Plan. For future reference, relative to other forecasts, this product is known as the 2050.1 population and employment forecasts.

Purpose

Population and employment forecasts are a critical component of long-range land use and transportation planning. Beyond being useful to a variety of DVRPC studies and analyses, forecasts are a federal requirement under 23 CFR chapter 1, subchapter E, section 450.324(e), which states: [1]

> *The [metropolitan planning organization (MPO)], the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.*

This forecast was required for use in the federally mandated air quality conformity analysis conducted for the Fiscal Year (FY) 2022 New Jersey Transportation Improvement Program (TIP) update and the *Connections 2050* long-range plan. Both population and employment forecasts were formally adopted by the DVRPC Board on June 24, 2021 and will serve as a key component of DVRPC planning and travel modeling studies and analysis until the next forecasts are adopted. Forecasts are adopted for total population and total employment at the municipal level in the eight counties surrounding Philadelphia, and by the 18 planning districts within Philadelphia. The 2015 base year of the prior DVRPC forecast remained the same but the horizon year was extended to 2050. Forecasts were adopted for each five-year increment between base and horizon years: 2020, 2025, 2030, 2035, 2040, and 2045.

The DVRPC population and employment forecasts are not meant to be aspirational or reflect an implementation of a growth vision for the region. They strive to reflect a plausible outcome for regional change in a 30-year period, with only current trends and knowledge of potential future trajectories from which to draw. As the basis for travel model future demand and the transportation funding decisions informed by modeling, the agency acknowledges no forecast is a crystal ball into what will transpire but uses data available and sound behavioral observations to best approximate reasonable socioeconomic and land use outcomes.

What's in this Report

This ADR is divided into two parts. The first section documents the new process DVRPC developed for this update. The second part summarizes the forecast results. For those interested in the results only, skip ahead to Part II. Part I summarizes the method applied for the previous forecast; the newly formed Socioeconomic and Land Use Analytics Committee, comprising county planning partner staff who were involved in all steps of the forecast; the development of the UrbanSim land use model; and the creation of a development pipeline to feed into UrbanSim. Part I further details how UrbanSim operates with agent-based synthetic population, probabilities based on explanatory variables, regional control totals, submodels for location choice, real estate pricing, residential and commercial developer location choice, and supply side restrictions that simulate zoning. Appendix A details municipal and City of Philadelphia planning district population forecasts for every five years from 2020 to 2050.

1 Code of Federal Regulations, Title 23, Chapter 1, Subchapter E, Section 450.324(e) www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-C/section-450.324

Appendix B contains municipal and Philadelphia planning district employment forecasts for every five years from 2020 to 2050. Appendix C documents additional UrbanSim development and configuration information. Appendix D summarizes how base year employment data was developed. Appendix E shows survey results from local developers and municipal officials that identify how they see factors influencing regional development decisions. Finally, Appendix F identifies all the acronyms used in this report.

Timing of Forecast Effort and Implications

Meeting requirements to prepare this forecast in time for air quality conformity analysis meant that a forecasted 2020 population would be adopted shortly before the release of the already delayed 2020 Decennial Census release of total population and other metrics. In the absence of a decennial count, the U.S. Census Bureau's own annual estimates of population by county and municipality were used for a 2015 base year population and later a 2019 base year population. It was the Bureau's underestimation of population totals in their estimates, and thus a starting point well short of conditions reflected in the decennial count, that created a low 2020 population forecast relative to the 2020 Census. For those who are not required to use an adopted forecast for analysis involving future growth, until DVRPC produces a new population forecast from a 2020 Census base, it is recommended to take the change of population forecasted from 2020 to 2050 and apply it to the 2020 Census's population totals.

In addition, the pandemic-induced recession experienced during the forecasting process also played into the general outlook on what was plausible in the nearer and longer-term future for population and employment.

Accessing Forecast Data

Data from the 2050 forecasts are visualized and downloadable at various geography levels via the following resources:

- An interactive webmap with municipal/district and county-level charts: Municipal and County-Level Population and Employment Forecasts, 2015-2050.
- Downloadable tables and GIS features at county, municipal/district, and TAZ levels: DVRPC Data Catalog.
- Downloadable county and municipal/district tables with chart visualization: DVRPC Data Navigator.

For requests of variables beyond total population and employment used in the forecast process, please see the staff contact in this report.

PART I:

Connections 2050 Forecast Process

Part I of this report reviews the previous population and employment forecasts, and then reviews many of the enhancements made to the forecasting process for *Connections 2050*. These enhancements include the formation of a new Socioeconomics and Land Use Analytics Committee, the development of a new UrbanSim land use model, and a development pipeline to feed into the UrbanSim model.

Previous Forecast

DVRPC last adopted forecasts for the 2015 to 2045 period in July 2016 for population and October 2016 for employment. These efforts are explained in further detail in ADR022 for population and ADR023 for employment. Prior methods focused solely on creating total population and total employment estimates for counties and municipalities/planning districts for base, horizon, and interim five-year increments.

DVRPC staff met individually with each county planning partner at the outset and presented three different population estimates based on an age-cohort model, or use of either the prior forecast's county distributions or growth rates. For each of these, a method was applied to disaggregate each county's municipalities or planning districts, based largely on carrying forward the prior forecast's assumptions. Using their knowledge of local trends and discussions of future development projects and plans, county staff contacts reviewed their county and municipal/district results. Then they either chose which they felt were most plausible or presented other outcomes that they felt were more likely to occur. The agreed upon forecasts were then adopted by the DVRPC Board.

Employment forecasting began only after the population forecasts were finalized. It began with the clean-up of purchased proprietary base employment data. From that, county employment growth was generated by applying county population growth rates due to labor force growth's relationship to employment growth. Municipal and district employment forecasts were determined largely by carrying forward prior forecast assumptions and consulting county staff on results. Counties then proposed edits as they saw fit, based on local knowledge and expertise.

Former Post-Adoption Zonal Allocation Method

After each 2045 forecast was adopted, DVRPC's travel demand modeling staff had to disaggregate the municipal forecast into smaller geographies known as travel analysis zones (TAZs, or zones) and into many more socioeconomic variables of population types, household attributes, and employment sectors for each zone. This zonal allocation is necessary to run the travel demand model in order to produce air quality conformity results, and analyze other projects required to adhere to board-adopted municipal population and employment forecast totals. In the absence of information considered by DVRPC staff and county partners during the forecasting process, allocation work often defaulted to uniform application of municipalities' growth rates to the zones within it. This ignored the reality on the ground that some zones were already being built out and others being candidates for future growth.

Attention to variations in zonal growth rates were most often applied in locations with plans for large, known projects or transformative master plans. Examples of special attention areas for zonal allocation were plans for Philadelphia's Navy Yard, Delaware River Waterfront, Schuylkill Yards, and 30th Street Station Area in University City, and the Naval Air Station Joint Reserve Base Willow Grove (NASJRB Willow Grove) Redevelopment Plan in Montgomery County. Staff from DVRPC's Office of Travel Modeling attempted to interpret the location, magnitude, and timing of employment and population growth from master plans while working within the constraints set by municipality or district and year in the adopted forecast.

Socioeconomic and Land Use Analytics Committee

An important element to all DVRPC population and employment forecasts has been consultation and collaboration with county staff with local knowledge of development plans. The Socioeconomic and Land Use Analytics Committee (SLUAC) was formed at the outset of the 2050 forecast process to promote regional dialogue between DVRPC staff and all planning partners throughout forecast development.

The SLUAC is a group of county staff persons from across the region (staff from member cities were invited to participate in 2022). SLUAC membership is generally comprised of those tasked with studies and analysis of demographic, economic, and development data. The SLUAC is set up for collaborative regional data efforts involving members and DVRPC staff. It also fosters regional exchanges of input and ideas, along with identifying best practices when performing various types of analysis.

For the forecast process, SLUAC members were invaluable in reviewing base year data, gathering and commenting on input data for the land use model, and performing reality checks on model results. They gave insights into current and expected trends for their individual counties and the growth to expect within them. SLUAC members passed on their local knowledge and experience when reviewing datasets. For example, when tasked with reviewing the point-level employment data from the National Establishment Time-Series (NETS) that has been used in past forecasts for base level employment, experienced county staff shared lessons learned on how to make that data review most effective.

Land Use Modeling for Concurrent Small and Large Area Socioeconomic Forecasting

DVRPC procured a subscription to UrbanSim, LLC's web-based model platform, UrbanCanvas, in early 2019 and began a contract for land use model development. UrbanSim is the most widely used land use model among larger metropolitan planning organizations (MPOs) across the country. Land use models like UrbanSim are designed to allocate development, households, and employment to small geographies within a region with outcomes based on factors like costs, accessibility, and observed behaviors of actors such as developers, households, and businesses.

UrbanSim replicates locational choices of households and employment concurrently, understanding that the location of employment of various types will be relevant to the location and accessibility required for certain households, and conversely, accessibility of workforce and customers will influence business locations.

DVRPC's UrbanSim model used for the 2015–2050 forecasts allocated change by 2010 census block geographies. With a base geography of census blocks, modeled outcomes can be aggregated to multiple higher geographies, such as block group or tract. Block geographies also nest within county and municipal or district geographies at which the forecast is adopted.

Travel demand model zones are also composed of census blocks and nest within municipal and district boundaries. The UrbanSim model outputs multiple variables required for travel model zonal inputs. At every geography, UrbanSim outputs population cohorts, household types, and employment sectors that the travel model requires to estimate travel demand in the region.

With forecasts developed and reviewed by the SLUAC at a small area level—prior to adoption—studies and analyses using UrbanSim forecast results as inputs to the travel demand model receive a level of scrutiny from county staff on the assumptions feeding the travel model that had not been previously incorporated into the process. This reduces staff and partners' efforts at the outset of studies to review and approvals of small area conditions and growth assumptions. The UrbanSim model also simulates socioeconomic and land use results for each year, not just every five. This is useful, as some travel model projects and studies require base and future years that do not end in zero or five.

Some of the intricacies of the DVRPC UrbanSim model developed for the latest forecast and how it was integrated into the forecasting process are described in the following sections on process and methods. Also highlighted are known limitations of the model or how it was initially implemented, given constraints on development time or the model's functionalities available when forecasting.

Base Year Creation

Population Base

Forecast years skip by five-year increments. Base years too will end in zero or five. The preferred source for base year population would be the most recent decennial census count. However, this forecast needed to be adopted in the months preceding the first 2020 Census release. When more than five years have transpired since a decennial count the base population comes from municipal estimates of population from the U.S. Census Bureau's Population Estimates Program (PEP). PEP releases provide annual estimates for population based on administrative records of births, deaths, and domestic and international migration and is the most authoritative value for population in intercensal years. PEP data is released each year, with an estimate for the population for July 1 of the prior year, as well as corrections for July 1 of each prior year, back to the year of the last decennial count.

The PEP release used for base year population in this forecast was the 2019 PEP dataset. Since the smallest geography for PEP data is municipality, the 2015 Philadelphia PEP estimate was allocated to its 18 planning districts using an assignment of tracts to district geographies and applying the district sum's share of the county sum in the 2013–2017 American Community Survey (ACS) to the PEP total.

A base year migration plan was implemented by the UrbanSim team, in consultation with DVRPC staff, to transition the model from its native base year, 2010, to 2015 by adding residential units built between 2010 and 2015 and filling them at the block level with households sampled from the 2013–2017 ACS Public Use Microdata Sample (PUMS) release allocated to the attributes of 2013–2017 ACS block group households. This data was post-processed to fit the municipal- and district-level values from the 2015 PEP data.

Employment Base

The NETS employment data, produced by Walls & Associates, was used for the third time in a DVRPC forecast for base year employment. The NETS database is essentially a "cleaned-up" version of the Dun & Bradstreet database containing point-level locations of employers. Using each company's unique DUNS number (or numbers, in cases where separate divisions within a company have unique DUNS numbers), Walls & Associates creates a time series for each business and then screens the data to eliminate duplicates and identify anomalies. If a file contains suspicious information, the data is cross-checked with previous annual records and adjusted or eliminated as appropriate, based on information collected from other sources (including government and nonprofits). One advantage of the establishment-based NETS Database is that all employment, sales, and other activity is reported at the actual facility—not the headquarters.

Unlike many government sources of employment data, the NETS database includes sole proprietors, part-time employment, and farm operations, and has been found to be more accurate in reporting data for small privately-owned firms and public sector employers such as post offices and public schools. Employment from the NETS database is therefore generally higher than many of these other sources.

In December 2018, DVRPC acquired an updated NETS dataset with 2015 employment data. All corrections made to the previous NETS database by DVRPC and county planning staffs, either during the previous forecasting round or as a result of ongoing DVRPC land use and transportation studies, were incorporated in to the new database. DVRPC staff reviewed the revised 2015 data reducing duplicates and correcting obvious errors, using resources

that included CoStar, company websites, and online business directories. The data was then reviewed by SLUAC members, and further corrections were made based on local knowledge (including errors in location and missing large employers).

The NETS database used by DVRPC includes the street address and the most current latitude-longitude for each establishment as well as the origin and destination latitude-longitudes for all significant moves, at the four-decimal-place-level. In order to assign each employer to a specific municipality, every employer in the NETS database was geocoded. Based on an internal review by DVRPC staff, several spatially inaccurate results were identified, and numerous adjustments were made to improve the accuracy of the dataset before the results were sent to the counties for review. A detailed explanation of the quality control/quality assurance procedures for cleaning the 2015 NETS data purchased and other additions to the base year employment data are found in Appendix D.

The native UrbanSim employment data source is Longitudinal Employer-Household Dynamics (LEHD) data but that data was swapped out with block-level sums of NETS data by the two- and three-digit North American Industrial Classification System (NAICS) codes when the model's base year migrated to 2015.

Disaggregate Synthetic Agents

DVRPC's UrbanSim model consists of multiple submodels that attempt to replicate real world conditions and the decision-making process of various actors, or "agents." Individual data records are kept for each "synthetic" household and its synthetic household members. Household and person records are drawn from PUMS data. Similar to the synthetic population and synthetic household tables, PUMS data provides detailed individual records from a small but representative sample of respondents to the ACS within the Public Use Microdata Areas (PUMA) geography.

Demographic Information

Households

From PUMS household records the UrbanSim households table provides data on:

- the number of:
  - people;
  - children;
  - workers;
  - vehicles owned;
- the householder's:
  - age;
  - race;
  - Hispanic origin;
- the annual income of the household;
- information on their dwelling:
  - whether they rent or own;
  - if it's multifamily or single-family; and
  - whether they moved there recently.

Household Population

Tied to each household record, by a household identification number is a table with a record for each member of the PUMS household records. Synthetic population records specify each household member's:

- age;
- sex;
- race;
- Hispanic origin;
- relationship to the householder;
- educational attainment level;
- information on students:
    - student status;
    - grade;
- information on employed person:
    - worker status;
    - hours worked per week;
    - work at home status; and
    - individual annual earnings.

From a process of sampling PUMS records by the large subcounty geographies known as PUMAs, the synthetic households and population were originally assigned with a block ID by a fitting process that tied household agents to smaller geographies within the PUMA by control variables from the 2008–2012 ACS and 2010 Census, based on what metrics were available at the tract, block group, and block levels. This reflected the standard, precalculated model specification included in any 2010 base year UrbanSim purchase. Later, by adding residential units built between 2011 and 2015, and using 2013–2017 ACS data from PUMS and standard tract and block group tables, the demographic data in the model was migrated to a 2015 base year.

Residential Unit Information

Residential units were individually attributed to the block using 2010 Decennial data. As noted above, new residential units added between 2011 and 2015 were added when migrating to the 2015 base year. Attributes of residential unit agents are:

- residential unit ID;
- block ID;
- year built;
- building type:
    - single-family rental;
    - single-family owned;
    - multifamily rental; and
    - multifamily owned

Importantly, there is no attribute that ties residential units to a household record. Vacancy rates are determined at the block level as the sum of all households divided by the sum of all residential units sharing the same block ID.

Employment Information

Employee records are synthetic agents in the model. The native UrbanSim product used the U.S. Census Bureau's 2010 LEHD Origin-Destination Employment Statistics (LODES) data, but the DVRPC model swapped that out with

2015 NETS data purchased by DVRPC and cleaned by DVRPC and SLUAC members. Tied to each employment record is that employee's:

- employee ID;
- block ID;
- industrial sector:
    - three-digit NAICS code
    - two-digit NAICS code; and
    - sectors generalized into six categories.

Unlike, the relationship of persons to households, employees are not tied to a company, and so when employees of a certain sector move to a block, it's akin to a new company or companies of that type moving there, but not structured as such. And different from the concept of households moving to a block if current residential units outnumber households, there's no notion of commercial buildings within a block at all. Discussed in the Supply-Side Restrictions section below, blocks have an employment capacity in lieu of calculating vacant commercial space and zoning capacity.

Additional Block-Level Data

Pricing

For the land use model to understand market demand for housing, rental and home sale values. Base year home and rent values were based on ACS estimates and translated to the block level.

Group Quarters Population

Total population is a sum of household population group quarters (GQ) population. GQ population includes institutional (such as, those living in adult and juvenal correction facilities and nursing homes) and noninstitutionalized individuals (such as, those living in dormitories at universities and military barracks). Only household population behavior is simulated in UrbanSim. GQ population totals at the municipal and district level would suffice for the adopted forecast to create a total population in combination with the household population provided by UrbanSim. However, the travel demand model requires TAZ-level forecasts for noninstitutional GQ population. The VisionEval model, a strategic model that provides travel and environmental results that DVRPC plans to use in the future for scenario planning purposes, requires institutional GQ population by block group and age.

DVRPC staff created a table of 2010 Decennial Census group quarters population at the block level stratified by age, sex, and facility type. Not all that information was available at the block level, so a process of iterative proportional fitting (IPF) the data to control totals and distributions at higher geographies was created to achieve a good fit, consistent with Census totals. The 2010 GQ population table was then adjusted to create a 2015 table. These changes were only made where ACS change in GQ population estimates were statistically significant from earlier estimates. Later, further changes were made for a 2019 GQ table using the same process and getting feedback from City of Philadelphia staff, particularly on changes in population at and closings of correctional facilities run by the city.

The initial plan was to keep the GQ population constant for all forecast years since this effort didn't have a model that can predict change for GQ population and given that these facilities don't tend to fluctuate greatly. However, the COVID-19 pandemic led to large numbers of deaths in the region and around the world, particularly for nursing home and prison populations. UrbanSim lacks a good way to adjust individual household population levels to reflect higher than usual death rates. As a result, GQ population was adjusted to decline in facility types warranting

greater reductions until 2022, as a reflection of the pandemic's toll on the region's population. After 2023, GQ population assumes a mirrored rebound back to 2020 levels in 2025.

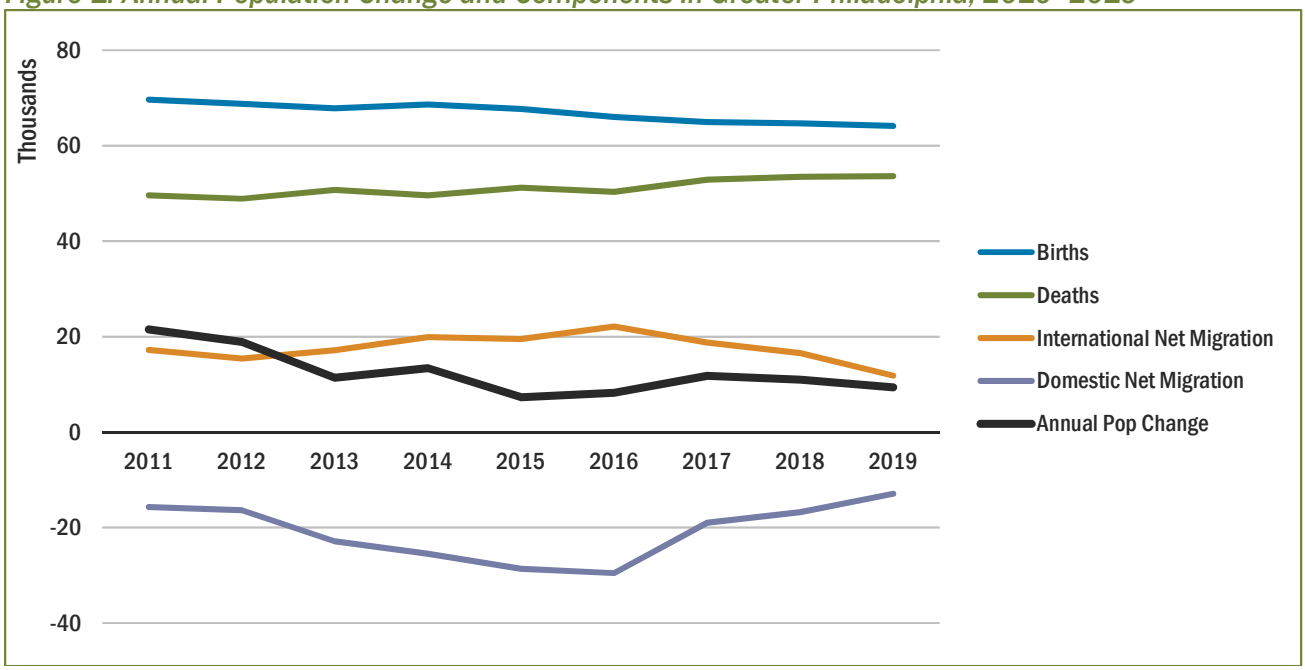
Control Total Development

In order for UrbanSim to allocate new residential units, households, and employment to the region, it needs to know how many households and employees to expect in each simulation year. Some MPOs use macroeconomic models like REMI to develop forecasts for their entire region or individual counties before allocating growth with a land use model like UrbanSim. Some develop a population forecast from an age-cohort model, as DVRPC had done in the past, in order to present counties with one of a couple possible results for population growth.

Trends from available observed data

Before solidifying household and employment control totals for the 2015–2050 population and employment forecasts, SLUAC members were presented with and discussed analysis of observed data trends from recent years. Data from the PEP and the ACS provided insights into the drivers of population change births, deaths, and domestic and international migration. The PEP greatly underestimated regional growth when compared to the 2020 Decennial Census data released after the forecast was adopted. At the time the SLUAC was looking at trends, however, the region's aging population was showing a decrease in births and increase in deaths, such that some counties were already getting more of the latter. Domestic migration was a net negative, regionally, but was showing signs of potentially becoming positive if the direction of change from recent years persisted. International migration had halved itself since a peak prior to the anti-immigration policies of the federal executive branch at the time. Figure 1 shows some of the population trends presented to the SLUAC members at the time.

Figure 1: Annual Population Change and Components in Greater Philadelphia, 2010–2019



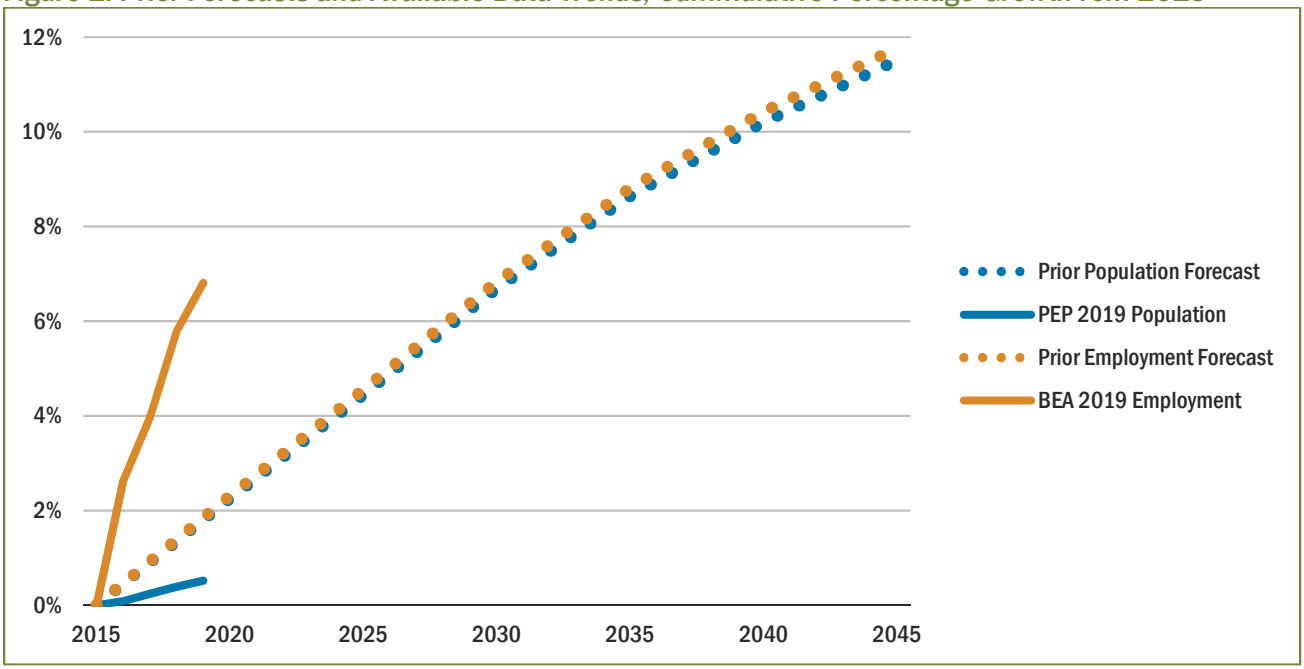
Source: U.S. Census Bureau's Population Estimates Program (2019 vintage)

The pandemic weighed heavily into near-term and potentially long-term forecast considerations in the discussions. Deaths were certain to increase, and births drop more rapidly in the early 2020s from data released by the CDC and observations of experts. It was unclear when those COVID impacts might wane. Similarly, on the international migration front, borders were largely closed, though a rebound of immigration was expected when pandemic concerns subsided, especially when it became certain there would be a change in administrations.

Employment sources like the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA) showed a very different story than the population statistics. The 2010s had seen a decade-long boom in employment coming out of the great recession, with record low unemployment rates. Figure 2 shows just how divergent the available observed data trends were from 2015 to 2019, relative to the prior DVRPC forecasts, which saw population and employment as closely tied through the forecast period.

In the midst of the pandemic, it was clear that 2020 employment would end well below where it started that January. Particular sectors were hit the hardest, such as Food and Accommodations, while some, like Transportation and Warehousing, were suspected to see greater gains due to increased reliance on ecommerce.

Figure 2: Prior Forecasts and Available Data Trends, Cummulative Percentage Growth rom 2015



Source: DVRPC, 2016; PEP 2019, BEA 2019

Developing county targets

DVRPC purchased a detailed macroeconomic forecast from IHS Markit's proprietary models. The IHS Markit forecast gave annual historic and forecasted data on population by age, households, by age of head, and employment by two-digit NAICS code, as well as other metrics. The forecast purchased was from October of 2018, so, while it did provide optimistic and pessimistic estimates, along with a baseline forecast, it was created before the COVID-19 pandemic was at all on anyone's radar. Even its pessimistic results couldn't speak to the rapid change and potential recovery outcomes of the socioeconomic conditions of the time. IHS Markit forecasts were shared with the SLUAC members, and were generally for the region much lower than DVRPC's 2045 population projections and slightly higher than the 2045 employment projection.

Similar to prior forecasts, DVRPC staff felt it was best to send the counties more than one county-level possibility to consider and then provide feedback. Counties received trend line graphs and data tables for both county population and employment consisting of four decades of historic trends, an estimated pre-COVID 2020 and six scenarios out to 2050 from there:

- No recession with
    - The prior DVRPC forecast's growth rates
    - IHS Markit growth rates
- A recession simulation where employment didn't rebound to 2019 levels until 2025 and population trends slowed followed by
    - 2020–2045 growth rates applied from 2025 out to 2050 from
        - The prior DVRPC forecast
        - IHS Markit forecast
    - 2025–2050 growth rates applied from 2025 out to 2050 from
        - The prior DVRPC forecast (2046–2050 extrapolated)
        - IHS Markit forecast

The counties were presented with these figures. They then provided DVRPC with a target 2050 population and employment value they thought would be reasonable to be in the ballpark of, as well as some narrative on their outlook for county growth. They also provided interim growth targets of what they might expect in five-year increments.

Household Control Totals

DVRPC staff subtracted group quarters population from counties' total population targets to get household population targets for each five-year period. Those were then converted to household counts using mean household size factors. Population to household ratios were refined by testing how UrbanSim household controls translated to household population results. Intervening years were calculated to transition smoothly to each five-year increment. PEP estimates for 2015 to 2019 were used to create a forecast adhering to recent population change.

Ideally, UrbanSim should use region-wide controls and allocates to the block level in such a way that the sum of blocks by county hit close to observed or forecast county totals; however, if regional controls diverge from targets, subregional controls can be used to force the model to fit certain criteria. For the population forecast, training the model to hit targets was more difficult without prescribing some subregional outcomes. Control totals were divided into 3 geographies:

1. Philadelphia
2. the sum of the four remaining southeast Pennsylvania counties
3. the sum of the four New Jersey counties

Household control totals don't need to be purely totals of households per year. New households added could be by any single household attribute, like household size segments (1-person, 2-person, 3-person, 4- or more persons) or combined attributes (low income, 0 workers; low income, 1 or more workers; high income, 0 workers; high income, 1 or more workers). To try to forecast a known aging population, staff attempted to segment household controls by age of the household head (using IHS Markit forecast distributions), with older household heads gaining in proportion to younger ones over time. Prior to the forecast, initial results of these segmented household types were yielding disproportionately slower growth in some counties. Having limited time to investigate the cause, household totals were ultimately used. Further experimentation with segmentation of control totals is recommended for future UrbanSim use, as this can be a key tool in setting the direction of overall regional trends. Household control totals can be found in Appendix C.

Employment Control Totals

Employment controls were used regionally, and segmented by two-digit NAICS codes. All Manufacturing is typically a group of all codes beginning with 31 through 33. However, for the forecast, each of these codes31, 32, and 33—were treated individually to better account for distinctions in nondurable goods (codes starting with 31 and most of those starting with 32) and durable (codes starting with 33).These sectors have been moving in different directions with nondurable increasing in the region, while durable has been declining. This was important, as three-digit codes by TAZ were later exported from UrbanSim for use in the freight model DVRPC's travel model team was developing. Similarly, Public Administration (92), State and Local Government and Federal Government were individually treated. Armed forces were separately forecasted as well.

The source of early year employment sector controls were applications of growth rates from observed BEA data to the 2015 NETS sector sums for 2016–2019, fitted to total growth rates applied to NETS totals. 2020 employment used an early BLS release of monthly sectoral totals by Metropolitan Division geographies for January to December for 2020. The last three months' data were marked as preliminary. Averaging these monthly totals and comparing them to the monthly averages of 2019 created annual change rates by sector reflecting some semblance of the impact the pandemic had had on employment throughout the first year of the pandemic. For counties without individual reports, the parent Division's sector change rates were applied then fitted to total employment change rates. Since employment control totals were regional, the declines in various sectors would have been treated with uniform declines in in each block across the region. There is no employment loss submodel within UrbanSim that predicts the locations that are hit by regional declines more than others. To accommodate the county-level differentiation of impact to sectors in 2020, the UrbanSim team created an external procedure to run with the 2020 simulation that would uniformly decrease employment of any declining sector within that geography, rather than regionally.

The 2021 to 2050 totals were developed first from a conservative assumption of recovery in total employment exceeding the prior 2019 peak by 2025, then adhering to summed county growth targets for 2030 to 2050. The sectoral distribution was first an application of IHS Markit forecast growth rates by industry, but then adjusted to consider trajectories of sectors seen in BEA employment trends, as well as assumptions on potential pace of recovery out of the pandemic for particular industries. This made some industries exceed their 2019 peaks more quickly than 2025 and some never quite reach them, especially if they were on a downward trend pre-Covid. The initial pass at creating employment controls by sector was sent internally to relevant DVRPC staff. After applying some staff suggestions, the controls were finalized. These can be found in Appendix C.

Individual Behavior and Simulated Conditions

UrbanSim contains individual records of residential units, households, and employment, allowing these agents to make decisions on where they want to locate based on probabilities. Triggered by a simulation year's control total increases, submodels within UrbanSim calculate these probabilities and place newly added household and employment records within blocks.

UrbanSim Submodels

Location Choice Models

To maintain an assumed regional vacancy rate, new residential units are created and allocated based on considerations a real estate developer might use for site selection. UrbanSim's submodels listed below are designed to make probable location choices for each new record:

- Residential Development Project Location Choice Model (RDPLCM)
- Household Location Choice Model (HLCM)
- Employment Location Choice Model (ELCM)

Location choices are based on the record's attributes and it's the conditions at potential block locations in the region. HLCM and ELCM allocate new households and employment for each simulation year's control total increases. The RDPLCM allocates new residential units based on the addition of households and a regional vacancy rate. For the 2015–2050 forecasts a vacancy rate from the base year, 6.7 percent, was used. Adding households without the addition of new residential units would create a lower vacancy rate. The RDPLCM builds enough residential units to reach the regional vacancy rate and then stops "building."

At the time of the forecast, DVRPC's UrbanSim model could not apply a different vacancy rate for each subregion's household control totals. Since the suburban Pennsylvania counties had a lower actual vacancy rate than the regional average and Philadelphia's vacancy rate was higher, this temporarily inflated residential unit production in the Suburban PA counties for the 2020 simulation year, while keeping the Philadelphia housing increase tied only to the programmed units in the development project pipeline data explained later in this report. New Jersey counties' vacancy rate was relatively on par with the regional rate. After the forecast, the DVRPC UrbanSim model was improved with the ability to assign a vacancy rate for each subregion used in control totals.

Pricing Model

The location choice models base some probabilities on block-level market values for home purchasing and rental units. The Real Estate Pricing Model (REPM) simulates changes to averages sales and rental prices in each block so that the location choice models can respond to market conditions.

Relocation models

UrbanSim allows for location choices of not just new agents added to the region via control total increases, but also those of current synthetic "residents" who choose to move within the region. The relocation models use probabilities for relocation by segment type or just total relocation rates to identify relocating agents, and then add households and employees to the HLCM and ELCM, respectively.

Household and employment relocation models were employed for years 2015 to 2019. Without them, municipalities with known declines in population were unable to reflect those realities and not enough agents were added in control total increases to be able to fill newly built vacant residential unit. The 2019 forecast results were postprocessed to better fit the PEP totals and sectoral employment totals. These are further explained in the two-phased forecast section later in this ADR. There was not adequate time to develop and test the relocation model prior to the 2050 forecast. As a result, relocation models were disabled for 2020 to 2050 in order to better understand their results before applying them to future year forecasts.

Submodel Segmentation

In each simulation year, the UrbanSim location choice submodels group new residential units, new households, and new employment—determined by vacancy rate assumptions, household control totals, and employment control totals—into groupings or "segments." Each new record falls into a segment that determines its probability of where to locate based on local conditions. The same happens with the pricing model. Local conditions determine whether sales or rental values increase or decrease.

The groupings or segments of the submodels are as follows:

Residential Development Project Location Choice Model

The two RDPLCM segments are unit types:

1. single-family; and
2. multifamily.

Household Location Choice Model

The eight HLCM segments are combinations of tenure status, household size, and age of householder, as seen in Table 1.

Table 1: Household Location Choice Model Segmentation

		Segments							
Demographic Attributes		1	2	3	4	5	6	7	8
Tenure Status	Owned	●	●	●	●				
	Rented					●	●	●	●
Household Size	1 Person	●	●			●	●		
	2+ Person			●	●			●	●
Householder Age	Under 55	●		●		●		●	
	55+		●		●		●		●

Source: DVRPC, 2021

Employment Location Choice Model

Seen by their component two-digit NAICS code level in Table 2, the segments of the ELCM can generally be described as:

1. Management, Public Administration
2. Basic Industries
3. Transportation, Communications & Public Utilities, Warehousing
4. Retail Trade, Accommodations, and Food Services
5. Finance, Insurance, and Real Estate
6. Services

Table 2: Employment Location Choice Model Segmentation

Two-Digit NAICS Sectors		Segments					
		1	2	3	4	5	6
11	Agriculture, Forestry, Fishing and Hunting		●				
21	Mining, Quarrying, and Oil and Gas Extraction		●				
22	Utilities		●				
23	Construction		●				
31–33	Manufacturing		●				
42	Wholesale Trade			●			
44–45	Retail Trade				●		
48–49	Transportation and Warehousing			●			
51	Information						●
52	Finance and Insurance					●	
53	Real Estate and Rental and Leasing					●	
54	Professional, Scientific, and Technical Services						●
55	Management of Companies and Enterprises	●					
56	Administrative and Support and Waste Management and Remediation Services						●
61	Educational Services						●
62	Health Care and Social Assistance						●
71	Arts, Entertainment, and Recreation						●
72	Accommodation and Food Services				●		
81	Other Services (except Public Administration)						●
92	Public Administration	●					
n/a	Armed Forces	●					

Source: DVRPC, 2021

Real Estate Pricing Model

The REPM is simply segmented into residential units':

- Average sales price; and
- Average rent.

Explanatory Variables

UrbanSim has a variety of location choice and other submodels. Each submodel is divided into segments, composed of similar individual agents. Each segment has a set of characteristics that are important to its agents weighing locations decisions. These sets of characteristics are called "explanatory variables" because they explain

the factors agents weigh as they make location choices. Explanatory variables make agents responsive to the characteristics of a block and the surrounding blocks accessible to it.

In a process called model estimation, base year location of each segment is tested against various potential explanatory variables with a regression analysis to determine to which factors the segment is most responsive. Statistically significant variables become the explanatory variables. The segment's coefficient values for each explanatory variable, in combination with each other, are used when an agent from a segment evaluates location options. The variables are assigned a negative or positive coefficient value that determines the probability of locating in each census block. Negative coefficients will work to deter the choice of a location, and positive will make it more attractive. The larger the absolute value of the coefficient (i.e., the further away it is from zero in either direction), the stronger its influence on location choice will be.

Model segmentation and explanatory variables selection are important to designing a model that's sensitive to particular variables users wish to forecast and analyze. For instance, without segments or explanatory variables that deal with income levels of households, it's difficult to claim that future household income results are potentially valid at small geographies. Further information on explanatory variables, including a list of the more than 45 variables used, is found in Appendix C on model development and configuration.

Survey of Developers and Planners

To inform DVRPC's collection of potential data sources for explanatory variables in UrbanSim, staff developed a survey aimed at developers and planners dealing with development proposals in the region. Professionals dealing with residential and commercial development weighed in on three different areas that may factor into location decisions:

- Policies, incentives, other costs;
- Site's physical characteristics; and
- Site's proximity and access.

From the survey results (summary available in Appendix E), DVRPC staff prioritized the collection of data needed for model estimation, beyond the conditions already present in the UrbanSim model. The survey's findings will continue to be used to guide further data collection in model development efforts.

Interdependence of Submodels and Travel Model Integration

Generally, explanatory variables make their submodel segments responsive to conditions and changes in them from year to year in the simulation. Nearly all explanatory variables are dynamic, meaning densities and proportions of variables change as residential units, households, and employment shift and cause blocks to become more or less attractive to submodel segment than the prior simulation year. Part of the advantage to forecasting population and employment simultaneously within the same model is that changes in employment locations impact location choices for residential development, and demographics and housing characteristics influence employment location choices. Some examples of the kinds of relationships seen in the submodels' coefficients are:

- Multi-person households with a head age 55 or above who own their homes tend to avoid municipalities with higher proportions of retail employment; and
- Each segment of employment will be more likely to locate to a block with more recent residential unit development.

Accessibility to other areas and attributes of the region plays heavily in all explanatory variables of submodel segments, whether rental or home prices, or location choices of residential developers, households, or employment. Accessibility and travel time to amenities in the region are calculated with "skim" matrices from the travel model. For various submodel segments, these matrices of zone-to-zone travel time or distance in the 6:00 am to 10:00 am travel period are used to calculate:

- How many employees or households can be reached in 15 to 30 minutes by any means or by transit (REPM, REPLCM, HLCM, ELCM);
- The distance to key travel facilities like 30th Street Station (RDPLCM);
- The travel time to tier one or tier two universities (REPM, HLCM, ELCM); and
- The travel time to freeway interchanges (RDPLCM, HLCM, ELCM).

UrbanSim can iteratively pass forecasted zonal socioeconomic data of a simulation year to the travel demand model. The travel demand model can then be run for that year, and the resulting skim matrix reflecting new travel conditions can be uploaded into UrbanSim. The travel conditions reflect changes due to new travel demand from housing or employment, or new facilities planned for completion by that simulation year. If a new facility improves travel times, segments responsive to improved accessibility will find blocks closer to the travel network improvement more attractive for location choice.

The pricing model will raise home ownership and rental costs in blocks that increase employment accessible within 15 to 30 minutes due to transportation improvements. An increase in housing costs may make the location unaffordable to some segments of the household location choice model. In this way, the various submodels of UrbanSim and the travel model are interwoven into causal relationships.

Environmental conditions

There is only one explanatory variable that is not dynamic, meaning the value is constant through all analysis years. That is, the percentage of a block's developable area within a 100-year floodplain. Developable area is determined by the portion of land use types that wouldn't typically be redeveloped and protected open space polygons do not overlap within each block (see Appendix C for more detail on developable land definitions). Recent improvements to the UrbanSim model will allow it to expand or contract floodplain areas in each block in future years in order to simulate potential for climate change scenarios where flooding deters location choice. The floodplain variable was only statistically significant to the pricing model's rental prices and all segments of the ELCM.

Calibrated coefficients

UrbanSim model can be run with calibrated or uncalibrated coefficients. In a calibrated model run, the magnitude of the explanatory variables' impact on probabilities are adjusted so that the model hits targets based on observed change within the region over time. DVRPC staff collected data on county and municipal/district-level change in a three- to eight-year period. The following sources were used to set change targets:

- Household population;
    - County: PEP [2019 vintage], 2011 to 2019 change;
    - Municipal/district: PEP [2019 vintage], 2011 to 2019 with ACS-based district sums used to apply the proportion of Philadelphia Planning Districts' populations to the city-wide PEP estimates;
- Residential units;
    - County: PEP [2019 vintage], 2011 to 2019 change;

- Employment;
    - County: BEA, [Nov. 2020 release] 2011 to 2019 change by six segments in ELCM; and
    - Municipal/district: LODES [V7.4], 2015 to 2018 change by six segments in ELCM.

The calibration occurs on multiple geographic levels and year ranges, and is aided by a statistical method called auto-differentiation. With the adjusted coefficients, the behavior of location choice models' agents can be informed by the relationships identified in model estimation and perform similarly to recent growth patterns. Calibrated coefficients were employed for the simulation results from 2015 to 2019, as that period was largely reflected in the calibration targets.

Uncalibrated coefficients are simply the coefficient results from model estimation, prior to calibration adjustments. Due to the uncertainty as to whether the same kinds of growth would occur in future decades as did in the prior decade—especially in light of the Covid-19 pandemic and its after-effects, the 2020–2050 simulations were left uncalibrated. Uncalibrated coefficients were also found to better fit county and municipal targets for 2050.

Supply-Side Restrictions

UrbanSim simulates real world demand for residential unit and employment location choice through agents' explanatory variable coefficients; however, a key real world factor is the limited supply of residential units, development capacity (either new developable land or the ability to increase density in existing developed areas), and employment space. UrbanSim attempts to replicate this reality in two ways:

1. Households can't exceed the number of residential units available in a block. Even if a block is attractive for the HLCM to send agents to, it won't be able to unless there are vacant residential units available. However, there is no assignment of a household to a particular unit.
2. Each block has "constraints"—a proxy for zoning—which can be adjusted for future years for scenarios of anticipated up-zoning or down-zoning.
    - A max capacity for residential units; and
    - A max capacity for employment.

Figure 3 gives a graphic representation of these concepts in an example block. The example block spatially resembles one with single use areas of residential and non-residential, each of these sections have an area that is built out and another with greenfields zoned for further growth. However, this is just one possible scenario for a block's spatial arrangements. Mostly, it serves to demonstrate the concept that a block may contain:

- Total block area = developable + undevelopable space;
- Residential unit capacity within the developable area = existing residential units + remaining residential unit capacity;
- Existing residential units = vacant residential units + occupied residential units (otherwise known as households); and
- Nonresidential employment capacity within the developable area = existing employment + remaining employment capacity.

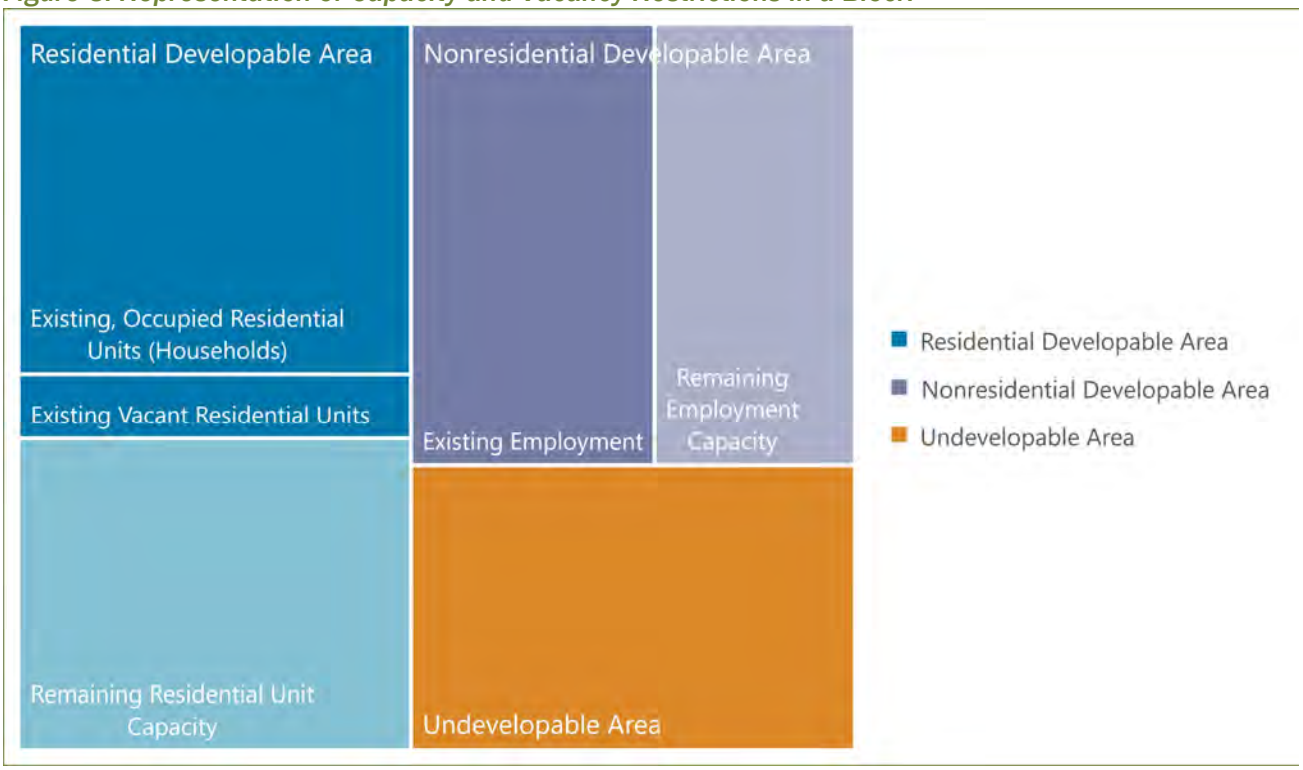
UrbanSim allows for mixed use within a block, it's just agnostic on whether or specifically where the mix of uses is occurring within the block. It is also agnostic as to whether the remaining capacity is found in developable greenfields or whether through higher densities resulting from infill projects built among existing development.

Unlike Figure 3, the model only knows each block's total capacity for residential units and total capacity for employment. It prohibits residential units from exceeding residential unit capacity and employment to exceed

employment capacity. Within the block, residential units and employment may be mixed use—meaning both uses are located within the same buildings—or single uses that exist in entirely separate areas. Existing development may cover the whole block and capacity may only allow for infill or it could consist of greenfields, or a mix of both. None of these variations change the calculation of what's existing and what capacity remains.

Mirroring the real world, existing residential space is quantified by total residential units. While the households in the block are not assigned to residential units, the household count can't exceed total residential units. Diverging from reality, non-residential space is not tracked in UrbanSim, so a maximum existing space within which employment can fit does not exist either. New employment can locate within a block when known new nonresidential space appears in the programmed development pipeline (discussed below). To facilitate this, the model adds "built" employment capacity to the block when a new "nonresidential building" is completed.

Figure 3: Representation of Capacity and Vacancy Restrictions in a Block



Source: DVRPC, 2022

Creating a Proxy Zoning Layer

Constraints were calculated using the zoning code boundaries from nearly all the region's municipalities. DVRPC staff went through an effort to find recent geographic information system (GIS)-based zoning shapes covering eight of nine counties fully. About half of Camden County's municipalities had GIS files reflective of their code. For the remainder of the county, shapes of the major categories in the DVRPC 2015 Land Use Inventory were used as a proxy for what was allowable.

It was unrealistic to collect the actual zoning codes and overlay considerations for all 350 municipalities in the region. Philadelphia's zoning code was analyzed to develop capacities that are reflective of its residential unit and gross floor area maximums because it covers a large area of the region and it's a location where a lot of development occurs.

Zoning is parcel-based; however, constraints are block-based. Blocks may have multiple zone types within them. It is only necessary for the blocks to reflect the aggregate of what may be allowable within them, not the precise location of new development.

The first draft block-based constraints were created by using the densities of residential units from the 2010 Census within each municipality's residential zones. Each zone type would have a wide range of what had been made allowable based on observed data in 2010. For example, small blocks reflecting street rights-of-way can sometimes erroneously get assigned residential units when mapped from street addresses. This and other potential data flaws can create very high densities in blocks. To avoid these outliers, the 80th percentile of densities within a given zone was used. Similarly, the 80th percentile of 2015 NETS densities within a municipality's various commercial zones were used to determine the max allowable density of employment.

Adhering to a precise allowable residential units or employment maximums that might be allowable with commercial square footage was not the goal in the constraints developed for UrbanSim. Since the forecast has a goal of approximating a plausible future outcome, the capacities of blocks in the model constraints were designed to reflect the fact that zoning codes are not always the determining factor on what or how much gets built. For example:

- zoning can be overwritten with code changes, variances, and other exceptions for development projects;
- developers, elected officials and/or communities can seek changes or exceptions if they want something built that diverges from the code; and
- some "anti-growth" communities create an environment where certain locations are not likely to approach the maximums allowed on paper.

The initial draft constraints were adjusted to be reflective of the probability of growth in the face of demand due to the malleability of zoning codes and the imprecision of the 80th percentile approach. Early 2020 to 2050 simulations were tested for ability of draft constraints to produce growth rates that were somewhat in line with prior municipal forecasts. When a municipality or district received population or employment growth well beyond what prior DVRPC forecasts had foreseen, capacities were constrained to reach a more plausible outcome. Later, county review of draft results created further opportunity to discuss what reasonable growth in places with high demand might look like. SLUAC members conveyed comments on municipal results indicating certain places were already fairly built out and that results were too high where the model saw demand but didn't know the limits of what build-out would be.

Real Estate Development Pipeline

In addition to the introduction of a behavioral model making probabilistic choices on where employment, residential units, and households will locate, the 2050 population and employment forecast was bolstered by data on near- and long-term planned real estate development projects. This first-time regional dataset was developed by DVRPC staff in collaboration with county partners. Proposed and under construction from CoStar's commercial and multifamily database was a key starting point in the effort. Newspaper articles and social media announcements of projects augmented the list.

DVRPC and County staff worked together to gather additional sources of information. There were efforts to interpret the scale and phasing of transformative master plans, often the source of the most distant completion years in the pipeline. Since data was collected in 2020 and into 2021, recent development with completion years of 2016 to 2020 were used as "future" development from the 2015 base year. Recently built single-family residential unit

A hallmark of the DVRPC forecasting process has always been its engagement with county partners to ensure local knowledge and ground-truthing. UrbanSim has enhanced collaboration with partners by allowing them to see inputs and outputs of the model displayed on the map. SLUAC members were given login credentials to the web-based UrbanCanvas Viewer platform where they could see mapped layers posted for their review, and they could mark locations with comments on missing pipeline projects or unexpected results for DVRPC staff to respond to in the next draft simulation until they had a model results they were comfortable with.

data was derived from parcel files and assessor data from each county. Counties with GIS resources of subdivision plan approvals and other developments worked with DVRPC staff to identify upcoming projects missing from the draft pipeline. DVRPC has a NearMap subscription that gives access to detailed aerial photography of the region with three sets of images taken each year. This aided the determination of the project status and helped pinpoint the completion year. Perceived stage of construction informed assignment of near-term completion years for projects underway. For projects yet to break ground, completion year assumptions were applied relative to plan approval year.

Figures 4 and 5 display regional concentrations of development pipeline projects used in the population and employment forecasts. Figure 4 shows the residential project concentrations by number of residential units and Figure 5 shows nonresidential square footage added. Both figures make use of hexbins, which are hexagonal polygons—in this case, a half-mile wide—summarizing all residential units or nonresidential square footage within them.

DVRPC's UrbanSim model largely works at the census block level, as stated, however, it was designed with an interconnected parcel-level platform. After compiling a regional parcel layer within the model, pipeline projects' locations were assigned to parcels throughout the region. Each project in the pipeline used in the 2015–2050 forecasts was tagged as such to catalog forecast assumptions. In future studies, the final forecast scenario can be reproduced with new real estate projects added or those that appear no longer viable removed.

Each parcel is associated with its census block ID so that new projects can be summed by block, development type, and simulation year. With this information, block vacancy levels increase with the addition of newly built residential units, and employment capacity derived from square footage of newly built nonresidential buildings is added to each block. When household control totals increase for a simulation year, newly added vacant residential units from pipeline projects are prioritized for filling first, before the model allocates the remaining households using the HLCM. Similarly, new commercial square footage in the pipeline translated to added block employment capacity with a per square foot employment factor. New employment added to the region is prioritized for allocation to these blocks with increased capacity to replicate "filling" the new commercial space. Then the ELCM allocates the balance of employment added for that year in the most attractive blocks where employment capacity remains.

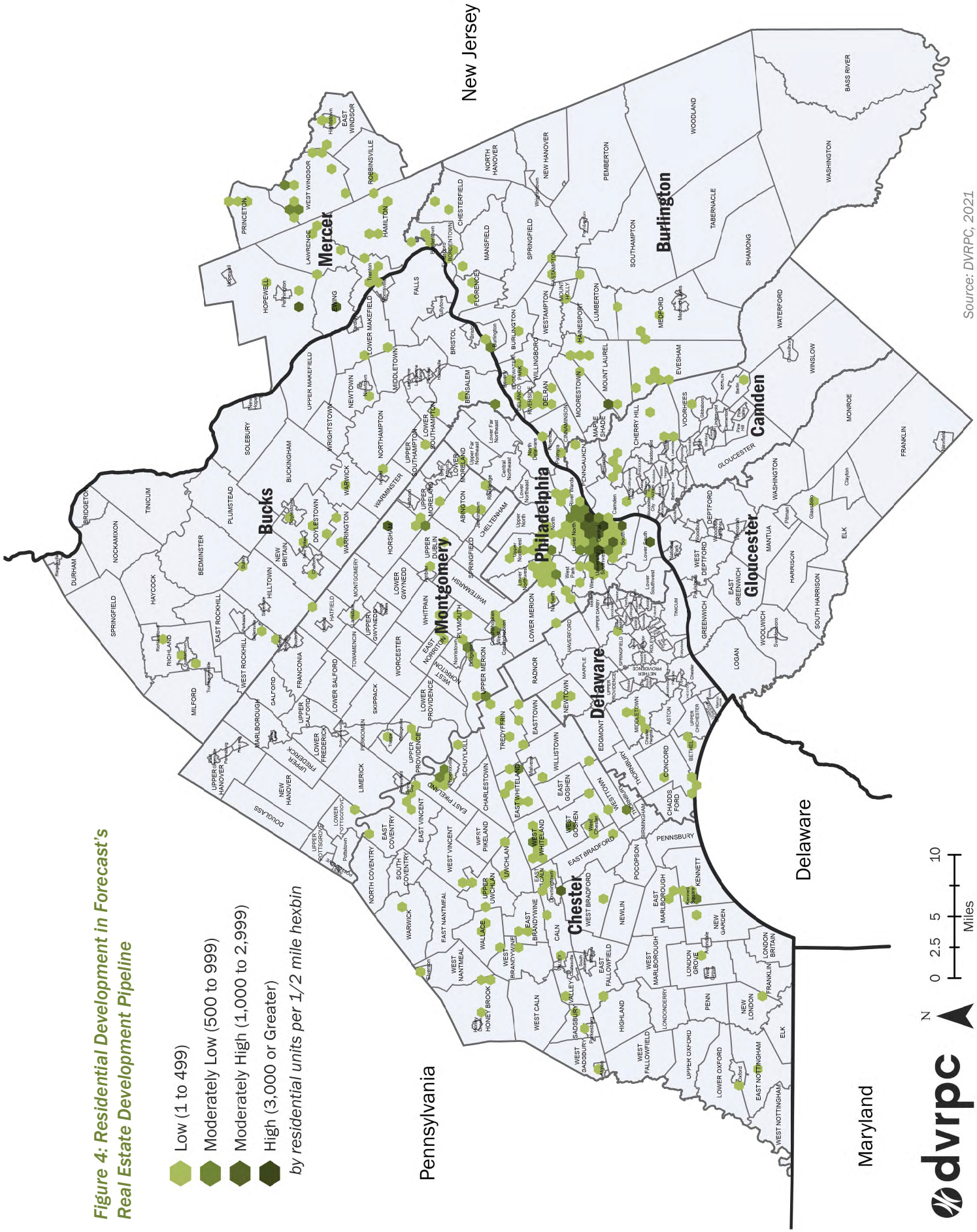
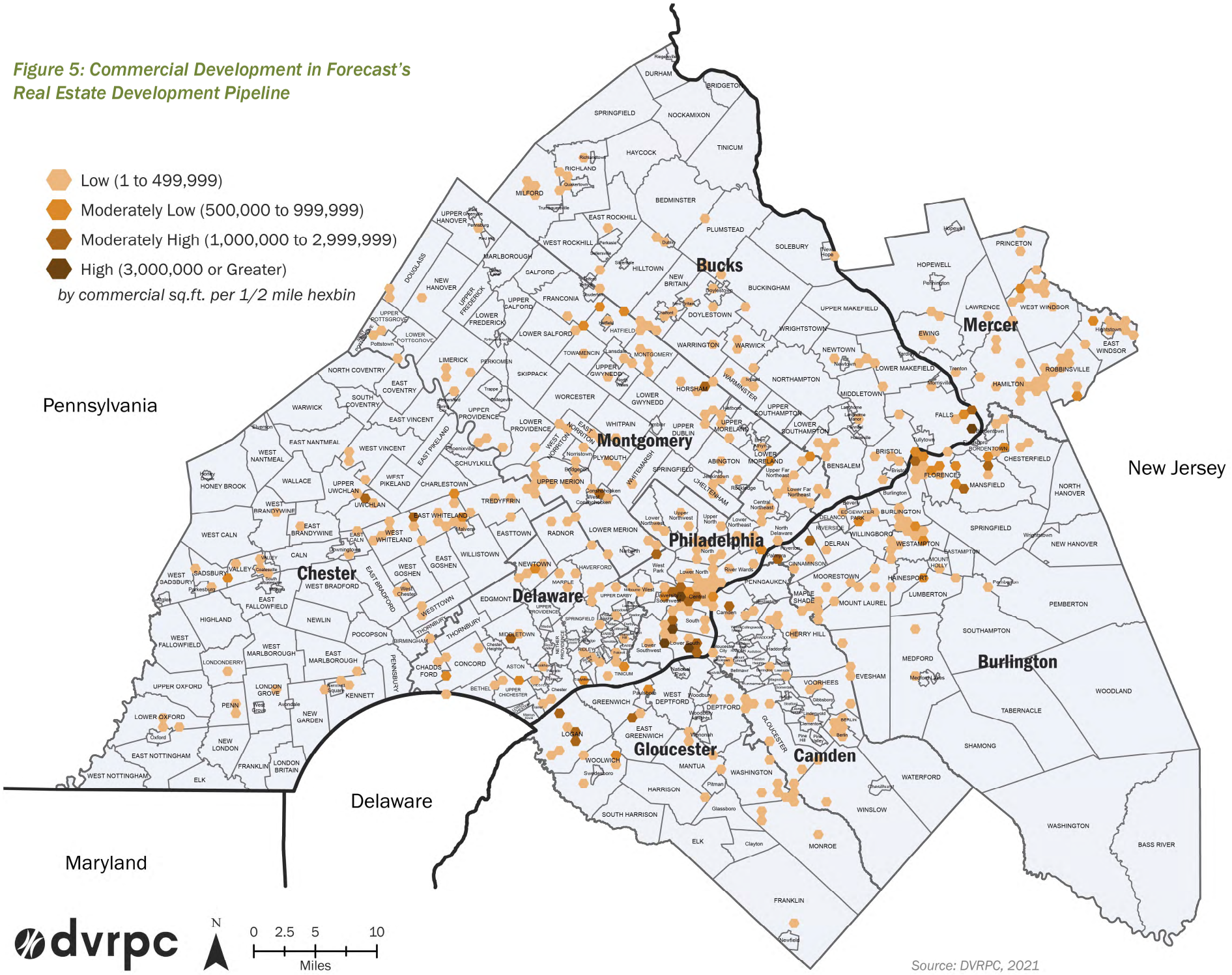


Figure 4: Residential Development in Forecast's Real Estate Development Pipeline

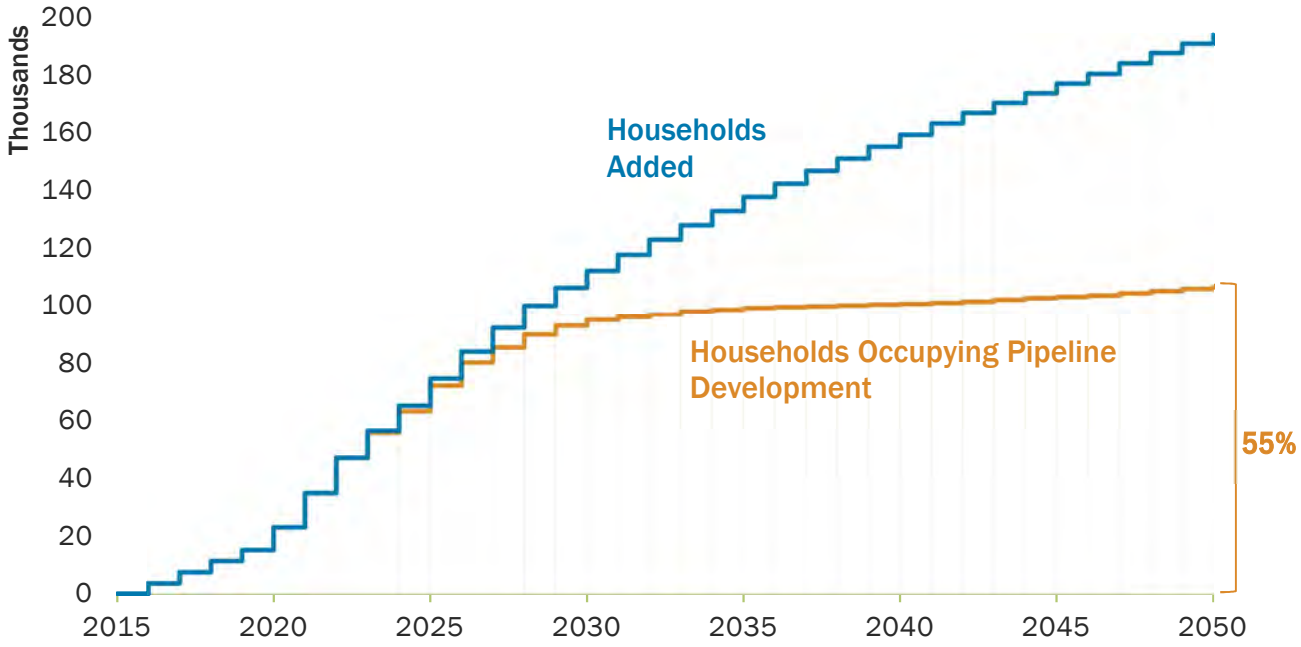
Figure 5: Commercial Development in Forecast's Real Estate Development Pipeline



Source: DVRPC, 2021

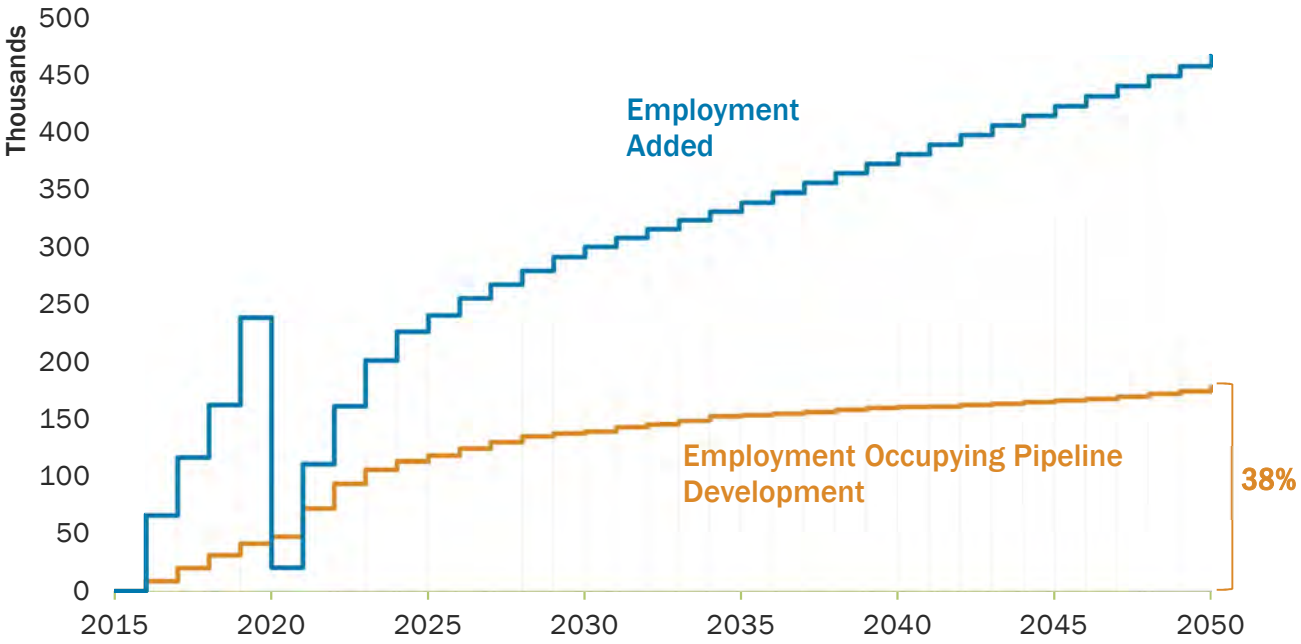
Figures 6 and 7 show the significant role the real estate pipeline had in allocating future growth. Particularly, for household growth, where 55 percent of new households added in the forecast selected blocks with newly built units.

Figure 6: Share of Forecasted Households Added Due to Residential Pipeline Projects by Year



Source: DVRPC 2021

Figure 7: Share of Forecasted Employment Added Due to Nonresidential Pipeline Projects by Year



Source: DVRPC 2021

Two-Phased Forecasting and Review

The forecast began in 2020 and 2021, the 2015 base year was quite distant compared to the prior forecast with the same base year, even though a decennial census count was still unavailable for a base. DVRPC staff worked to conform the early years in the forecast period to known observed data. The UrbanSim model allowed DVRPC and partners to focus first on forecasting to 2019 to achieve results reflecting years that were then in the past, then lock in a 2019 base model year for testing 2020 to 2050 simulations.

2015–2019 "Forecast"

Observed data was used to keep modeled results in close proximity to observed data sources as much as possible:

- these sources for 2015 to 2019 totals by county, and sometimes municipal/district geographies were used in:
    - household and employment control totals;
    - model calibration; and
- household and employment relocation models were employed to allow declines in some areas.

SLUAC members reviewed preliminary 2019 results and gave feedback to DVRPC staff. Despite the nearness of the modeled result in many aspects, all agreed it best to improve the fit to data sources by employing a post-processing procedure to randomly select households and employment in geographies exceeding source totals and moving them to geographies where the modeled result fell short.

Finalizing the 2015 and 2019 zonal results allowed the travel model team to calibrate and validate the travel model with a new 2019 base year.

While much was done to ensure conformity with observed data, even the "observed" sources were often estimates based on the best available data. PEP releases and the later Decennial count proved how divergent results from two different demographic data collection efforts could be. This is demonstrated in Table 3, with the 2019 PEP Release 2015–2019 population estimates, followed by the 2020 Decennial Census count. The sparkline graphs for each geography show how counter to the estimated annual PEP trends the Decennial count was. Such a drastic change would not have happened in one year, so the PEP must have been missing some of the change dynamics that followed the 2010 Census.

Additionally, little was known in any detail or certainty of what conditions were at small geographies like census blocks prior to the 2020 Census. UrbanSim offers a modeled translation of information reported at higher geographies to small areas of the region.

Table 3: Comparison of U.S. Census Bureau Observed Population Sources

Year	2019 PEP Estimates 2015	2016	2017	2018	2019	2020 Decennial Census	Sparkline
Burlington	446,832	445,972	445,610	444,745	445,349	461,860	
Camden	507,638	507,002	506,224	506,353	506,471	523,485	
Gloucester	290,943	290,761	290,961	291,525	291,636	302,294	
Mercer	368,124	367,699	368,168	368,188	367,430	387,340	
Four New Jersey Counties	1,613,537	1,611,434	1,610,963	1,610,811	1,610,886	1,674,979	
Bucks	625,276	625,861	626,811	627,812	628,270	646,538	
Chester	515,055	516,767	518,901	522,086	524,989	534,413	
Delaware	563,225	563,708	563,858	565,231	566,747	576,830	
Montgomery	817,180	819,791	824,303	826,924	830,915	856,553	
Philadelphia	1,571,065	1,576,051	1,580,601	1,583,592	1,584,064	1,603,797	
Five Pennsylvania Counties	4,091,801	4,102,178	4,114,474	4,125,645	4,134,985	4,218,131	
DVRPC Region	7,320,890	7,327,062	7,338,417	7,349,285	7,358,776	7,568,089	

Source: U.S. Census Bureau's Population Estimates Program (2019 Release), and 2020 Decennial Census

2019–2050 Forecast

With a modeled, observed data-conforming 2019 base year established, DVRPC staff began forecasting out to the 2050 forecast horizon year. SLUAC members were asked to give feedback on the prior DVPRC 2045 forecast's municipal- and district-level results. Members noted where expectations for growth had diverged from the prior forecast round and where they wound up the same. Testing how different configurations impacted model results informed the process of creating municipal and district targets that fit to county 2050 targets.

Staff ensured the latest available CoStar data was reflected in the real estate development pipeline. SLUAC members were able to place comments at points in the UrbanCanvas viewer map to ensure important development projects were included in the pipeline. Video calls were conducted one-on-one with each county to: ensure no significant projects were missed, clarify DVRPC staff questions about project comments, and ensure the important growth locations were noted so model performance could be monitored to ensure reasonable results.

Targets helped DVRPC staff troubleshoot model specifications. For example, when municipal growth was too high, block-level residential unit and employment capacity were decreased. Staff iterated by making various changes and then running the model for one or several concurrent simulations (each taking 5 to 6 hours) with varying configurations to see which version performed the best—calibrated or uncalibrated simulations and regional or subregional control totals were all tested in various combinations.

Fall-back measures

The UrbanSim platform has a failsafe function, called Adjustments, to make changes that would be difficult for a model to predict. Although few, Adjustments were employed to move employment from the Philadelphia Police Department headquarters at the Round House at Race and 7th streets to a remodeled former Philadelphia Inquirer building on Broad Street in 2021. In the 2015–2019 forecast an Adjustment was used to move a state prison in Skippack Township in Montgomery County to an adjacent census block after a newly built facility was occupied and the prior correctional facility was closed in 2018. GQ population for the inmates were also moved within in the GQ table.

While the model creates a rational, sound method to replicate real world relationships and behaviors, models have limits. An additional tool provided by the UrbanSim team was the capability to apply "dummy" values to bolster or lessen the attractiveness of municipalities to HLCM and ELCM segments. When other means were exhausted to reach results in the realm of targets, testing combinations of positive or negative dummy values for certain municipalities helped augment the modeled results. Combined with other model configurations changes the iterative model simulations and assessments resembled a game of whack-a-mole, where limiting growth one place caused it to reappear somewhere else or making a place more attractive meant taking away some growth elsewhere.

Adoption and Use

Once model results were determined to be close enough to targets to then share with county partners, SLUAC members received draft results. After requests to revise targets for a handful of municipalities, a final round of model runs and modifications were performed until the new targets were met. At that point the results were brought before the Regional Technical Committee (RTC). The RTC recommended Board approval on June 8, 2021 and the Board approved it on June 24, 2021.

Following adoption, the zonal-level results were passed to the travel model team and conformity analysis travel model runs began. The forecast model scenario has been and will continue to be used and adapted with different development outcomes to compare to the adopted result for DVRPC studies.

For analyses looking to utilize DVRPC Board-adopted forecasts prior to the next update, one option is to take the change in population from 2020 to the future year of interest and add that amount to the 2020 Census figures.

Conclusion

Updated forecasting methods, including a modeled allocation of change in travel model zones due to simulations of real-world supply and demand, in combination with block-level capacity constraints, greatly augments the DVRPC forecast, travel model inputs, and analytical capabilities of the agency. The detailed information required by the travel model at the zonal level is further enhanced with more probable outcomes because households and employment locate based on what's attractive or unattractive to certain demographic segments or employment sectors and built-out areas are too constrained for more growth. Municipal and county-level forecasts are informed by simulated, probable decision-making and individual real estate projects actually under construction or in planning stages.

Formation of, and engagement with, the SLUAC, including access to mapped model inputs and outputs and ability to markup the map interface with comments, furthers the collaborative nature of DVRPC forecast. Working with partners and providing modeled results for them to react to makes a better final product and model. SLUAC reality checks and local knowledge allow troubleshooting that continues to inspire model improvements.

PART II:

Forecast Results

Population Forecast

Table 3 summarizes DVRPC's adopted regional and county population forecasts in five-year increments through 2050. Municipal- and district-level forecasts are provided as a table in Appendix A. The Greater Philadelphia Region was forecasted to gain just over half a million new residents between 2015 and 2050, a gain of nearly 9 percent. County-level gains varied. This is demonstrated in the treemap graph in Figure 8. County rectangles are proportionate to their gain in size over the period. Chester County, Pennsylvania had the greatest absolute change of over 130,000 people, or 26 percent of the region's growth. Philadelphia and Montgomery County in Pennsylvania were in second and third place for gains, respectively. Combined, these three counties are expected to contribute more than two-thirds of regional growth over this period. Camden County, New Jersey was forecast to gain almost 12,000 new residents, a 2.3 percent increase, but was the least significant contributor to regional growth, at 2.4 percent share of regional growth.

By percentage change, the greatest county increase was Chester County, exceeding 25 percent. The next two percentage change rankings are Gloucester County with 12.5 percent and Montgomery County with 12.3 percent.

With 9 percent of the region's population in 2015 and 10.4 percent in 2050, Chester County was the only county to see more than half a percentage change in its share of the total regional population. It was also the only county to see a positive change in ranking for population size. Chester is expected to exceed Delaware County's population by 2030, however, it will still lag behind Philadelphia, Montgomery, and Bucks counties in the most populous rankings. Philadelphia's share of the region remains the highest and steady at 27 percent—nearly the same as all the region's New Jersey counties combined. Pennsylvania counties gain at a faster pace than New Jersey counties in the region, with 9.6 and 6.7 percent growth, respectively.

Figures 9 to 12 map various views of the population forecast by municipality and Philadelphia planning district. Figure 9 shows total 2050 population. Population is most concentrated in Philadelphia and the region's mature suburbs and along major highway corridors, including Route 422, Route 30, Mercer County's Route 1 corridor, and the Route 55 in Gloucester County and southern Camden County. Figure 10 shows the absolute change from base to horizon year, Figure 11 the percentage change for the period, and Figure 12 the density of the absolute change. While the absolute and percentage change maps show considerable differences in geographic clustering of growth, the density of absolute change more accurately shows the concentration of new population in the region, which tends to be in its urban core and mature suburbs and boroughs.

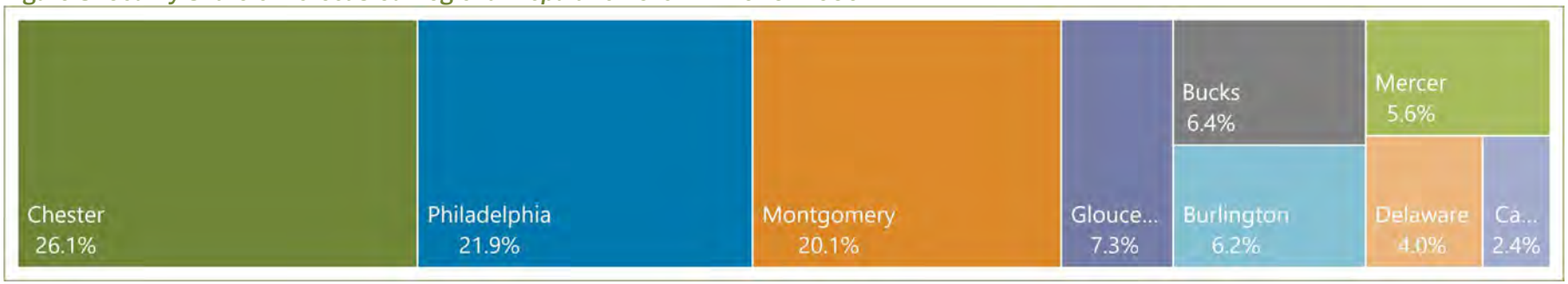
Table 4 shows the highest ranked counties for absolute growth between 2015 and 2050, and Table 5 shows the highest ranked for percentage change over the same period. Both tables feature a visualization of the timing within the forecast period in which the growth is expected to occur. Philadelphia's Central Planning District has the greatest absolute forecasted growth with a gain of nearly 48,000 people during the period. This is greater than the forecasted growth of the next three most highly ranked municipalities and districts (University – Southwest and Lower North districts, and Upper Merion Township) combined. With a percentage change of 32.2 percent, the Central district just barely fell outside of the top 20 percentage change rankings.

Table 4: Forecasted Population by County, 2015–2050

County	2015 Census Estimate	2019 Census Estimate*	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015–2050 Absolute Change	2015–2050 Percentage Change
Burlington	446,863	445,349	447,971	463,830	471,001	474,401	476,962	477,540	477,884	31,021	6.9%
Camden	507,692	506,472	507,378	512,630	512,790	515,571	518,525	519,127	519,476	11,784	2.3%
Gloucester	291,091	291,636	291,710	295,192	298,495	307,003	312,710	321,140	327,608	36,517	12.5%
Mercer	368,200	367,430	367,925	378,112	392,070	394,244	395,881	396,202	396,462	28,262	7.7%
Four New Jersey Counties	1,613,846	1,610,887	1,614,984	1,649,764	1,674,356	1,691,219	1,704,078	1,714,009	1,721,430	107,584	6.7%
Bucks	625,225	628,270	629,040	635,768	641,786	646,930	651,113	654,442	657,131	31,906	5.1%
Chester	515,043	524,989	528,218	563,468	586,300	604,007	620,391	634,119	645,673	130,630	25.4%
Delaware	563,142	566,747	566,610	570,207	573,667	576,903	579,706	581,763	583,376	20,234	3.6%
Montgomery	817,199	830,915	833,914	852,415	868,662	883,800	896,576	907,942	917,924	100,725	12.3%
Philadelphia	1,571,440	1,584,004	1,590,161	1,627,244	1,650,559	1,658,977	1,665,398	1,670,261	1,680,798	109,358	7.0%
Five Pennsylvania Counties	4,092,049	4,134,925	4,147,943	4,249,102	4,320,974	4,370,617	4,413,184	4,448,527	4,484,902	392,853	9.6%
DVRPC Region	**5,705,895**	**5,745,812**	**5,762,927**	**5,898,866**	**5,995,330**	**6,061,836**	**6,117,262**	**6,162,536**	**6,206,332**	**500,437**	**8.8%**

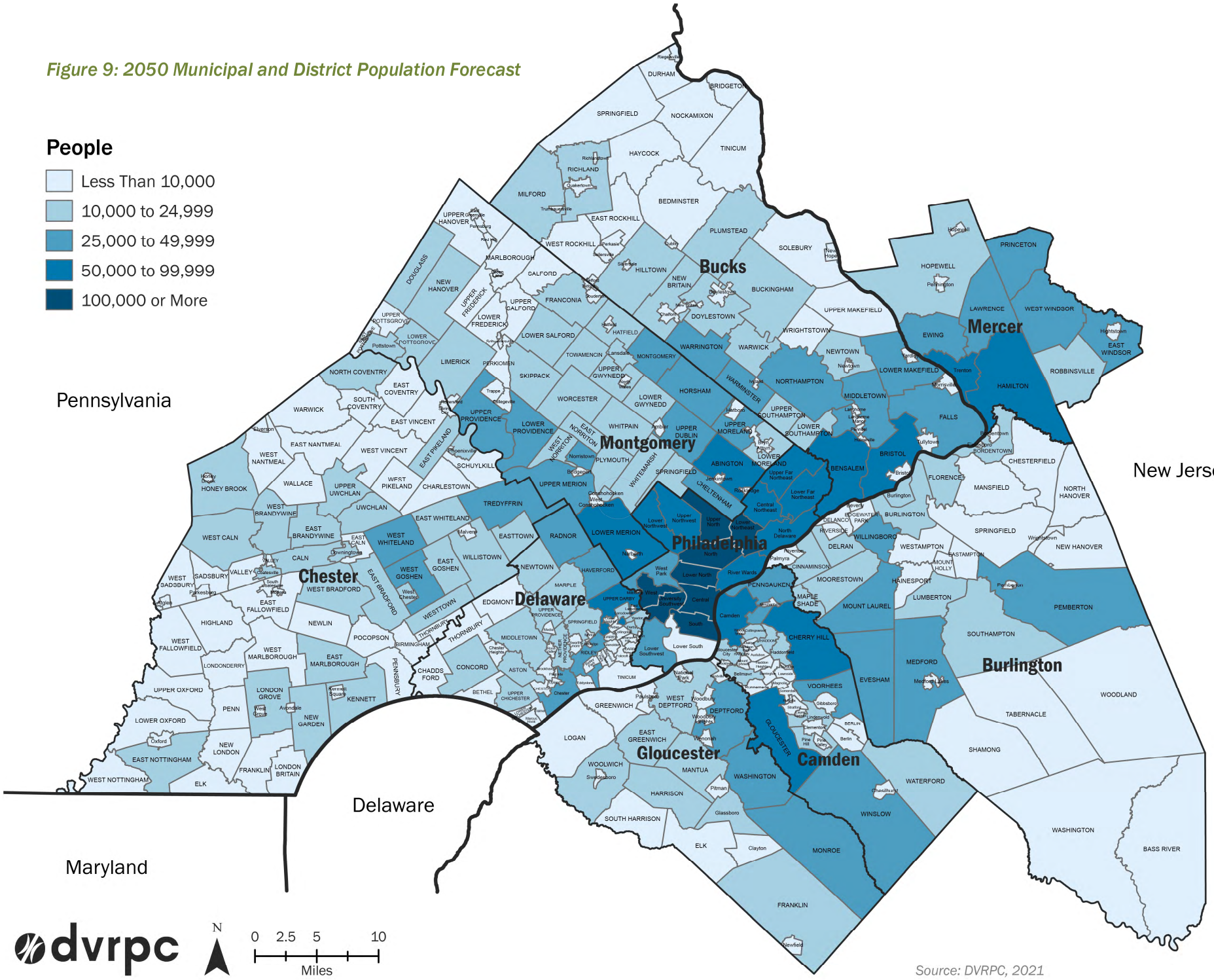
Source: DVRPC, 2021

Figure 8: County Share of Forecasted Regional Population Growth: 2015–2050



Source: DVRPC, 2021

Figure 9: 2050 Municipal and District Population Forecast



Source: DVRPC, 2021

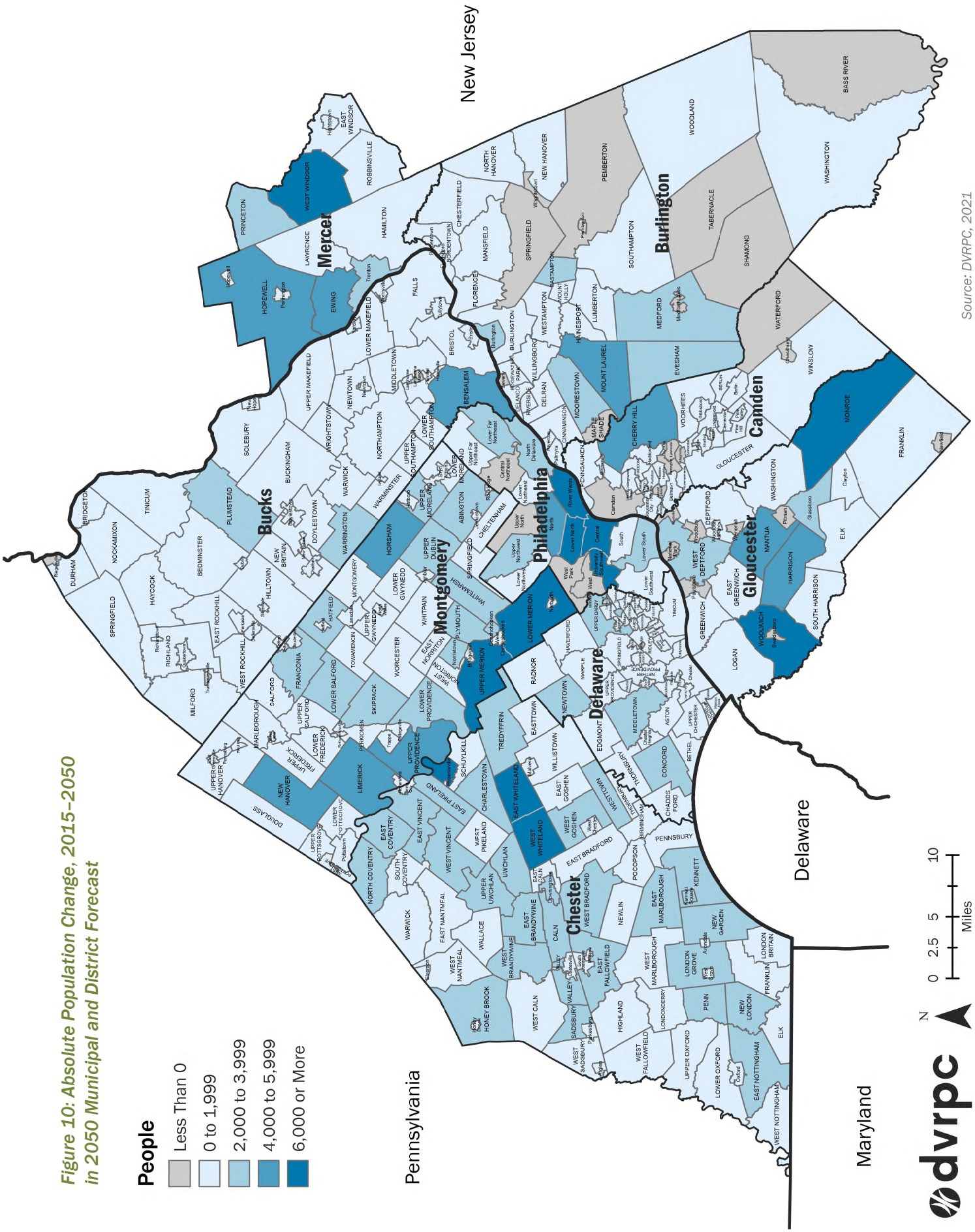


Figure 10: Absolute Population Change, 2015–2050 in 2050 Municipal and District Forecast

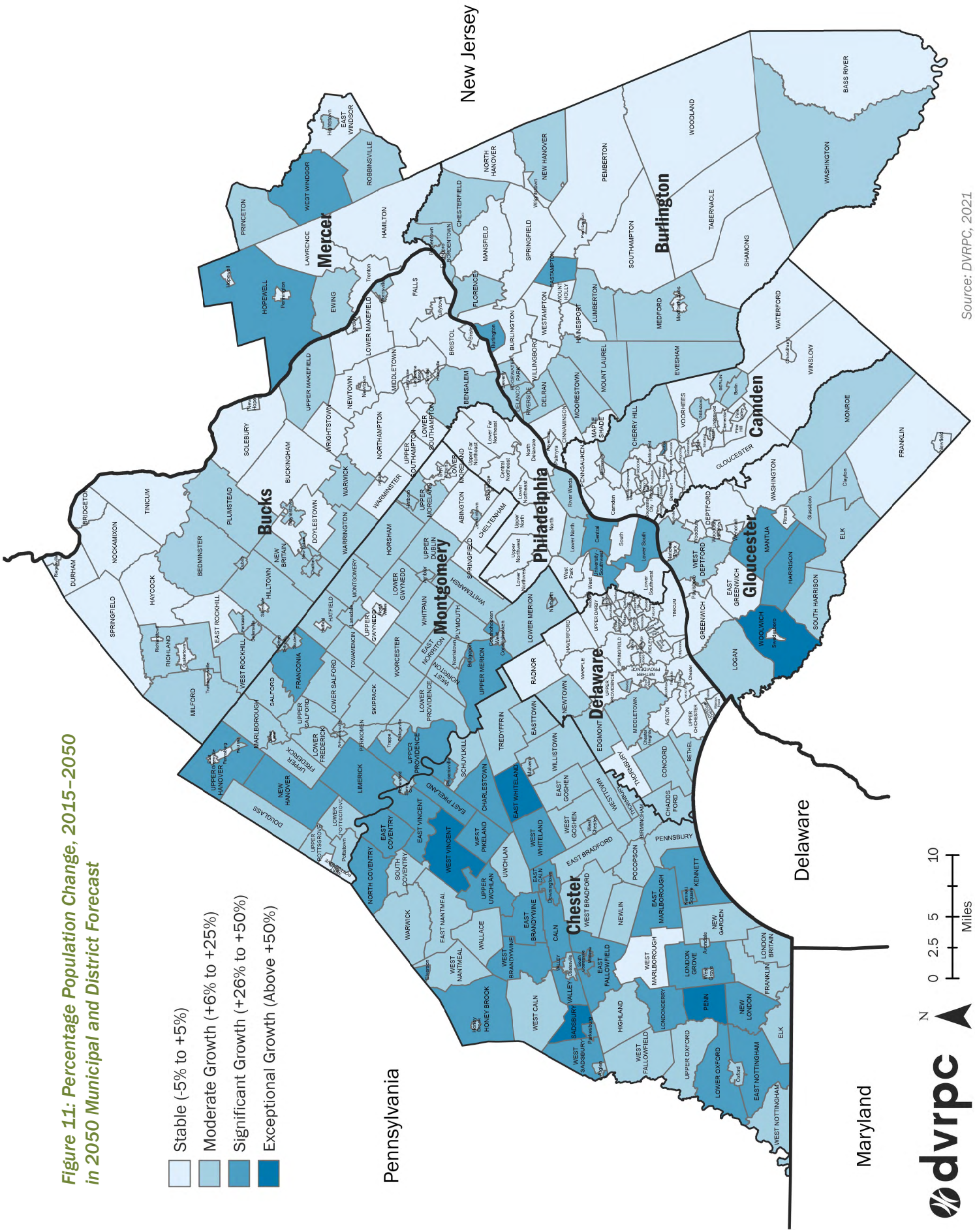
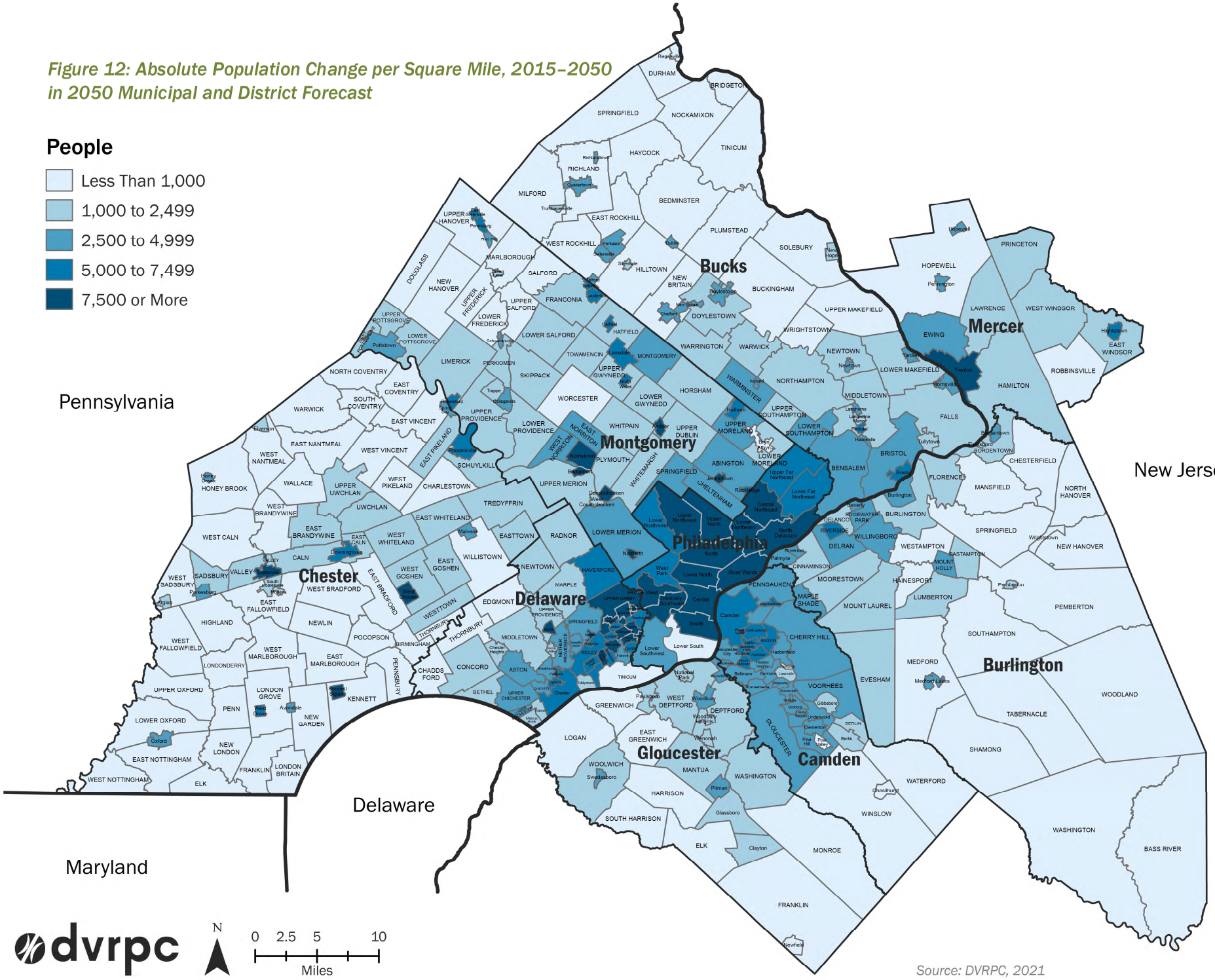


Figure 11: Percentage Population Change, 2015–2050 in 2050 Municipal and District Forecast

Figure 12: Absolute Population Change per Square Mile, 2015–2050 in 2050 Municipal and District Forecast



Source: DVRPC, 2021

Table 5: Municipalities and Districts with the Greatest Forecasted Absolute Change in Population, 2015–2050

Absolute Change Rank	Municipality or District	County	2015 – 2050 Absolute Change	2015 – 2050 Percentage Change	Phasing of Change by Five-Year Period: 2015 – 2020	2020 – 2025	2025 – 2030	2030 – 2035	2035 – 2040	2040 – 2045	2045 – 2050
1	Central	Philadelphia	47,757	38.2%							
2	University - Southwest	Philadelphia	21,112	26.0%							
3	Lower North	Philadelphia	14,920	16.5%							
4	Upper Merion Township	Montgomery	9,495	33.3%							
5	Woolwich Township	Gloucester	9,398	76.7%							
6	West Windsor Township	Mercer	9,183	32.8%							
7	West Whiteland Township	Chester	9,045	49.1%							
8	River Wards	Philadelphia	8,766	12.6%							
9	Monroe Township	Gloucester	7,799	21.2%							
10	Lower Merion Township	Montgomery	7,024	12.0%							
11	Phoenixville Borough	Chester	6,911	41.4%							
12	East Whiteland Township	Chester	6,195	58.4%							
13	New Hanover Township	Montgomery	5,979	48.0%							
14	Upper Providence Township	Montgomery	5,972	25.6%							
15	Cherry Hill Township	Camden	5,226	7.4%							
16	Limerick Township	Montgomery	5,063	27.1%							
17	Harrison Township	Gloucester	5,015	38.9%							
18	Horsham Township	Montgomery	4,826	18.2%							
19	Hopewell Township	Mercer	4,636	25.2%							
20	Bensalem Township	Bucks	4,399	7.3%							

Source: DVRPC, 2021

Six locations made both top 20 lists due to regionally significant absolute change and locally significant percentage change. These are:

- Woolwich Township in Gloucester County (absolute rank = 5, percentage rank = 1);
- West Whiteland Township in Chester County (absolute rank = 7, percentage rank = 8);Phoenixville Borough in Chester County (absolute rank = 11, percentage rank = 16);
- East Whiteland Township in Chester County (absolute rank = 12, percentage rank = 4);
- New Hanover Township in Montgomery County (absolute rank = 13, percentage rank = 9); and
- Harrison Township in Gloucester County (absolute rank = 17, percentage rank = 19);

Table 6: Municipalities and Districts with the Greatest Forecasted Percentage Change in Population, 2015–2050

Percentage Change Rank	Municipality or District	County	2015 – 2050 Percentage Change	2015 – 2050 Absolute Change	Phasing of Change by Five-Year Period: 2015 – 2020	2020 – 2025	2025 – 2030	2030 – 2035	2035 – 2040	2040 – 2045	2045 – 2050
1	Woolwich Township	Gloucester	76.7%	9,398							
2	West Vincent Township	Chester	69.2%	3,478							
3	Sadsbury Township	Chester	64.7%	2,508							
4	East Whiteland Township	Chester	58.4%	6,195							
5	Penn Township	Chester	51.3%	2,828							
6	Tavistock Borough	Camden	50.0%	2							
7	West Sadsbury Township	Chester	49.7%	1,224							
8	West Whiteland Township	Chester	49.1%	9,045							
9	New Hanover Township	Montgomery	48.0%	5,979							
10	East Brandywine Township	Chester	44.6%	3,693							
11	East Marlborough Township	Chester	43.8%	3,187							
12	East Vincent Township	Chester	43.6%	3,017							
13	Charlestown Township	Chester	43.3%	2,436							
14	Downingtown Borough	Chester	43.1%	3,421							
15	West Brandywine Township	Chester	41.7%	3,117							
16	Phoenixville Borough	Chester	41.4%	6,911							
17	Lower South	Philadelphia	40.1%	2,234							
18	Elverson Borough	Chester	39.9%	522							
19	Harrison Township	Gloucester	38.9%	5,015							
20	East Pikeland Township	Chester	38.8%	2,839							

Source: DVRPC, 2021

Tavistock Borough in Camden County is ranked 6 for percentage change rank, even though it is only forecast to gain two people from its 2015 estimate of four, resulting in a 50 percent increase. It is anticipated to remain the region's smallest municipality. Also, Lower South appears 17th in the percentage change rankings, as the lifting of residential prohibitions in the Navy Yard will significantly increase a district more known as a home to ports, logistics, and employment centers.

Phasing of regional population growth through the forecast period tended to be higher in the front half or the period and slower over the last half. Phasing at the subcounty level varied, as demonstrated by both top 20 lists. Some had quick gains then went down to barely any growth. Hopewell Township in Mercer County saw population loss over the first five years of the forecast, only to rebound quite a bit the adjacent five years, then tapering to almost no gains by 2035. Some like Harrison Township aren't forecasted to grow significantly until the 2040s.

Employment Forecast

Table 6 summarizes DVRPC's adopted regional and county employment forecasts in five-year increments through 2050, and municipal-level employment forecasts are provided in Appendix B. The Greater Philadelphia Region's employment was forecasted to increase by nearly 467,000 between 2015 and 2050, a gain of over 15 percent.

Overall, employment gains over the forecast period were strikingly close to the 500,000 person gain in the population forecast of the same period—a rare occurrence, as much of the population added would not be of a working age. However, this is best explained in the context of the trends of the 2010s discussed earlier under control total development. While population was growing slowly (0.7 percent) from 2015 to 2019, employment increased by nearly 8 percent leading to record low unemployment rates and the strong recovery and growth out of the Great Recession. Then 2020 erased nearly all the regional employment gains of the prior four years in just one year—more than half the counties (Burlington, Camden, Bucks, Chester, and Montgomery) had 2020 employment totals drop below their 2015 totals. Due to that drop, the 31-year regional employment gain from 2019 to 2050 of 6.9 percent was less than the 2015 to 2019 increase. Percentage population gains over the 2019 to 2050 period were more on par with employment, at 8 percent, but the absolute increase of 460,500 new residents was a little more than twice employment's gains of 227,500—a much more typical phenomenon over a forecasted period.

Figure 13 is a treemap showing county shares of regional employment growth. Philadelphia is forecasted to be the largest contributor to regional employment growth from 2015 to 2050. Its 30 percent share nearly equaled the next highest contributors, Montgomery (16 percent share) and Chester (15 percent share), combined. The remaining 39 percent of regional growth is forecast to be fairly evenly distributed amongst the rest of the region's counties. Gloucester had the highest in the group—a 7.5 percent share—and Camden and Bucks had the lowest, each with a 6 percent share of regional growth.

Figures 14 to 17 map various views of the employment forecast by municipality and planning area. Figure 14 shows total 2050 employment, Figure 15 the absolute change from base to horizon year, Figure 16 the percentage change for the period, and Figure 17 the density of the absolute change. The density of employment change had a somewhat similar distribution to population change density. It tends to increase in the region's core and where existing employment is already in place. The top 20 rankings for absolute and percentage growth are found in tables 8 and 9, respectively. There were only three locations making both lists:

- University – Southwest (absolute rank = 1, percentage rank =13);
- Lower South (absolute rank = 2, percentage rank =1); and
- Florence Township (absolute rank = 18, percentage rank =3);

Regionally, the employment forecast's trendline was more tumultuous than the population forecast, as seen in Figure 5 (Figure 4's household growth is a fair proxy for the population forecast for comparison sake). The phasing of growth in these top 20 lists shows a good number of municipalities with negative or flat growth due to the quick gains then even quicker losses of the 2015–2020 period. However, quite a few had significant net gains even to 2020. Most had significant gains between 2020 and 2025. Only a few experienced significant growth in the later years of the forecast. Looking at the three that made the rankings in both lists, University – Southwest, and Lower South saw gains in later years. However, University-Southwest projected slower growth in the middle years then spikes up at the end of the forecast due to development over the rail yard proposed to be capped north of 30th Street Station. Lower South saw continued growth throughout, increasing later on with the completion of the Navy Yard master plan. Florence Township had significant growth in the early forecast due to growth in distribution centers, including a very large Amazon facility in 2018, but essentially flatlined with build-out in later years—sometimes with small losses.

Table 7: Forecasted Employment by County, 2015–2050

County	2015 NETS	2019 Base*	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015–2050 Absolute Change	2015–2050 Percentage Change
Burlington	243,773	258,237	241,044	259,622	263,784	265,316	267,490	269,911	272,016	28,243	11.6%
Camden	235,055	249,243	231,475	251,236	254,730	256,495	258,893	261,276	263,284	28,229	12.0%
Gloucester	116,906	132,468	123,027	138,978	142,306	144,046	146,652	149,362	151,891	34,985	29.9%
Mercer	229,501	244,636	230,526	246,875	249,634	251,430	254,122	256,973	259,402	29,901	13.0%
Four New Jersey Counties	825,235	884,584	826,072	896,711	910,454	917,287	927,157	937,522	946,593	121,358	14.7%
Bucks	315,665	334,841	308,713	326,700	332,639	335,324	338,108	341,149	343,632	27,967	8.9%
Chester	302,656	322,898	298,305	336,321	345,083	351,403	358,837	366,724	373,664	71,008	23.5%
Delaware	261,417	277,473	262,851	279,772	283,398	285,407	288,280	291,175	293,526	32,109	12.3%
Montgomery	567,585	605,989	559,413	601,014	610,266	616,333	625,549	635,373	643,790	76,205	13.4%
Philadelphia	766,163	852,244	804,345	839,480	857,981	872,566	882,135	889,907	904,311	138,148	18.0%
Five Pennsylvania Counties	2,213,486	2,393,445	2,233,627	2,383,287	2,429,367	2,461,033	2,492,909	2,524,328	2,558,923	345,437	15.6%
DVRPC Region	3,038,721	3,278,029	3,059,699	3,279,998	3,339,821	3,378,320	3,420,066	3,461,850	3,505,516	466,795	15.4%

Source: DVRPC, 2021

Figure 13: County Share of Forecasted Regional Employment Growth: 2015–2050

Source: DVRPC, 2021

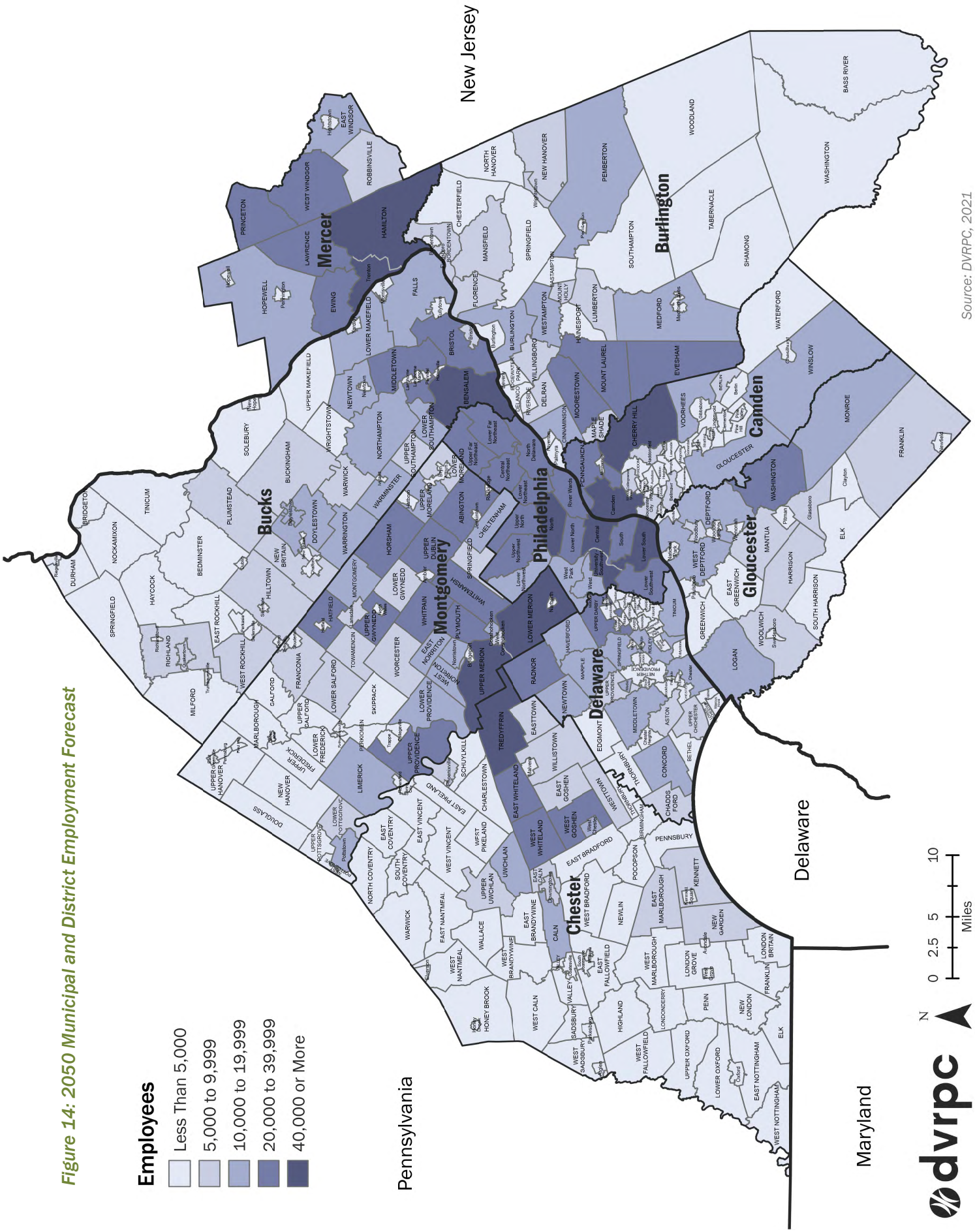
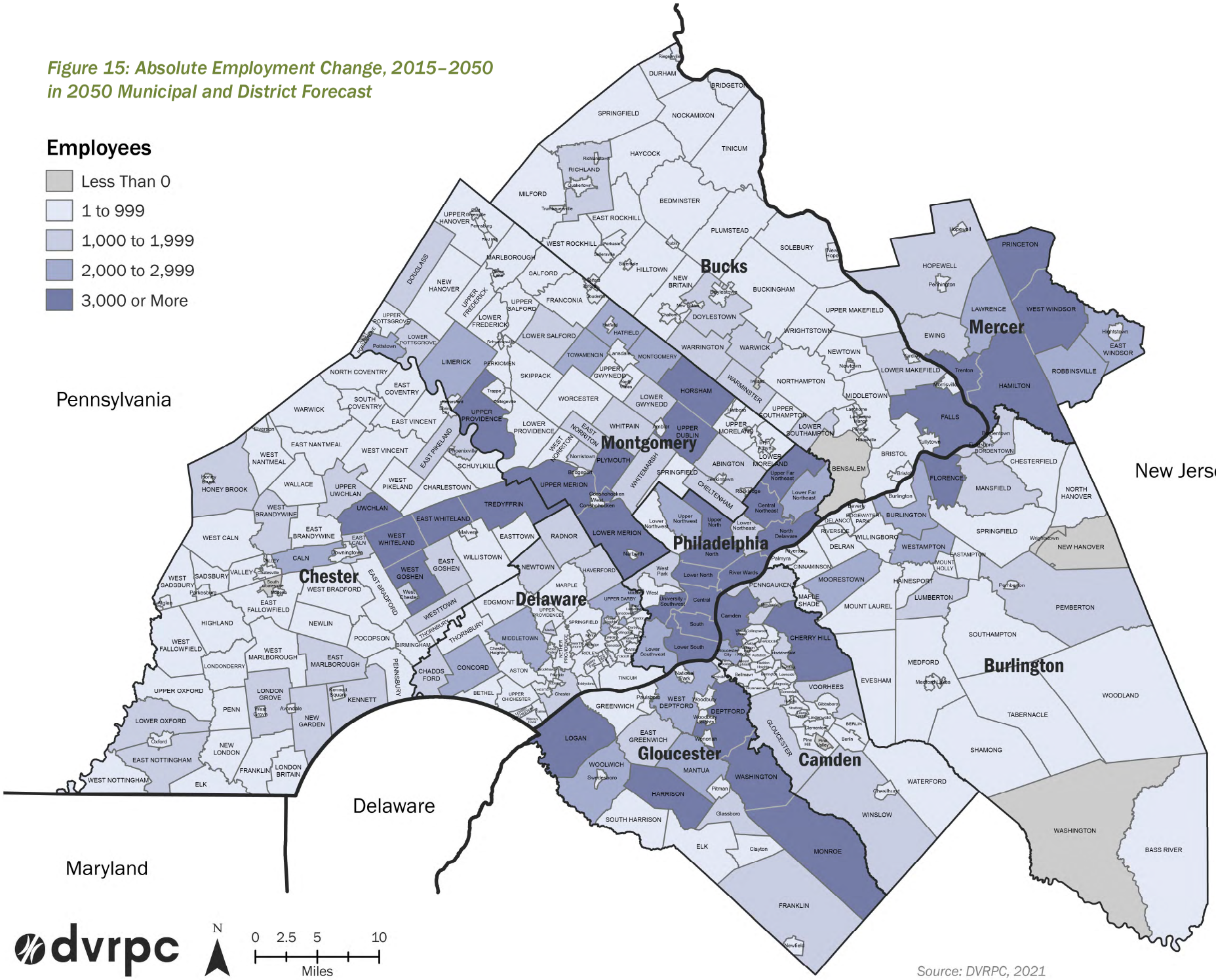


Figure 14: 2050 Municipal and District Employment Forecast

Figure 15: Absolute Employment Change, 2015–2050 in 2050 Municipal and District Forecast



Source: DVRPC, 2021

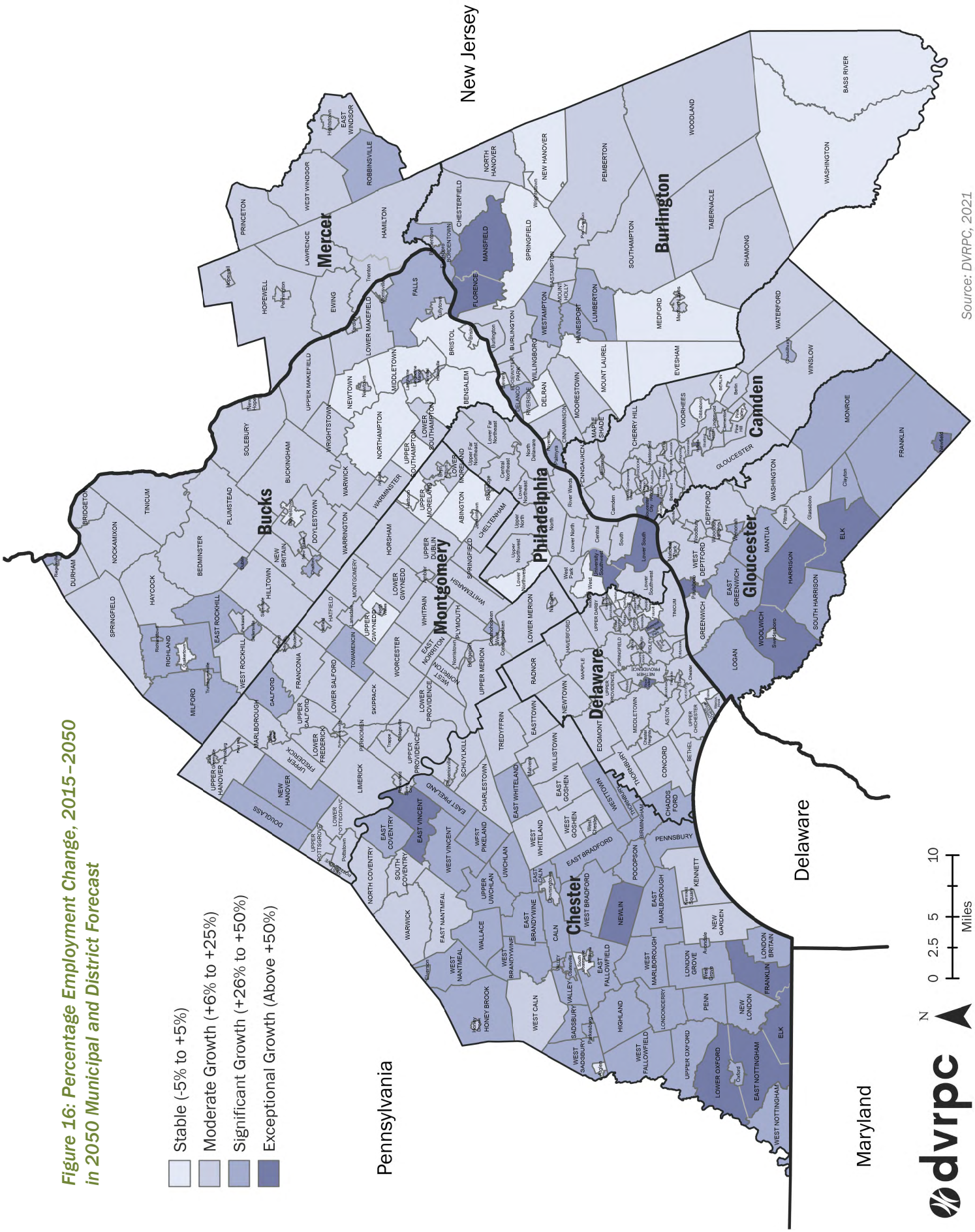
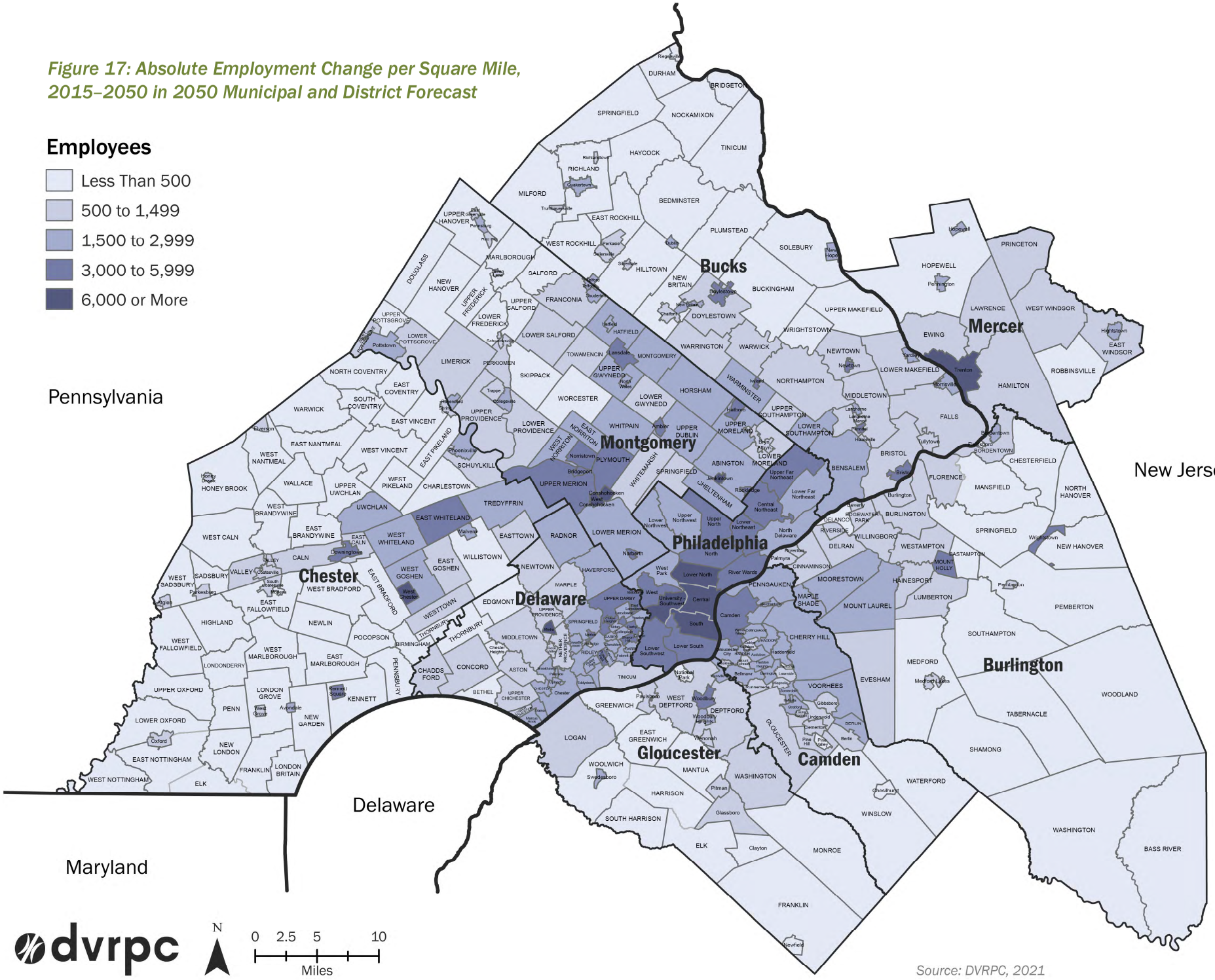


Figure 16: Percentage Employment Change, 2015–2050 in 2050 Municipal and District Forecast

Figure 17: Absolute Employment Change per Square Mile, 2015–2050 in 2050 Municipal and District Forecast



Source: DVRPC, 2021

Table 8: Municipalities and Districts with the Greatest Forecasted Absolute Change in Employment, 2015–2050

Absolute Change Rank	Municipality or District	County	2015 – 2050 Absolute Change	2015 – 2050 Percentage Change	Phasing of Change by Five-Year Period: 2015 – 2020	2020 – 2025	2025 – 2030	2030 – 2035	2035 – 2040	2040 – 2045	2045 – 2050
1	University - Southwest	Philadelphia	47,870	58.4%							
2	Lower South	Philadelphia	25,687	132.4%							
3	Central	Philadelphia	20,263	7.7%							
4	Camden City	Camden	9,445	23.8%							
5	Upper Merion Township	Montgomery	8,396	16.0%							
6	East Whiteland Township	Chester	7,520	29.2%							
7	Lower Merion Township	Montgomery	6,416	11.8%							
8	Tredyffrin Township	Chester	6,412	12.4%							
9	Hamilton Township	Mercer	6,019	14.3%							
10	Upper Far Northeast	Philadelphia	5,354	17.6%							
11	West Windsor Township	Mercer	5,033	15.1%							
12	South	Philadelphia	5,018	15.0%							
13	Falls Township	Bucks	4,761	31.7%							
14	River Wards	Philadelphia	4,648	20.5%							
15	West Whiteland Township	Chester	4,626	21.5%							
16	Plymouth Township	Montgomery	4,461	19.7%							
17	Horsham Township	Montgomery	4,454	14.2%							
18	Florence Township	Burlington	4,301	90.1%							
19	Upper North	Philadelphia	4,194	13.8%							
20	West Goshen Township	Chester	4,159	16.7%							

Source: DVRPC, 2021

Conclusion

- From over the 35-year span of the forecast to 2050, the region is expected to gain half a million people and nearly as many jobs, bringing total population to over 6.2 million and total employment to more than 3.5 million.
- Chester County's growth will make it over take Delaware County as the fourth largest by population and Bucks County as the third largest by employment in the region.
- Led by Philadelphia, Montgomery, and Chester Counties, population and employment growth are greatest in the regions Five Pennsylvania counties in both absolute and percentage change.
- Montgomery County had the highest count of municipalities or districts (five municipalities) in the top 20 absolute growers in population. Philadelphia had the highest count (seven districts) of top 20 absolute employment growers.

Table 9: Municipalities and Districts with the Greatest Forecasted Percentage Change in Employment, 2015–2050

Percentage Change Rank	Municipality or District	County	2015 – 2050 Percentage Change	2015 – 2050 Absolute Change	Phasing of Change by Five-Year Period: 2015 – 2020	2020 – 2025	2025 – 2030	2030 – 2035	2035 – 2040	2040 – 2045	2045 – 2050
1	Lower South	Philadelphia	132.4%	25,687							
2	Hi-Nella Borough	Camden	97.1%	202							
3	Florence Township	Burlington	90.1%	4,301							
4	Woolwich Township	Gloucester	89.2%	2,584							
5	Harrison Township	Gloucester	81.6%	3,056							
6	Elk Township	Chester	80.7%	326							
7	Norwood Borough	Delaware	71.8%	792							
8	Rose Valley Borough	Delaware	69.8%	194							
9	East Nottingham Township	Chester	68.3%	1,146							
10	Elk Township	Gloucester	66.7%	695							
11	Lower Oxford Township	Chester	64.5%	1,211							
12	Mansfield Township	Burlington	60.2%	1,985							
13	University - Southwest	Philadelphia	58.4%	47,870							
14	Dublin Borough	Bucks	58.0%	426							
15	Newfield Borough	Gloucester	54.6%	255							
16	East Vincent Township	Chester	53.2%	971							
17	Gloucester City	Camden	53.1%	2,032							
18	Paulsboro Borough	Gloucester	51.4%	924							
19	Newlin Township	Chester	51.2%	145							
20	Franklin Township	Chester	51.2%	377							

Source: DVRPC, 2021

- Chester County dominated the top 20 municipalities or districts with regard to percentage change in population with 15 municipalities making the list. With six top 20 percentage change municipalities for employment, it nudged out Gloucester County, which had 5 municipalities on the list.
- While generally slight, 33 municipalities and districts are predicted to decline in population over the forecast period, while only 8 locations expect employment decline

Appendix A

Forecasted Population by Municipality and District, 2015–2050

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Appendix A: Forecasted Population by Municipality and District, 2015–2050

Table A-1: Burlington County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400503370	Bass River Township	1,438	1,416	1,416	1,416	1,417	1,425	1,430	1,432	1,432	-6	-0.4%
3400505740	Beverly City	2,509	2,479	2,479	2,479	2,479	2,488	2,501	2,503	2,503	-6	-0.2%
3400506670	Bordentown City	3,838	3,792	3,792	4,603	4,603	4,626	4,652	4,654	4,658	820	21.4%
3400506700	Bordentown Township	11,810	11,914	11,914	13,474	13,482	13,527	13,618	13,635	13,639	1,829	15.5%
3400508920	Burlington City	9,786	9,858	9,856	10,297	12,300	12,380	12,444	12,448	12,454	2,668	27.3%
3400508950	Burlington Township	22,664	22,594	22,547	22,705	22,842	22,930	23,015	23,036	23,048	384	1.7%
3400512670	Chesterfield Township	7,493	7,573	7,573	8,250	8,420	8,453	8,474	8,481	8,481	988	13.2%
3400512940	Cinnaminson Township	16,558	16,342	16,646	17,092	17,099	17,192	17,280	17,300	17,307	749	4.5%
3400517080	Delanco Township	4,501	4,430	4,496	4,795	4,799	4,836	4,855	4,857	4,858	357	7.9%
3400517440	Delran Township	16,725	16,492	16,566	17,925	18,293	18,381	18,469	18,500	18,514	1,789	10.7%
3400518790	Eastampton Township	5,921	6,144	6,656	8,048	8,048	8,077	8,115	8,123	8,133	2,212	37.4%
3400520050	Edgewater Park Township	8,772	8,647	8,647	9,085	9,183	9,248	9,310	9,320	9,321	549	6.3%
3400522110	Evesham Township	45,304	45,188	45,701	47,250	47,262	47,539	47,749	47,815	47,864	2,560	5.7%
3400523250	Fieldsboro Borough	539	552	552	552	552	554	557	557	557	18	3.3%
3400523850	Florence Township	12,644	12,486	12,592	13,003	13,332	13,384	13,431	13,439	13,445	801	6.3%
3400529010	Hainesport Township	6,035	5,976	5,976	5,995	5,999	6,154	6,263	6,293	6,316	281	4.7%
3400542060	Lumberton Township	12,360	12,192	12,183	12,962	13,550	13,613	13,695	13,709	13,727	1,367	11.1%
3400543290	Mansfield Township	8,574	8,533	8,533	8,634	8,745	8,844	8,932	8,959	8,984	410	4.8%
3400543740	Maple Shade Township	18,842	18,476	18,458	18,476	18,489	18,588	18,661	18,676	18,693	-149	-0.8%
3400545120	Medford Township	23,261	23,394	23,381	24,283	25,723	25,831	25,996	26,043	26,055	2,794	12.0%
3400545210	Medford Lakes Borough	4,052	3,914	3,914	3,914	3,914	3,928	3,946	3,950	3,950	-102	-2.5%
3400547880	Moorestown Township	20,430	20,516	20,493	21,539	23,089	24,021	24,189	24,231	24,243	3,813	18.7%
3400548900	Mount Holly Township	9,527	9,547	9,597	9,663	9,663	9,699	9,734	9,742	9,743	216	2.3%
3400549020	Mount Laurel Township	41,823	41,250	42,408	45,144	45,156	45,522	45,843	45,911	45,947	4,124	9.9%
3400551510	New Hanover Township	7,197	7,808	7,787	7,808	7,808	7,812	7,820	7,820	7,820	623	8.7%
3400553070	North Hanover Township	7,587	7,470	7,470	7,470	7,470	7,520	7,575	7,590	7,595	8	0.1%
3400555800	Palmyra Borough	7,253	7,140	7,140	7,140	7,450	7,486	7,529	7,535	7,545	292	4.0%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400557480	Pemberton Borough	1,352	1,324	1,324	1,324	1,324	1,325	1,325	1,325	1,327	-25	-1.8%
3400557510	Pemberton Township	27,522	26,979	26,966	26,979	26,982	27,060	27,172	27,201	27,235	-287	-1.0%
3400563510	Riverside Township	7,944	7,816	7,816	8,416	8,416	8,416	8,435	8,439	8,439	495	6.2%
3400563660	Riverton Borough	2,718	2,685	2,677	2,685	2,685	2,698	2,722	2,722	2,722	4	0.1%
3400566810	Shamong Township	6,436	6,367	6,367	6,367	6,367	6,401	6,416	6,418	6,421	-15	-0.2%
3400568610	Southampton Township	10,276	10,095	10,095	10,095	10,096	10,212	10,302	10,317	10,323	47	0.5%
3400569990	Springfield Township	3,328	3,257	3,257	3,257	3,257	3,263	3,276	3,283	3,284	-44	-1.3%
3400572060	Tabernacle Township	6,896	6,794	6,794	6,794	6,794	6,823	6,855	6,866	6,866	-30	-0.4%
3400577150	Washington Township	665	711	711	711	711	711	711	711	711	46	6.9%
3400578200	Westampton Township	8,658	8,649	8,649	8,649	8,649	8,723	8,819	8,821	8,836	178	2.1%
3400581440	Willingboro Township	31,034	32,005	32,005	32,007	32,009	32,151	32,275	32,307	32,317	1,283	4.1%
3400582420	Woodland Township	1,779	1,768	1,761	1,768	1,768	1,783	1,788	1,788	1,788	9	0.5%
3400582960	Wrightstown Borough	812	776	776	776	776	777	783	783	783	-29	-3.6%

Source: DVRPC, 2021

Table A-2: Camden County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400702200	Audubon Borough	8,686	8,637	8,637	8,637	8,637	8,661	8,684	8,690	8,699	13	0.1%
3400702230	Audubon Park Borough	1,004	1,002	1,002	1,002	1,002	1,002	1,008	1,013	1,013	9	0.9%
3400703250	Barrington Borough	6,758	6,642	6,642	6,645	6,648	6,681	6,722	6,730	6,736	-22	-0.3%
3400704750	Bellmawr Borough	11,429	11,359	11,359	11,359	11,359	11,398	11,438	11,443	11,446	17	0.1%
3400705440	Berlin Borough	7,571	7,536	7,719	7,925	7,925	7,951	7,979	7,989	7,992	421	5.6%
3400705470	Berlin Township	5,396	5,691	5,691	5,691	5,691	5,698	5,703	5,703	5,703	307	5.7%
3400708170	Brooklawn Borough	1,893	1,898	1,898	1,898	1,898	1,919	1,927	1,927	1,927	34	1.8%
3400710000	Camden City	75,252	73,562	73,775	74,085	74,086	74,313	74,569	74,628	74,664	-588	-0.8%
3400712280	Cherry Hill Township	70,843	71,245	71,459	75,614	75,694	75,844	76,024	76,052	76,069	5,226	7.4%
3400712550	Chesilhurst Borough	1,626	1,618	1,614	1,618	1,618	1,621	1,624	1,624	1,624	-2	-0.1%
3400713420	Clementon Borough	4,881	4,957	4,957	4,957	4,957	4,977	4,989	4,989	4,991	110	2.3%
3400714260	Collingswood Borough	13,896	13,884	13,881	13,886	13,886	13,958	14,008	14,021	14,025	129	0.9%
3400726070	Gibbsboro Borough	2,240	2,218	2,305	2,407	2,407	2,407	2,415	2,415	2,415	175	7.8%
3400726760	Gloucester Township	63,592	63,903	63,887	63,919	63,951	64,610	65,224	65,355	65,425	1,833	2.9%
3400726820	Gloucester City	11,255	11,219	11,382	11,541	11,541	11,583	11,641	11,658	11,665	410	3.6%
3400728740	Haddon Township	14,423	14,541	14,541	14,541	14,542	14,620	14,706	14,719	14,723	300	2.1%
3400728770	Haddonfield Borough	11,356	11,317	11,317	11,317	11,317	11,350	11,395	11,395	11,401	45	0.4%
3400728800	Haddon Heights Borough	7,448	7,529	7,529	7,529	7,529	7,537	7,569	7,575	7,577	129	1.7%
3400732220	Hi-Nella Borough	835	858	858	858	858	863	863	863	863	28	3.4%
3400739210	Laurel Springs Borough	1,866	1,866	1,866	1,866	1,866	1,866	1,873	1,873	1,873	7	0.4%
3400739420	Lawnside Borough	2,907	2,882	2,882	2,882	2,882	2,896	2,900	2,900	2,904	-3	-0.1%
3400740440	Lindenwold Borough	17,385	17,263	17,263	17,269	17,270	17,335	17,414	17,441	17,461	76	0.4%
3400742630	Magnolia Borough	4,299	4,273	4,273	4,273	4,273	4,278	4,286	4,287	4,293	-6	-0.1%
3400745510	Merchantville Borough	3,707	3,700	3,700	3,702	3,702	3,710	3,734	3,738	3,738	31	0.8%
3400748750	Mount Ephraim Borough	4,632	4,587	4,587	4,587	4,587	4,600	4,607	4,608	4,608	-24	-0.5%
3400753880	Oaklyn Borough	3,968	3,955	3,955	3,955	3,955	3,985	4,015	4,016	4,016	48	1.2%
3400757660	Pennsauken Township	35,552	35,761	35,899	36,055	36,060	36,159	36,286	36,299	36,307	755	2.1%
3400758770	Pine Hill Borough	10,410	10,417	10,417	10,417	10,417	10,434	10,458	10,463	10,467	57	0.5%
3400758920	Pine Valley Borough	11	11	11	11	11	11	11	11	11	0	0.0%
3400765160	Runnemede Borough	8,303	8,300	8,300	8,300	8,300	8,327	8,335	8,339	8,343	40	0.5%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400768340	Somerdale Borough	5,405	5,477	5,477	5,477	5,477	5,477	5,487	5,494	5,498	93	1.7%
3400771220	Stratford Borough	6,972	6,955	6,951	6,955	6,955	7,001	7,035	7,041	7,044	72	1.0%
3400772240	Tavistock Borough	4	6	6	6	6	6	6	6	6	2	50.0%
3400776220	Voorhees Township	29,202	29,175	29,133	29,177	29,183	29,326	29,476	29,514	29,525	323	1.1%
3400777630	Waterford Township	10,718	10,684	10,681	10,685	10,685	10,697	10,709	10,709	10,711	-7	-0.1%
3400781740	Winslow Township	39,051	38,629	38,609	38,669	38,700	39,548	40,479	40,659	40,773	1,722	4.4%
3400782450	Woodlynne Borough	2,916	2,915	2,915	2,915	2,915	2,922	2,926	2,940	2,940	24	0.8%

Source: DVRPC, 2021

Table A-3: Gloucester County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3401513360	Clayton Borough	8,475	8,738	8,738	9,102	9,247	9,635	9,650	9,691	9,747	1,272	15.0%
3401517710	Deptford Township	30,519	30,349	30,337	30,378	30,407	31,003	31,500	31,579	31,623	1,104	3.6%
3401519180	East Greenwich Township	10,310	10,719	10,712	10,720	10,720	10,736	10,744	10,744	10,744	434	4.2%
3401521060	Elk Township	4,094	4,173	4,172	4,252	4,301	4,621	4,650	4,737	4,840	746	18.2%
3401524840	Franklin Township	16,585	16,300	16,299	16,307	16,318	16,753	17,063	17,101	17,144	559	3.4%
3401526340	Glassboro Borough	19,207	20,288	20,431	20,655	20,709	21,245	21,380	21,513	21,661	2,454	12.8%
3401528185	Greenwich Township	4,831	4,795	4,795	4,795	4,795	4,818	4,831	4,836	4,844	13	0.3%
3401530180	Harrison Township	12,897	13,116	13,116	13,537	13,632	13,758	14,209	16,096	17,912	5,015	38.9%
3401541160	Logan Township	5,981	5,874	5,874	5,907	5,955	6,409	6,437	6,446	6,451	470	7.9%
3401543440	Mantua Township	15,076	14,840	14,846	15,334	15,557	16,357	16,620	18,087	19,149	4,073	27.0%
3401547250	Monroe Township	36,796	36,865	36,858	37,577	37,834	38,562	39,200	41,973	44,595	7,799	21.2%
3401549680	National Park Borough	2,987	2,943	2,943	2,943	2,943	2,943	2,958	2,958	2,958	-29	-1.0%
3401551390	Newfield Borough	1,568	1,543	1,543	1,543	1,545	1,556	1,558	1,563	1,563	-5	-0.3%
3401557150	Paulsboro Borough	5,952	5,854	5,854	5,854	5,854	5,872	5,882	5,885	5,896	-56	-0.9%
3401559070	Pitman Borough	8,871	8,741	8,723	8,743	8,743	8,782	8,817	8,818	8,821	-50	-0.6%
3401569030	South Harrison Township	3,177	3,123	3,123	3,128	3,142	3,389	3,447	3,476	3,501	324	10.2%
3401571850	Swedesboro Borough	2,599	2,568	2,568	2,568	2,568	2,580	2,595	2,595	2,597	-2	-0.1%
3401577180	Washington Township	48,168	47,753	47,741	47,779	47,799	48,421	49,017	49,160	49,209	1,041	2.2%
3401578110	Wenonah Borough	2,258	2,212	2,212	2,212	2,212	2,215	2,238	2,238	2,238	-20	-0.9%
3401578800	West Deptford Township	21,330	20,980	20,971	21,025	21,063	22,140	23,019	23,251	23,404	2,074	9.7%
3401580120	Westville Borough	4,200	4,144	4,144	4,148	4,149	4,160	4,180	4,181	4,187	-13	-0.3%
3401582120	Woodbury City	9,954	9,794	9,789	9,795	9,796	9,831	9,849	9,859	9,862	-92	-0.9%
3401582180	Woodbury Heights Borough	2,999	2,964	2,964	2,964	2,967	2,987	3,007	3,007	3,007	8	0.3%
3401582840	Woolwich Township	12,257	12,960	12,957	13,926	16,239	18,230	19,859	21,346	21,655	9,398	76.7%

Source: DVRPC, 2021

Table A-4: Mercer County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3402119780	East Windsor Township	27,265	27,288	27,281	27,288	28,459	28,501	28,564	28,569	28,577	1,312	4.8%
3402122185	Ewing Township	36,008	36,303	36,798	38,774	40,138	40,158	40,164	40,166	40,168	4,160	11.6%
3402129310	Hamilton Township	87,970	87,065	87,093	87,493	88,457	88,627	88,817	88,868	88,912	942	1.1%
3402131620	Hightstown Borough	5,485	5,304	5,302	5,642	6,332	6,352	6,368	6,369	6,373	888	16.2%
3402133150	Hopewell Borough	1,920	1,906	1,906	1,906	1,906	1,909	1,922	1,923	1,923	3	0.2%
3402133180	Hopewell Township	18,392	17,725	17,725	20,288	21,801	22,684	22,928	22,980	23,028	4,636	25.2%
3402139510	Lawrence Township	32,887	32,435	32,410	32,597	33,973	34,193	34,413	34,459	34,475	1,588	4.8%
3402157600	Pennington Borough	2,530	2,576	2,575	2,576	2,576	2,592	2,600	2,605	2,605	75	3.0%
3402160900	Princeton	30,157	31,187	31,168	31,346	32,048	32,214	32,336	32,360	32,374	2,217	7.4%
3402163850	Robbinsville Township	14,036	14,543	14,631	14,907	14,907	14,919	14,948	14,951	14,951	915	6.5%
3402174000	Trenton City	83,518	83,203	83,148	84,348	84,377	84,960	85,625	85,750	85,861	2,343	2.8%
3402180240	West Windsor Township	28,032	27,895	27,888	30,947	37,096	37,135	37,196	37,202	37,215	9,183	32.8%

Source: DVRPC, 2021

Table A-5: Bucks County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4201704976	Bedminster Township	7,040	7,229	7,238	7,250	7,415	7,592	7,718	7,828	7,943	903	12.8%
4201705616	Bensalem Township	60,163	60,507	60,591	62,161	62,678	63,248	63,763	64,185	64,562	4,399	7.3%
4201708592	Bridgeton Township	1,291	1,281	1,289	1,289	1,292	1,292	1,296	1,304	1,314	23	1.8%
4201708760	Bristol Borough	9,603	9,576	9,575	9,586	9,622	9,645	9,656	9,685	9,715	112	1.2%
4201708768	Bristol Township	53,912	53,473	53,492	53,543	53,826	54,166	54,443	54,642	54,789	877	1.6%
4201709816	Buckingham Township	20,286	20,240	20,266	20,290	20,427	20,572	20,697	20,753	20,814	528	2.6%
4201712504	Chalfont Borough	4,055	4,269	4,286	4,305	4,329	4,355	4,374	4,394	4,408	353	8.7%
4201719784	Doylestown Borough	8,297	8,272	8,230	8,797	9,185	9,208	9,238	9,254	9,278	981	11.8%
4201719792	Doylestown Township	17,489	17,398	17,356	17,625	17,976	18,148	18,268	18,321	18,356	867	5.0%
4201720104	Dublin Borough	2,171	2,133	2,131	2,406	2,419	2,441	2,458	2,460	2,466	295	13.6%
4201720480	Durham Township	1,140	1,133	1,133	1,133	1,133	1,147	1,147	1,162	1,166	26	2.3%
4201721760	East Rockhill Township	5,732	5,728	5,732	5,735	5,771	5,809	5,847	5,874	5,911	179	3.1%
4201725112	Falls Township	33,599	33,520	33,529	33,539	33,602	33,633	33,662	33,711	33,724	125	0.4%
4201733224	Haycock Township	2,204	2,210	2,212	2,217	2,224	2,229	2,252	2,269	2,275	71	3.2%
4201734952	Hilltown Township	15,238	15,822	15,862	16,405	16,512	16,617	16,746	16,823	16,863	1,625	10.7%
4201736192	Hulmeville Borough	1,005	999	999	999	1,000	1,000	1,004	1,011	1,012	7	0.7%
4201737304	Ivyland Borough	942	941	930	941	946	952	963	970	977	35	3.7%
4201741392	Langhorne Borough	1,588	1,580	1,581	1,583	1,587	1,592	1,592	1,595	1,595	7	0.4%
4201741416	Langhorne Manor Borough	1,470	1,424	1,414	1,428	1,428	1,433	1,447	1,447	1,459	-11	-0.7%
4201744968	Lower Makefield Township	32,545	32,802	32,870	33,503	33,861	33,935	34,028	34,068	34,129	1,584	4.9%
4201745112	Lower Southampton Township	19,046	19,177	19,184	19,291	19,419	19,469	19,495	19,526	19,540	494	2.6%
4201749120	Middletown Township	45,201	44,966	44,923	45,007	45,280	45,617	45,923	46,238	46,456	1,255	2.8%
4201749384	Milford Township	10,010	10,056	10,065	10,087	10,239	10,372	10,551	10,698	10,820	810	8.1%
4201751144	Morrisville Borough	8,604	8,521	8,521	8,521	8,841	9,213	9,257	9,312	9,357	753	8.8%
4201753296	New Britain Borough	2,965	2,969	3,260	3,557	3,561	3,574	3,580	3,588	3,598	633	21.3%
4201753304	New Britain Township	11,241	11,524	11,531	11,542	11,739	11,913	12,033	12,126	12,213	972	8.6%
4201753712	New Hope Borough	2,505	2,530	2,533	2,534	2,541	2,560	2,565	2,568	2,579	74	3.0%
4201754184	Newtown Borough	2,241	2,240	2,244	2,247	2,267	2,292	2,296	2,312	2,316	75	3.3%
4201754192	Newtown Township	19,548	19,584	19,578	19,699	19,830	19,905	19,967	20,004	20,050	502	2.6%
4201754576	Nockamixon Township	3,416	3,376	3,378	3,379	3,400	3,406	3,427	3,441	3,448	32	0.9%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4201754688	Northampton Township	39,349	39,164	39,169	39,668	39,925	40,145	40,284	40,458	40,564	1,215	3.1%
4201758936	Penndel Borough	2,186	2,157	2,157	2,157	2,160	2,188	2,201	2,216	2,228	42	1.9%
4201759384	Perkasie Borough	8,391	8,738	8,751	8,751	8,787	8,851	8,876	8,921	8,935	544	6.5%
4201761616	Plumstead Township	13,432	14,483	14,488	14,554	14,981	15,354	15,746	16,052	16,357	2,925	21.8%
4201763048	Quakertown Borough	8,729	8,661	8,750	8,853	8,898	8,926	8,971	9,002	9,044	315	3.6%
4201764536	Richland Township	13,249	13,448	13,515	13,845	14,064	14,300	14,529	14,685	14,836	1,587	12.0%
4201764584	Richlandtown Borough	1,307	1,297	1,287	1,297	1,297	1,302	1,308	1,310	1,310	3	0.2%
4201764856	Riegelsville Borough	856	852	852	852	852	852	852	852	853	-3	-0.4%
4201769248	Sellersville Borough	4,256	4,283	4,282	4,418	4,462	4,513	4,549	4,560	4,571	315	7.4%
4201770744	Silverdale Borough	853	854	854	854	855	855	856	858	862	9	1.1%
4201771752	Solebury Township	8,598	8,552	8,553	8,553	8,584	8,614	8,636	8,662	8,685	87	1.0%
4201773016	Springfield Township	5,060	5,033	5,041	5,041	5,068	5,085	5,103	5,120	5,126	66	1.3%
4201776304	Telford Borough	2,182	2,205	2,196	2,338	2,505	2,527	2,528	2,528	2,533	351	16.1%
4201776784	Tinicum Township	3,972	3,952	3,965	3,973	4,008	4,044	4,087	4,105	4,116	144	3.6%
4201777704	Trumbauersville Borough	955	935	935	935	944	944	946	946	954	-1	-0.1%
4201777744	Tullytown Borough	2,205	2,181	2,183	2,183	2,211	2,217	2,219	2,221	2,224	19	0.9%
4201779128	Upper Makefield Township	8,191	8,600	8,600	8,602	8,643	8,656	8,676	8,707	8,714	523	6.4%
4201779296	Upper Southampton Township	15,081	14,956	14,946	14,968	15,108	15,233	15,310	15,394	15,443	362	2.4%
4201780952	Warminster Township	32,632	32,348	32,414	32,457	32,743	33,137	33,416	33,639	33,792	1,160	3.6%
4201781048	Warrington Township	23,796	24,560	24,581	25,038	25,229	25,484	25,658	25,795	25,888	2,092	8.8%
4201781144	Warwick Township	14,574	14,699	14,753	14,981	15,123	15,264	15,395	15,489	15,547	973	6.7%
4201783960	West Rockhill Township	5,264	5,221	5,221	5,234	5,350	5,442	5,573	5,631	5,674	410	7.8%
4201786624	Wrightstown Township	3,101	3,097	3,100	3,103	3,114	3,130	3,154	3,163	3,173	72	2.3%
4201786920	Yardley Borough	2,459	2,514	2,514	2,514	2,525	2,532	2,547	2,559	2,569	110	4.5%

Source: DVRPC, 2021

Table A-6: Chester County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202903384	Atglen Borough	1,408	1,409	1,413	1,574	1,701	1,701	1,701	1,701	1,701	293	20.8%
4202903656	Avondale Borough	1,406	1,400	1,400	1,405	1,439	1,478	1,503	1,536	1,579	173	12.3%
4202906544	Birmingham Township	4,220	4,199	4,199	4,203	4,274	4,318	4,375	4,410	4,453	233	5.5%
4202910824	Caln Township	14,150	14,275	14,271	15,301	15,986	16,584	17,141	17,600	17,923	3,773	26.7%
4202912744	Charlestown Township	5,626	6,274	6,296	6,351	6,637	6,974	7,381	7,784	8,062	2,436	43.3%
4202914712	Coatesville City	13,173	13,069	13,073	13,124	13,644	14,086	14,417	14,730	14,927	1,754	13.3%
4202919752	Downingtown Borough	7,939	7,897	7,904	10,967	11,074	11,173	11,257	11,312	11,360	3,421	43.1%
4202920824	East Bradford Township	9,942	9,896	9,905	10,323	10,478	10,720	11,026	11,274	11,437	1,495	15.0%
4202920864	East Brandywine Township	8,277	9,049	9,091	10,275	10,687	11,089	11,453	11,782	11,970	3,693	44.6%
4202920920	East Caln Township	4,874	4,847	4,856	5,632	6,102	6,102	6,107	6,107	6,117	1,243	25.5%
4202921008	East Coventry Township	6,780	6,752	6,785	7,001	7,538	8,053	8,489	8,860	9,147	2,367	34.9%
4202921104	East Fallowfield Township	7,611	7,558	7,608	7,749	8,256	8,683	9,076	9,401	9,736	2,125	27.9%
4202921192	East Goshen Township	18,213	18,149	18,158	18,187	18,534	18,834	19,119	19,340	19,496	1,283	7.0%
4202921480	East Marlborough Township	7,275	7,548	7,560	8,288	8,727	9,264	9,663	10,075	10,462	3,187	43.8%
4202921576	East Nantmeal Township	1,814	1,855	1,854	1,859	1,908	1,957	2,022	2,099	2,131	317	17.5%
4202921624	East Nottingham Township	8,894	9,085	9,100	9,214	9,909	10,445	11,007	11,433	11,906	3,012	33.9%
4202921696	East Pikeland Township	7,325	7,526	7,699	8,132	8,598	9,055	9,532	9,870	10,164	2,839	38.8%
4202921928	Easttown Township	10,573	10,634	10,635	11,443	11,676	11,788	11,874	11,966	12,041	1,468	13.9%
4202922000	East Vincent Township	6,918	7,343	7,348	8,381	8,762	9,118	9,470	9,713	9,935	3,017	43.6%
4202922056	East Whiteland Township	10,613	12,832	13,204	16,055	16,524	16,599	16,671	16,743	16,808	6,195	58.4%
4202923032	Elk Township	1,696	1,708	1,708	1,719	1,794	1,885	1,943	1,995	2,057	361	21.3%
4202923440	Elverson Borough	1,308	1,308	1,316	1,381	1,453	1,550	1,668	1,764	1,830	522	39.9%
4202927376	Franklin Township	4,505	4,537	4,539	4,564	4,802	5,069	5,304	5,480	5,604	1,099	24.4%
4202934448	Highland Township	1,276	1,287	1,292	1,296	1,321	1,369	1,412	1,433	1,482	206	16.1%
4202935528	Honey Brook Borough	1,782	1,759	1,762	1,770	1,874	1,942	2,004	2,050	2,083	301	16.9%
4202935536	Honey Brook Township	8,115	8,311	8,310	8,722	9,240	9,734	10,242	10,632	11,028	2,913	35.9%
4202939344	Kennett Township	8,150	8,305	8,545	9,384	9,843	10,244	10,593	10,846	11,095	2,945	36.1%
4202939352	Kennett Square Borough	6,162	6,202	6,201	7,352	8,277	8,282	8,283	8,288	8,288	2,126	34.5%
4202944440	London Britain Township	3,227	3,240	3,241	3,246	3,278	3,341	3,379	3,409	3,442	215	6.7%
4202944456	Londonderry Township	2,401	2,552	2,555	2,571	2,666	2,774	2,889	2,989	3,066	665	27.7%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202944480	London Grove Township	8,595	8,829	8,849	9,068	9,628	10,215	10,818	11,348	11,783	3,188	37.1%
4202945040	Lower Oxford Township	5,026	5,079	5,094	5,121	5,435	5,798	6,080	6,316	6,525	1,499	29.8%
4202946792	Malvern Borough	3,417	3,455	3,457	3,466	3,607	3,791	3,951	4,053	4,165	748	21.9%
4202950232	Modena Borough	535	530	534	536	580	622	665	695	718	183	34.2%
4202953608	New Garden Township	12,131	12,206	12,218	12,447	12,832	13,276	13,779	14,146	14,534	2,403	19.8%
4202953784	Newlin Township	1,352	1,347	1,347	1,351	1,381	1,432	1,473	1,542	1,568	216	16.0%
4202953816	New London Township	5,921	5,986	5,998	6,107	6,543	6,936	7,381	7,841	8,166	2,245	37.9%
4202954936	North Coventry Township	8,010	7,959	8,011	8,098	8,660	9,171	9,601	9,952	10,277	2,267	28.3%
4202957480	Oxford Borough	5,405	5,581	5,582	5,772	5,907	6,020	6,103	6,179	6,280	875	16.2%
4202958032	Parkesburg Borough	3,695	3,993	3,995	4,276	4,584	4,647	4,705	4,750	4,807	1,112	30.1%
4202958808	Penn Township	5,511	5,515	5,547	5,680	6,349	6,931	7,466	7,974	8,339	2,828	51.3%
4202959136	Pennsbury Township	3,633	3,650	3,657	3,683	3,806	3,923	3,982	4,031	4,070	437	12.0%
4202960120	Phoenixville Borough	16,692	16,968	17,010	20,397	21,475	22,184	22,815	23,269	23,603	6,911	41.4%
4202961800	Pocopson Township	4,839	4,829	4,796	4,838	4,932	5,009	5,063	5,150	5,212	373	7.7%
4202967080	Sadsbury Township	3,878	4,110	4,128	4,520	4,910	5,373	5,826	6,159	6,386	2,508	64.7%
4202968288	Schuylkill Township	8,587	8,616	8,620	8,714	8,886	9,066	9,234	9,373	9,516	929	10.8%
4202972072	South Coatesville Borough	1,441	1,456	1,461	1,467	1,578	1,695	1,760	1,848	1,927	486	33.7%
4202972088	South Coventry Township	2,629	2,641	2,643	2,663	2,792	2,945	3,060	3,155	3,235	606	23.1%
4202972920	Spring City Borough	3,316	3,303	3,306	3,748	3,785	3,841	3,889	3,927	3,979	663	20.0%
4202976568	Thornbury Township	3,148	3,136	3,137	3,363	3,635	3,672	3,713	3,727	3,758	610	19.4%
4202977344	Tredyffrin Township	29,494	29,396	29,616	30,789	31,009	31,291	31,570	31,796	31,949	2,455	8.3%
4202979208	Upper Oxford Township	2,518	2,538	2,538	2,541	2,560	2,589	2,630	2,640	2,649	131	5.2%
4202979352	Upper Uwchlan Township	11,493	11,823	11,866	13,463	13,697	13,968	14,223	14,441	14,553	3,060	26.6%
4202979480	Uwchlan Township	18,972	18,840	18,863	19,275	20,166	20,823	21,337	21,848	22,260	3,288	17.3%
4202979544	Valley Township	7,631	7,772	7,781	8,502	8,846	9,105	9,417	9,624	9,838	2,207	28.9%
4202980616	Wallace Township	3,682	3,675	3,675	4,177	4,306	4,341	4,410	4,449	4,462	780	21.2%
4202981160	Warwick Township	2,553	2,546	2,546	2,895	2,899	2,924	2,939	2,964	2,975	422	16.5%
4202982544	West Bradford Township	12,753	13,403	13,427	13,557	13,887	14,296	14,774	15,116	15,459	2,706	21.2%
4202982576	West Brandywine Township	7,471	7,467	7,496	8,199	8,891	9,415	9,864	10,226	10,588	3,117	41.7%
4202982664	West Caln Township	9,075	9,110	9,115	9,165	9,469	9,846	10,178	10,476	10,773	1,698	18.7%

(Continued)

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202982704	West Chester Borough	19,929	20,029	20,131	20,833	20,970	21,151	21,291	21,402	21,557	1,628	8.2%
4202982936	West Fallowfield Township	2,600	2,590	2,592	2,596	2,636	2,691	2,739	2,777	2,794	194	7.5%
4202983080	West Goshen Township	23,059	22,973	22,993	25,055	25,487	25,854	26,139	26,386	26,592	3,533	15.3%
4202983104	West Grove Borough	2,884	2,839	2,844	2,859	2,951	3,043	3,129	3,239	3,309	425	14.7%
4202983464	West Marlborough Township	820	815	815	815	815	820	827	827	827	7	0.9%
4202983664	West Nantmeal Township	2,194	2,214	2,218	2,225	2,269	2,326	2,373	2,424	2,458	264	12.0%
4202983712	West Nottingham Township	2,716	2,709	2,710	2,721	2,777	2,854	2,895	2,939	2,991	275	10.1%
4202983832	West Pikeland Township	4,069	4,066	4,073	4,108	4,406	4,573	4,765	4,966	5,101	1,032	25.4%
4202983968	West Sadsbury Township	2,461	2,499	2,503	2,544	2,770	3,017	3,284	3,493	3,685	1,224	49.7%
4202984104	Westtown Township	10,914	11,013	11,023	11,523	12,231	12,489	12,692	12,869	13,007	2,093	19.2%
4202984160	West Vincent Township	5,029	5,911	6,514	7,170	7,511	7,888	8,170	8,346	8,507	3,478	69.2%
4202984192	West Whiteland Township	18,432	19,752	20,652	24,418	26,104	26,491	26,854	27,199	27,477	9,045	49.1%
4202985352	Willistown Township	10,880	11,014	11,009	11,254	11,336	11,454	11,526	11,615	11,684	804	7.4%

Source: DVRPC, 2021

Table A-7: Delaware County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4204500676	Aldan Borough	4,180	4,160	4,160	4,160	4,182	4,198	4,205	4,209	4,219	39	0.9%
4204503336	Aston Township	16,714	16,745	16,741	16,754	16,798	16,868	16,917	16,948	16,970	256	1.5%
4204506024	Bethel Township	9,123	9,242	9,283	9,394	9,533	9,593	9,650	9,691	9,750	627	6.9%
4204509080	Brookhaven Borough	8,058	8,049	8,049	8,054	8,092	8,149	8,222	8,259	8,285	227	2.8%
4204512442	Chadds Ford Township	3,719	3,725	3,727	3,735	3,770	3,806	3,850	3,887	3,910	191	5.1%
4204513208	Chester City	33,992	34,000	33,965	34,027	34,128	34,317	34,481	34,616	34,705	713	2.1%
4204513212	Chester Township	4,070	4,073	4,073	4,075	4,093	4,115	4,152	4,169	4,207	137	3.4%
4204513232	Chester Heights Borough	2,604	2,742	2,747	2,747	2,768	2,783	2,792	2,799	2,819	215	8.3%
4204514264	Clifton Heights Borough	6,673	6,697	6,708	6,725	6,732	6,742	6,750	6,758	6,775	102	1.5%
4204515232	Collingdale Borough	8,805	8,794	8,794	8,800	8,838	8,880	8,919	8,960	8,976	171	1.9%
4204515432	Colwyn Borough	2,556	2,551	2,555	2,557	2,560	2,568	2,575	2,583	2,590	34	1.3%
4204515488	Concord Township	17,555	17,933	17,910	18,328	19,154	19,474	19,639	19,801	19,922	2,367	13.5%
4204518152	Darby Borough	10,694	10,702	10,660	10,702	10,725	10,753	10,777	10,814	10,835	141	1.3%
4204518160	Darby Township	9,291	9,279	9,282	9,282	9,311	9,321	9,340	9,354	9,366	75	0.8%
4204521384	East Lansdowne Borough	2,663	2,671	2,671	2,671	2,682	2,695	2,704	2,717	2,724	61	2.3%
4204522296	Eddystone Borough	2,427	2,412	2,412	2,412	2,415	2,416	2,420	2,425	2,437	10	0.4%
4204522584	Edgmont Township	4,025	4,131	4,128	4,137	4,189	4,255	4,328	4,379	4,418	393	9.8%
4204526408	Folcroft Borough	6,646	6,632	6,638	6,638	6,664	6,686	6,706	6,734	6,748	102	1.5%
4204529720	Glenolden Borough	7,126	7,164	7,164	7,164	7,180	7,204	7,221	7,237	7,255	129	1.8%
4204533144	Haverford Township	49,124	49,526	49,478	49,531	49,581	49,642	49,706	49,777	49,811	687	1.4%
4204541440	Lansdowne Borough	10,662	10,647	10,647	10,651	10,682	10,702	10,717	10,758	10,787	125	1.2%
4204544888	Lower Chichester Township	3,477	3,473	3,473	3,478	3,481	3,486	3,492	3,497	3,499	22	0.6%
4204547344	Marcus Hook Borough	2,401	2,402	2,402	2,402	2,411	2,411	2,416	2,426	2,426	25	1.0%
4204547616	Marple Township	23,639	23,955	23,888	23,955	23,979	24,003	24,025	24,034	24,051	412	1.7%
4204548480	Media Borough	5,364	5,682	5,670	5,690	5,732	5,775	5,827	5,845	5,873	509	9.5%
4204549136	Middletown Township	15,948	16,073	16,036	18,001	18,065	18,112	18,149	18,171	18,178	2,230	14.0%
4204549504	Millbourne Borough	1,146	1,160	1,160	1,160	1,160	1,175	1,177	1,183	1,194	48	4.2%
4204551176	Morton Borough	2,665	2,670	2,670	2,675	2,698	2,724	2,732	2,740	2,742	77	2.9%
4204553104	Nether Providence Township	13,771	13,780	13,762	13,783	13,824	13,863	13,924	13,943	13,958	187	1.4%
4204554224	Newtown Township	12,707	13,943	14,049	14,526	14,679	14,867	15,040	15,127	15,213	2,506	19.7%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4204555664	Norwood Borough	5,899	5,897	5,897	5,902	5,910	5,938	5,957	5,973	5,995	96	1.6%
4204558176	Parkside Borough	2,314	2,330	2,330	2,330	2,335	2,339	2,347	2,352	2,354	40	1.7%
4204562792	Prospect Park Borough	6,509	6,492	6,477	6,494	6,501	6,516	6,542	6,564	6,567	58	0.9%
4204563264	Radnor Township	31,826	31,875	31,868	31,904	32,094	32,274	32,475	32,584	32,709	883	2.8%
4204564800	Ridley Township	31,072	31,204	31,205	31,222	31,378	31,518	31,634	31,740	31,820	748	2.4%
4204564832	Ridley Park Borough	7,046	7,065	7,060	7,074	7,090	7,122	7,142	7,156	7,164	118	1.7%
4204566192	Rose Valley Borough	949	948	948	948	957	963	985	989	991	42	4.4%
4204566928	Rutledge Borough	802	799	799	799	799	799	799	799	801	-1	-0.1%
4204569752	Sharon Hill Borough	5,728	5,689	5,692	5,695	5,709	5,731	5,746	5,777	5,782	54	0.9%
4204573032	Springfield Township	24,276	24,261	24,247	24,269	24,359	24,454	24,510	24,551	24,597	321	1.3%
4204575648	Swarthmore Borough	6,266	6,346	6,346	6,353	6,364	6,382	6,397	6,413	6,416	150	2.4%
4204576576	Thornbury Township	7,652	7,726	7,730	7,730	7,760	7,798	7,823	7,844	7,854	202	2.6%
4204576792	Tinicum Township	4,088	4,111	4,111	4,111	4,123	4,135	4,141	4,153	4,166	78	1.9%
4204577288	Trainer Borough	1,818	1,836	1,836	1,836	1,836	1,839	1,841	1,841	1,841	23	1.3%
4204578712	Upland Borough	3,332	3,326	3,325	3,333	3,339	3,359	3,364	3,365	3,369	37	1.1%
4204578776	Upper Chichester Township	16,887	16,959	16,963	16,967	17,034	17,132	17,233	17,263	17,312	425	2.5%
4204579000	Upper Darby Township	82,968	82,930	82,966	83,075	83,961	84,946	85,778	86,359	86,756	3,788	4.6%
4204579248	Upper Providence Township	10,383	10,444	10,444	10,450	10,492	10,537	10,579	10,626	10,660	277	2.7%
4204586968	Yeadon Borough	11,502	11,496	11,464	11,501	11,520	11,538	11,560	11,573	11,579	77	0.7%

Source: DVRPC, 2021

Table A-8: Montgomery County Forecasted Population by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209100156	Abington Township	55,551	55,319	55,390	56,266	56,656	57,106	57,445	57,800	58,122	2,571	4.6%
4209102264	Ambler Borough	6,493	6,491	6,482	6,508	6,667	6,765	6,870	6,948	7,021	528	8.1%
4209108568	Bridgeport Borough	4,550	4,570	4,570	4,571	6,097	6,160	6,182	6,206	6,239	1,689	37.1%
4209109696	Bryn Athyn Borough	1,396	1,404	1,403	1,407	1,417	1,437	1,451	1,456	1,463	67	4.8%
4209112968	Cheltenham Township	37,108	37,121	37,106	37,148	37,407	37,727	38,055	38,316	38,508	1,400	3.8%
4209115192	Collegeville Borough	5,257	5,174	5,193	5,204	5,288	5,359	5,414	5,485	5,529	272	5.2%
4209115848	Conshohocken Borough	7,981	8,047	8,053	10,353	10,472	10,594	10,682	10,751	10,823	2,842	35.6%
4209119672	Douglass Township	10,404	10,549	10,554	10,579	10,893	11,290	11,696	12,055	12,309	1,905	18.3%
4209121200	East Greenville Borough	2,953	2,940	2,940	2,946	2,961	2,975	3,012	3,022	3,051	98	3.3%
4209121600	East Norriton Township	14,032	13,974	14,264	14,953	15,136	15,269	15,461	15,555	15,591	1,559	11.1%
4209127280	Franconia Township	13,194	13,369	13,397	13,566	14,437	15,045	15,751	16,340	16,857	3,663	27.8%
4209131088	Green Lane Borough	511	506	506	506	508	513	513	514	517	6	1.2%
4209133088	Hatboro Borough	7,376	7,501	7,501	7,505	7,593	7,701	7,776	7,874	7,938	562	7.6%
4209133112	Hatfield Borough	3,308	3,327	3,327	3,329	3,376	3,398	3,434	3,451	3,467	159	4.8%
4209133120	Hatfield Township	17,539	17,850	17,868	17,924	18,311	18,779	19,204	19,563	19,840	2,301	13.1%
4209135808	Horsham Township	26,453	26,485	26,466	27,171	27,321	27,589	27,856	29,667	31,279	4,826	18.2%
4209138000	Jenkintown Borough	4,411	4,420	4,420	4,678	4,718	4,747	4,781	4,821	4,868	457	10.4%
4209141432	Lansdale Borough	16,523	17,083	17,070	17,662	17,755	17,905	18,062	18,149	18,235	1,712	10.4%
4209143312	Limerick Township	18,714	19,303	19,355	19,524	20,514	21,410	22,296	23,033	23,777	5,063	27.1%
4209144912	Lower Frederick Township	4,877	4,928	4,928	4,951	5,034	5,148	5,211	5,264	5,313	436	8.9%
4209144920	Lower Gwynedd Township	11,500	11,497	11,485	11,530	11,656	11,832	11,969	12,082	12,199	699	6.1%
4209144976	Lower Merion Township	58,305	60,099	60,400	63,365	63,576	64,499	64,982	65,205	65,329	7,024	12.0%
4209145008	Lower Moreland Township	13,192	13,114	13,110	13,208	13,283	13,377	13,488	13,527	13,571	379	2.9%
4209145072	Lower Pottsgrove Township	12,181	12,150	12,143	12,199	12,398	12,657	12,840	13,042	13,164	983	8.1%
4209145080	Lower Providence Township	26,141	26,873	26,880	26,980	27,422	27,742	27,942	28,110	28,267	2,126	8.1%
4209145096	Lower Salford Township	15,230	15,529	15,534	15,595	16,018	16,533	16,981	17,264	17,523	2,293	15.1%
4209147592	Marlborough Township	3,327	3,385	3,388	3,397	3,438	3,465	3,499	3,520	3,545	218	6.6%
4209150640	Montgomery Township	25,941	26,164	26,167	26,228	26,589	26,870	27,253	27,483	27,814	1,873	7.2%
4209152664	Narberth Borough	4,326	4,336	4,336	4,417	4,445	4,488	4,517	4,560	4,605	279	6.4%
4209153664	New Hanover Township	12,447	13,212	13,225	13,389	14,378	15,585	16,764	17,677	18,426	5,979	48.0%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209154656	Norristown Borough	34,539	34,341	34,334	34,403	35,020	35,653	36,227	36,726	37,128	2,589	7.5%
4209155512	North Wales Borough	3,269	3,265	3,265	3,265	3,286	3,321	3,326	3,340	3,353	84	2.6%
4209159120	Pennsburg Borough	3,860	3,855	3,848	3,859	3,893	3,920	3,950	3,979	3,997	137	3.5%
4209159392	Perkiomen Township	9,186	9,140	9,135	9,169	9,304	9,460	9,574	9,656	9,722	536	5.8%
4209161664	Plymouth Township	17,611	17,531	17,637	18,798	18,819	19,901	19,932	19,959	19,973	2,362	13.4%
4209162416	Pottstown Borough	22,620	22,600	22,604	22,649	22,961	23,254	23,548	23,785	23,961	1,341	5.9%
4209163808	Red Hill Borough	2,387	2,361	2,361	2,365	2,392	2,426	2,440	2,482	2,517	130	5.4%
4209165568	Rockledge Borough	2,556	2,530	2,530	2,534	2,540	2,545	2,572	2,575	2,586	30	1.2%
4209166576	Royersford Borough	4,785	4,755	4,755	4,759	4,850	4,952	5,069	5,179	5,251	466	9.7%
4209167528	Salford Township	2,918	2,949	2,949	2,950	3,010	3,072	3,133	3,170	3,237	319	10.9%
4209168328	Schwenksville Borough	1,389	1,379	1,382	1,387	1,404	1,435	1,465	1,475	1,505	116	8.4%
4209171016	Skippack Township	14,563	14,203	14,204	14,413	14,932	15,365	15,836	16,261	16,651	2,088	14.3%
4209171856	Souderton Borough	6,733	7,082	7,082	7,083	7,137	7,174	7,247	7,281	7,308	575	8.5%
4209173088	Springfield Township	19,502	19,848	19,803	19,868	19,954	20,064	20,157	20,224	20,288	786	4.0%
4209176304	Telford Borough	2,651	2,689	2,689	2,689	2,713	2,734	2,765	2,783	2,796	145	5.5%
4209177152	Towamencin Township	18,171	18,441	18,446	18,473	18,726	19,079	19,362	19,554	19,772	1,601	8.8%
4209177304	Trappe Borough	3,519	3,725	3,777	3,819	3,852	3,891	3,928	3,941	3,959	440	12.5%
4209179008	Upper Dublin Township	26,133	26,553	26,545	29,258	29,704	29,717	29,747	29,766	29,785	3,652	14.0%
4209179040	Upper Frederick Township	3,552	3,663	3,660	3,672	3,705	3,748	3,788	3,831	3,854	302	8.5%
4209179056	Upper Gwynedd Township	15,800	15,817	15,802	15,845	15,979	16,161	16,271	16,351	16,439	639	4.0%
4209179064	Upper Hanover Township	7,297	8,038	8,038	8,061	8,303	8,605	8,870	9,053	9,265	1,968	27.0%
4209179136	Upper Merion Township	28,522	33,027	34,161	36,359	36,801	37,258	37,565	37,803	38,017	9,495	33.3%
4209179176	Upper Moreland Township	24,188	24,031	24,715	25,404	25,628	25,858	26,119	26,293	26,448	2,260	9.3%
4209179240	Upper Pottsgrove Township	5,487	5,756	5,756	5,802	6,039	6,283	6,447	6,584	6,695	1,208	22.0%
4209179256	Upper Providence Township	23,355	24,355	24,376	24,497	26,876	27,702	28,454	28,993	29,327	5,972	25.6%
4209179280	Upper Salford Township	3,356	3,364	3,364	3,369	3,427	3,487	3,547	3,594	3,657	301	9.0%
4209182736	West Conshohocken Borough	1,383	1,432	1,432	1,432	1,454	1,467	1,494	1,498	1,512	129	9.3%
4209183696	West Norriton Township	15,698	15,613	15,629	15,680	16,099	16,565	17,020	17,305	17,576	1,878	12.0%
4209183912	West Pottsgrove Township	3,867	3,838	3,838	3,846	3,867	3,881	3,903	3,915	3,939	72	1.9%
4209184624	Whitemarsh Township	17,634	18,344	18,332	19,249	19,364	19,554	19,731	19,846	19,944	2,310	13.1%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209184888	Whitpain Township	19,079	19,240	19,568	19,929	20,126	20,341	20,531	20,653	20,770	1,691	8.9%
4209186496	Worcester Township	10,368	10,430	10,436	10,470	10,733	10,962	11,171	11,347	11,502	1,134	10.9%

Source: DVRPC, 2021

Table A-9: Philadelphia County Forecasted Population by Planning District, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4210160101	North	136,426	137,290	137,487	138,303	139,100	139,281	140,359	140,473	140,671	4,245	3.1%
4210160102	Lower Southwest	42,222	42,699	42,693	42,725	42,741	42,837	42,941	42,985	43,118	896	2.1%
4210160103	Central	125,180	134,000	138,192	154,292	166,966	170,165	170,845	171,116	172,937	47,757	38.2%
4210160104	North Delaware	95,518	98,675	98,610	98,830	98,860	99,002	99,220	99,307	99,494	3,976	4.2%
4210160105	Lower South	5,577	5,528	6,158	7,691	7,696	7,739	7,777	7,791	7,811	2,234	40.1%
4210160106	West Park	46,590	45,000	44,937	45,343	45,358	45,466	45,593	45,651	45,810	-780	-1.7%
4210160107	Lower North	90,331	94,178	95,194	100,862	103,793	104,460	104,775	104,922	105,251	14,920	16.5%
4210160108	Lower Northwest	53,325	53,629	53,721	54,101	54,265	54,377	54,559	54,605	54,786	1,461	2.7%
4210160109	River Wards	69,326	70,906	71,431	74,896	77,424	77,593	77,815	77,896	78,092	8,766	12.6%
4210160110	University - Southwest	81,183	82,986	82,994	88,761	91,707	93,568	94,021	97,023	102,295	21,112	26.0%
4210160111	West	118,116	114,347	114,249	114,687	114,824	114,965	115,209	115,302	115,567	-2,549	-2.2%
4210160112	South	137,583	135,498	135,582	136,952	137,696	137,984	138,746	138,902	139,267	1,684	1.2%
4210160113	Upper Far Northeast	68,232	68,573	68,462	68,582	68,594	68,725	68,987	69,081	69,224	992	1.5%
4210160114	Lower Northeast	107,096	107,776	107,763	107,777	107,782	107,808	107,838	107,860	107,906	810	0.8%
4210160115	Upper North	152,693	148,146	148,120	148,349	148,494	149,451	150,652	151,110	151,974	-719	-0.5%
4210160116	Lower Far Northeast	70,602	72,859	72,861	72,875	72,878	72,922	73,001	73,042	73,112	2,510	3.6%
4210160117	Upper Northwest	85,177	86,714	86,623	87,006	87,164	87,305	87,652	87,744	87,964	2,787	3.3%
4210160118	Central Northeast	86,263	85,200	85,084	85,212	85,217	85,329	85,408	85,451	85,519	-744	-0.9%

Source: DVRPC, 2021

Appendix B

Forecasted Employment by Municipality and District, 2015–2050

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Appendix B: Forecasted Employment by County and Municipality, 2015–2050

Table B-1: Burlington County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400503370	Bass River Township	1,458	1,461	1,435	1,491	1,495	1,498	1,506	1,512	1,512	54	3.7%
3400505740	Beverly City	415	396	366	409	422	433	434	435	435	20	4.8%
3400506670	Bordentown City	1,457	1,505	1,387	1,487	1,526	1,550	1,583	1,608	1,627	170	11.7%
3400506700	Bordentown Township	5,153	6,576	6,174	6,368	6,379	6,381	6,402	6,422	6,471	1,318	25.6%
3400508920	Burlington City	4,493	5,009	4,612	4,693	4,712	4,738	4,784	4,860	4,927	434	9.7%
3400508950	Burlington Township	16,216	18,544	17,681	19,074	18,992	18,986	19,034	19,104	19,161	2,945	18.2%
3400512670	Chesterfield Township	1,470	1,464	1,358	1,640	1,678	1,695	1,714	1,733	1,747	277	18.8%
3400512940	Cinnaminson Township	10,061	10,954	10,103	10,373	11,081	11,038	11,004	10,960	10,911	850	8.4%
3400517080	Delanco Township	1,133	1,369	1,276	1,444	1,447	1,459	1,473	1,477	1,483	350	30.9%
3400517440	Delran Township	6,494	7,034	6,473	6,700	6,701	6,710	6,761	6,800	6,812	318	4.9%
3400518790	Eastampton Township	976	1,007	907	1,053	1,092	1,112	1,133	1,146	1,168	192	19.7%
3400520050	Edgewater Park Township	2,704	2,722	2,474	2,961	2,990	3,020	3,075	3,123	3,164	460	17.0%
3400522110	Evesham Township	24,677	25,188	23,300	24,419	24,555	24,682	24,868	25,129	25,376	699	2.8%
3400523250	Fieldsboro Borough	79	121	117	117	116	116	114	114	114	35	44.3%
3400523850	Florence Township	4,773	8,835	8,240	9,183	9,089	9,237	9,181	9,112	9,074	4,301	90.1%
3400529010	Hainesport Township	3,071	3,408	3,154	3,642	3,669	3,686	3,751	3,827	3,917	846	27.5%
3400542060	Lumberton Township	7,433	7,439	7,018	8,136	8,451	8,579	8,826	9,112	9,354	1,921	25.8%
3400543290	Mansfield Township	3,298	3,783	3,536	5,359	5,353	5,339	5,310	5,310	5,283	1,985	60.2%
3400543740	Maple Shade Township	6,459	6,677	6,046	6,554	6,612	6,668	6,742	6,790	6,837	378	5.9%
3400545120	Medford Township	11,859	11,909	10,959	11,657	11,812	11,928	12,057	12,229	12,382	523	4.4%
3400545210	Medford Lakes Borough	825	811	726	840	856	867	879	886	903	78	9.5%
3400547880	Moorestown Township	25,290	24,961	23,837	26,181	26,706	26,913	27,269	27,654	28,014	2,724	10.8%
3400548900	Mount Holly Township	8,231	8,541	8,028	8,366	8,471	8,547	8,659	8,797	8,900	669	8.1%
3400549020	Mount Laurel Township	38,643	40,718	37,537	38,305	38,458	38,560	38,809	39,174	39,471	828	2.1%
3400551510	New Hanover Township	6,892	6,757	6,644	6,615	6,646	6,697	6,745	6,776	6,792	-100	-1.5%
3400553070	North Hanover Township	1,475	1,590	1,451	1,563	1,581	1,585	1,593	1,602	1,607	132	8.9%
3400555800	Palmyra Borough	2,051	2,072	1,909	2,789	2,776	2,767	2,756	2,749	2,736	685	33.4%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400557480	Pemberton Borough	537	542	468	513	522	530	542	542	542	5	0.9%
3400557510	Pemberton Township	9,195	9,202	8,659	9,569	9,797	9,923	10,048	10,171	10,277	1,082	11.8%
3400563510	Riverside Township	1,442	1,414	1,291	1,468	1,511	1,535	1,576	1,603	1,616	174	12.1%
3400563660	Riverton Borough	868	872	811	866	871	872	871	871	872	4	0.5%
3400566810	Shamong Township	1,690	1,690	1,549	1,682	1,726	1,756	1,783	1,819	1,842	152	9.0%
3400568610	Southampton Township	3,741	4,190	3,888	4,133	4,179	4,210	4,250	4,278	4,303	562	15.0%
3400569990	Springfield Township	1,686	1,643	1,546	1,726	1,733	1,738	1,748	1,755	1,759	73	4.3%
3400572060	Tabernacle Township	2,092	2,079	1,928	2,127	2,157	2,177	2,199	2,216	2,235	143	6.8%
3400577150	Washington Township	436	419	383	404	404	404	409	410	414	-22	-5.0%
3400578200	Westampton Township	7,796	8,140	7,443	8,667	9,941	9,974	10,088	10,181	10,250	2,454	31.5%
3400581440	Willingboro Township	8,144	8,076	7,311	8,258	8,496	8,608	8,699	8,792	8,870	726	8.9%
3400582420	Woodland Township	484	575	533	541	542	544	545	546	546	62	12.8%
3400582960	Wrightstown Borough	8,576	8,544	8,486	8,249	8,239	8,254	8,270	8,286	8,312	-264	-3.1%

Source: DVRPC, 2021

Table B-2: Camden County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400702200	Audubon Borough	2,619	2,732	2,519	2,750	2,778	2,790	2,799	2,805	2,810	191	7.3%
3400702230	Audubon Park Borough	169	166	158	162	165	166	166	166	166	-3	-1.8%
3400703250	Barrington Borough	2,931	3,534	3,128	3,176	3,164	3,142	3,142	3,141	3,158	227	7.7%
3400704750	Bellmawr Borough	4,655	6,160	5,651	5,661	5,635	5,621	5,616	5,611	5,621	966	20.8%
3400705440	Berlin Borough	4,484	4,418	4,105	4,505	4,622	4,696	4,769	4,855	4,941	457	10.2%
3400705470	Berlin Township	6,015	6,271	5,861	6,041	6,090	6,102	6,134	6,185	6,238	223	3.7%
3400708170	Brooklawn Borough	677	739	635	677	674	674	679	678	678	1	0.1%
3400710000	Camden City	39,682	43,168	40,614	46,507	47,464	47,914	48,385	48,781	49,127	9,445	23.8%
3400712280	Cherry Hill Township	52,013	53,861	49,855	52,934	53,451	53,769	54,218	54,754	55,220	3,207	6.2%
3400712550	Chesilhurst Borough	229	225	211	259	274	279	288	288	288	59	25.8%
3400713420	Clementon Borough	1,348	1,327	1,201	1,345	1,369	1,397	1,438	1,465	1,485	137	10.2%
3400714260	Collingswood Borough	4,969	5,752	5,252	5,482	5,564	5,635	5,692	5,743	5,761	792	15.9%
3400726070	Gibbsboro Borough	2,078	2,035	1,915	2,065	2,085	2,103	2,121	2,140	2,154	76	3.7%
3400726760	Gloucester Township	18,405	18,360	16,953	18,412	18,786	18,980	19,257	19,577	19,819	1,414	7.7%
3400726820	Gloucester City	3,824	5,012	4,647	5,755	5,780	5,802	5,826	5,854	5,856	2,032	53.1%
3400728740	Haddon Township	4,089	4,445	4,120	4,509	4,533	4,546	4,566	4,574	4,587	498	12.2%
3400728770	Haddonfield Borough	6,618	8,513	7,935	7,880	7,861	7,866	7,873	7,881	7,886	1,268	19.2%
3400728800	Haddon Heights Borough	3,131	3,281	3,030	3,342	3,419	3,452	3,486	3,509	3,525	394	12.6%
3400732220	Hi-Nella Borough	208	445	415	412	411	410	410	410	410	202	97.1%
3400739210	Laurel Springs Borough	442	437	392	453	472	482	492	501	504	62	14.0%
3400739420	Lawnside Borough	1,734	1,793	1,681	1,807	1,809	1,813	1,818	1,828	1,835	101	5.8%
3400740440	Lindenwold Borough	2,956	3,471	3,223	3,380	3,408	3,439	3,473	3,496	3,510	554	18.7%
3400742630	Magnolia Borough	974	964	868	939	964	972	1,001	1,015	1,034	60	6.2%
3400745510	Merchantville Borough	1,291	1,307	1,217	1,374	1,401	1,410	1,417	1,424	1,433	142	11.0%
3400748750	Mount Ephraim Borough	1,137	1,137	1,028	1,199	1,232	1,233	1,240	1,253	1,267	130	11.4%
3400753880	Oaklyn Borough	935	922	866	984	1,008	1,012	1,027	1,042	1,051	116	12.4%
3400757660	Pennsauken Township	23,557	23,093	21,826	23,910	24,272	24,321	24,495	24,640	24,794	1,237	5.3%
3400758770	Pine Hill Borough	1,789	1,771	1,603	1,817	1,864	1,893	1,929	1,964	1,992	203	11.3%
3400758920	Pine Valley Borough	184	182	98	116	121	123	131	140	149	-35	-19.0%
3400765160	Runnemede Borough	2,970	3,001	2,783	3,010	3,061	3,090	3,124	3,155	3,166	196	6.6%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3400768340	Somerdale Borough	2,041	2,355	2,153	2,270	2,278	2,277	2,287	2,291	2,290	249	12.2%
3400771220	Stratford Borough	3,408	3,636	3,341	3,496	3,543	3,563	3,601	3,652	3,680	272	8.0%
3400772240	Tavistock Borough	50	49	22	42	44	46	50	52	52	2	4.0%
3400776220	Voorhees Township	18,601	18,839	17,507	18,637	18,896	19,055	19,289	19,490	19,662	1,061	5.7%
3400777630	Waterford Township	3,376	3,367	3,069	3,463	3,549	3,613	3,659	3,719	3,776	400	11.8%
3400781740	Winslow Township	11,138	12,140	11,281	12,125	12,333	12,453	12,637	12,835	12,992	1,854	16.6%
3400782450	Woodlynne Borough	328	335	312	340	350	356	358	362	367	39	11.9%

Source: DVRPC, 2021

Table B-3: Gloucester County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3401513360	Clayton Borough	2,180	2,414	2,269	2,621	2,728	2,798	2,892	3,010	3,086	906	41.6%
3401517710	Deptford Township	14,312	15,243	13,939	15,940	16,405	16,686	17,076	17,454	17,860	3,548	24.8%
3401519180	East Greenwich Township	2,622	3,153	2,945	3,518	3,577	3,600	3,640	3,687	3,746	1,124	42.9%
3401521060	Elk Township	1,042	1,333	1,226	1,469	1,556	1,593	1,641	1,700	1,737	695	66.7%
3401524840	Franklin Township	4,341	4,388	4,076	5,002	5,316	5,470	5,745	5,984	6,208	1,867	43.0%
3401526340	Glassboro Borough	7,414	7,355	6,604	7,632	7,987	8,207	8,495	8,823	9,129	1,715	23.1%
3401528185	Greenwich Township	2,735	2,912	2,727	2,914	2,959	2,981	3,011	3,028	3,026	291	10.6%
3401530180	Harrison Township	3,743	5,407	4,983	5,801	6,066	6,192	6,402	6,617	6,799	3,056	81.6%
3401541160	Logan Township	9,752	11,955	11,529	13,944	13,830	13,718	13,627	13,511	13,443	3,691	37.8%
3401543440	Mantua Township	5,470	5,820	5,448	6,778	7,005	7,160	7,370	7,596	7,820	2,350	43.0%
3401547250	Monroe Township	10,099	11,162	10,350	11,502	11,861	12,105	12,459	12,844	13,219	3,120	30.9%
3401549680	National Park Borough	470	463	418	498	516	525	542	563	576	106	22.6%
3401551390	Newfield Borough	467	773	724	728	725	725	725	724	722	255	54.6%
3401557150	Paulsboro Borough	1,798	2,163	2,015	2,435	2,650	2,657	2,683	2,705	2,722	924	51.4%
3401559070	Pitman Borough	2,185	2,228	2,036	2,287	2,373	2,414	2,455	2,515	2,573	388	17.8%
3401569030	South Harrison Township	864	830	780	1,044	1,119	1,149	1,185	1,221	1,255	391	45.3%
3401571850	Swedesboro Borough	1,432	1,409	1,290	1,478	1,510	1,518	1,540	1,556	1,570	138	9.6%
3401577180	Washington Township	18,675	23,343	21,310	21,625	21,663	21,756	21,937	22,118	22,306	3,631	19.4%
3401578110	Wenonah Borough	498	497	471	604	620	630	647	660	670	172	34.5%
3401578800	West Deptford Township	12,266	12,596	12,031	13,743	14,190	14,370	14,608	14,916	15,167	2,901	23.7%
3401580120	Westville Borough	1,800	1,760	1,647	1,887	2,004	2,054	2,103	2,145	2,177	377	20.9%
3401582120	Woodbury City	8,017	8,378	7,923	8,164	8,246	8,317	8,411	8,493	8,570	553	6.9%
3401582180	Woodbury Heights Borough	1,826	2,144	1,922	1,963	1,986	1,990	2,002	2,024	2,028	202	11.1%
3401582840	Woolwich Township	2,898	4,742	4,364	5,401	5,414	5,431	5,456	5,468	5,482	2,584	89.2%

Source: DVRPC, 2021

Table B-4: Mercer County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
3402119780	East Windsor Township	11,250	12,683	11,880	12,973	13,110	13,172	13,293	13,430	13,552	2,302	20.5%
3402122185	Ewing Township	18,306	19,435	18,177	19,425	19,684	19,765	19,912	20,041	20,175	1,869	10.2%
3402129310	Hamilton Township	42,117	44,934	41,780	45,935	46,433	46,720	47,188	47,660	48,136	6,019	14.3%
3402131620	Hightstown Borough	2,511	2,601	2,462	2,620	2,659	2,679	2,718	2,761	2,793	282	11.2%
3402133150	Hopewell Borough	1,011	1,122	1,056	1,071	1,078	1,089	1,106	1,128	1,133	122	12.1%
3402133180	Hopewell Township	12,909	13,442	12,948	13,804	14,042	14,206	14,454	14,718	14,874	1,965	15.2%
3402139510	Lawrence Township	25,140	27,898	25,946	26,991	27,192	27,298	27,475	27,690	27,887	2,747	10.9%
3402157600	Pennington Borough	1,895	1,977	1,866	1,979	2,005	2,024	2,029	2,041	2,046	151	8.0%
3402160900	Princeton	21,268	21,969	20,567	22,315	22,824	23,230	23,770	24,309	24,726	3,458	16.3%
3402163850	Robbinsville Township	6,612	7,860	7,388	8,385	8,448	8,473	8,522	8,605	8,662	2,050	31.0%
3402174000	Trenton City	53,194	56,612	54,082	55,658	55,906	56,178	56,511	56,841	57,097	3,903	7.3%
3402180240	West Windsor Township	33,288	34,103	32,374	35,719	36,253	36,596	37,144	37,749	38,321	5,033	15.1%

Source: DVRPC, 2021

Table B-5: Bucks County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4201704976	Bedminster Township	2,036	2,159	1,976	2,272	2,301	2,332	2,379	2,423	2,466	430	21.1%
4201705616	Bensalem Township	41,286	41,655	37,840	40,022	40,361	40,501	40,649	40,873	41,172	-114	-0.3%
4201708592	Bridgeton Township	423	472	437	465	477	481	485	503	512	89	21.0%
4201708760	Bristol Borough	5,494	5,974	5,469	5,676	5,677	5,668	5,679	5,690	5,699	205	3.7%
4201708768	Bristol Township	21,524	22,155	20,341	21,524	21,681	21,704	21,806	21,925	22,009	485	2.3%
4201709816	Buckingham Township	7,948	8,342	7,682	8,167	8,355	8,446	8,574	8,715	8,816	868	10.9%
4201712504	Chalfont Borough	1,322	1,444	1,354	1,633	1,647	1,652	1,661	1,677	1,683	361	27.3%
4201719784	Doylestown Borough	10,402	10,502	9,728	10,004	10,140	10,224	10,370	10,550	10,666	264	2.5%
4201719792	Doylestown Township	12,043	12,594	11,892	12,407	12,601	12,693	12,830	12,967	13,087	1,044	8.7%
4201720104	Dublin Borough	735	719	659	1,032	1,058	1,076	1,104	1,131	1,161	426	58.0%
4201720480	Durham Township	270	297	261	273	279	284	291	289	291	21	7.8%
4201721760	East Rockhill Township	2,062	2,680	2,469	2,599	2,623	2,630	2,649	2,666	2,681	619	30.0%
4201725112	Falls Township	15,021	16,325	14,937	16,258	18,995	19,857	19,875	19,836	19,782	4,761	31.7%
4201733224	Haycock Township	547	579	539	621	641	646	650	650	650	103	18.8%
4201734952	Hilltown Township	6,062	6,556	5,953	6,537	6,641	6,695	6,791	6,931	7,038	976	16.1%
4201736192	Hulmeville Borough	229	248	231	256	261	261	261	263	266	37	16.2%
4201737304	Ivyland Borough	1,129	1,104	1,047	1,092	1,092	1,094	1,091	1,100	1,109	-20	-1.8%
4201741392	Langhorne Borough	1,072	1,572	1,398	1,394	1,388	1,391	1,393	1,390	1,389	317	29.6%
4201741416	Langhorne Manor Borough	504	504	479	578	604	608	615	625	633	129	25.6%
4201744968	Lower Makefield Township	11,892	13,772	12,959	13,158	13,156	13,164	13,182	13,193	13,224	1,332	11.2%
4201745112	Lower Southampton Township	13,033	16,053	14,738	14,511	14,397	14,338	14,284	14,246	14,199	1,166	8.9%
4201749120	Middletown Township	23,802	24,229	22,361	23,770	23,921	24,047	24,187	24,352	24,487	685	2.9%
4201749384	Milford Township	3,632	3,745	3,454	4,114	4,250	4,331	4,428	4,495	4,556	924	25.4%
4201751144	Morrisville Borough	3,085	3,031	2,788	3,072	3,165	3,220	3,268	3,312	3,369	284	9.2%
4201753296	New Britain Borough	2,606	2,638	2,523	2,639	2,697	2,716	2,731	2,765	2,780	174	6.7%
4201753304	New Britain Township	5,729	5,723	5,302	6,102	6,151	6,208	6,264	6,309	6,335	606	10.6%
4201753712	New Hope Borough	2,888	3,444	3,076	3,078	3,071	3,070	3,091	3,115	3,137	249	8.6%
4201754184	Newtown Borough	2,643	2,998	2,708	2,737	2,747	2,749	2,779	2,807	2,816	173	6.5%
4201754192	Newtown Township	14,332	15,241	14,301	14,690	14,739	14,759	14,826	14,915	14,985	653	4.6%
4201754576	Nockamixon Township	1,543	1,498	1,416	1,571	1,621	1,651	1,703	1,760	1,819	276	17.9%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4201754688	Northampton Township	14,917	15,476	14,357	14,907	15,009	15,027	15,109	15,215	15,290	373	2.5%
4201758936	Penndel Borough	1,144	1,121	1,007	1,184	1,231	1,266	1,310	1,336	1,364	220	19.2%
4201759384	Perkasie Borough	2,424	2,396	2,183	2,472	2,524	2,559	2,617	2,673	2,701	277	11.4%
4201761616	Plumstead Township	6,281	6,695	6,160	6,402	6,470	6,513	6,585	6,714	6,817	536	8.5%
4201763048	Quakertown Borough	5,021	5,038	4,630	4,836	4,867	4,909	4,948	5,002	5,037	16	0.3%
4201764536	Richland Township	6,444	7,402	6,779	7,370	7,508	7,594	7,782	7,964	8,095	1,651	25.6%
4201764584	Richlandtown Borough	275	331	317	340	347	351	357	371	374	99	36.0%
4201764856	Riegelsville Borough	161	229	214	219	221	220	222	222	221	60	37.3%
4201769248	Sellersville Borough	1,155	1,354	1,218	1,306	1,347	1,373	1,407	1,433	1,467	312	27.0%
4201770744	Silverdale Borough	277	334	305	309	314	317	319	320	320	43	15.5%
4201771752	Solebury Township	3,714	3,719	3,440	3,779	3,875	3,974	4,041	4,100	4,149	435	11.7%
4201773016	Springfield Township	1,238	1,406	1,272	1,365	1,370	1,381	1,396	1,408	1,408	170	13.7%
4201776304	Telford Borough	1,024	1,088	998	1,128	1,159	1,168	1,177	1,190	1,182	158	15.4%
4201776784	Tinicum Township	1,491	1,531	1,417	1,633	1,702	1,743	1,772	1,809	1,819	328	22.0%
4201777704	Trumbauersville Borough	357	376	323	358	363	375	388	404	413	56	15.7%
4201777744	Tullytown Borough	2,268	2,221	2,060	2,163	2,206	2,237	2,298	2,358	2,400	132	5.8%
4201779128	Upper Makefield Township	2,785	2,941	2,735	2,915	2,965	2,999	3,040	3,077	3,104	319	11.5%
4201779296	Upper Southampton Township	9,613	9,469	8,773	9,243	9,360	9,450	9,582	9,684	9,769	156	1.6%
4201780952	Warminster Township	15,481	15,928	14,761	15,982	16,143	16,238	16,399	16,564	16,714	1,233	8.0%
4201781048	Warrington Township	10,121	11,771	10,745	11,069	11,182	11,261	11,402	11,561	11,727	1,606	15.9%
4201781144	Warwick Township	6,232	7,394	6,838	7,110	7,165	7,186	7,211	7,252	7,281	1,049	16.8%
4201783960	West Rockhill Township	4,891	4,777	4,526	4,950	5,166	5,261	5,407	5,561	5,687	796	16.3%
4201786624	Wrightstown Township	1,348	1,428	1,337	1,439	1,459	1,479	1,500	1,515	1,532	184	13.6%
4201786920	Yardley Borough	1,709	2,163	2,000	1,969	1,949	1,947	1,943	1,943	1,944	235	13.8%

Source: DVRPC, 2021

Table B-6: Chester County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202903384	Atglen Borough	678	669	569	637	662	672	681	698	710	32	4.7%
4202903656	Avondale Borough	590	645	588	681	697	709	722	738	756	166	28.1%
4202906544	Birmingham Township	1,629	1,962	1,762	1,924	1,974	2,007	2,036	2,061	2,081	452	27.7%
4202910824	Caln Township	8,513	8,889	8,198	9,095	9,414	9,602	9,948	10,280	10,651	2,138	25.1%
4202912744	Charlestown Township	2,970	3,461	3,247	3,500	3,561	3,600	3,640	3,672	3,703	733	24.7%
4202914712	Coatesville City	1,994	2,016	1,820	2,330	2,430	2,487	2,551	2,627	2,683	689	34.6%
4202919752	Downingtown Borough	6,147	6,027	5,578	6,113	6,299	6,408	6,572	6,738	6,896	749	12.2%
4202920824	East Bradford Township	2,341	2,591	2,404	2,720	2,836	2,914	3,031	3,193	3,327	986	42.1%
4202920864	East Brandywine Township	1,693	1,671	1,546	1,967	2,123	2,197	2,291	2,409	2,514	821	48.5%
4202920920	East Caln Township	4,154	4,855	4,303	4,723	4,810	4,883	5,013	5,154	5,274	1,120	27.0%
4202921008	East Coventry Township	1,493	1,718	1,596	1,852	1,903	1,942	2,005	2,048	2,075	582	39.0%
4202921104	East Fallowfield Township	982	1,054	967	1,136	1,198	1,231	1,283	1,342	1,364	382	38.9%
4202921192	East Goshen Township	8,487	8,600	7,837	8,658	8,857	8,984	9,142	9,334	9,520	1,033	12.2%
4202921480	East Marlborough Township	5,254	5,780	5,212	6,026	6,317	6,511	6,732	6,993	7,233	1,979	37.7%
4202921576	East Nantmeal Township	800	837	701	906	936	947	953	953	953	153	19.1%
4202921624	East Nottingham Township	1,679	3,058	2,781	2,799	2,794	2,804	2,811	2,819	2,825	1,146	68.3%
4202921696	East Pikeland Township	3,077	3,240	2,924	3,449	3,629	3,732	3,864	4,012	4,151	1,074	34.9%
4202921928	Easttown Township	5,949	6,278	5,811	6,204	6,347	6,463	6,576	6,713	6,838	889	14.9%
4202922000	East Vincent Township	1,826	2,007	1,840	2,280	2,425	2,504	2,604	2,727	2,797	971	53.2%
4202922056	East Whiteland Township	25,736	27,393	25,254	30,485	31,136	31,444	31,964	32,665	33,256	7,520	29.2%
4202923032	Elk Township	404	737	673	693	703	707	714	723	730	326	80.7%
4202923440	Elverson Borough	576	743	701	764	791	811	812	817	817	241	41.8%
4202927376	Franklin Township	736	839	773	965	1,012	1,037	1,076	1,097	1,113	377	51.2%
4202934448	Highland Township	511	600	575	645	665	671	673	673	673	162	31.7%
4202935528	Honey Brook Borough	414	413	368	451	473	489	505	507	513	99	23.9%
4202935536	Honey Brook Township	3,092	3,365	3,153	3,633	3,764	3,844	3,956	4,124	4,294	1,202	38.9%
4202939344	Kennett Township	6,028	6,824	6,278	6,739	6,905	7,002	7,150	7,306	7,432	1,404	23.3%
4202939352	Kennett Square Borough	3,698	3,632	3,314	3,677	3,828	3,952	4,120	4,272	4,408	710	19.2%
4202944440	London Britain Township	643	702	630	699	730	747	768	787	804	161	25.0%
4202944456	Londonderry Township	437	487	459	542	562	571	589	598	622	185	42.3%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202944480	London Grove Township	2,815	3,167	2,933	3,558	3,663	3,732	3,845	3,949	4,018	1,203	42.7%
4202945040	Lower Oxford Township	1,877	1,845	1,723	2,448	2,653	2,740	2,864	3,000	3,088	1,211	64.5%
4202946792	Malvern Borough	2,430	2,487	2,264	2,647	2,725	2,776	2,845	2,891	2,954	524	21.6%
4202950232	Modena Borough	129	127	117	129	137	141	144	148	151	22	17.1%
4202953608	New Garden Township	6,242	6,434	5,942	6,718	6,974	7,113	7,326	7,498	7,674	1,432	22.9%
4202953784	Newlin Township	283	383	354	392	404	408	426	428	428	145	51.2%
4202953816	New London Township	1,033	1,014	925	1,144	1,214	1,247	1,308	1,368	1,396	363	35.1%
4202954936	North Coventry Township	3,037	3,480	3,102	3,299	3,351	3,407	3,475	3,562	3,644	607	20.0%
4202957480	Oxford Borough	2,183	2,139	1,996	2,378	2,527	2,604	2,728	2,847	2,926	743	34.0%
4202958032	Parkesburg Borough	727	728	667	841	888	907	951	1,007	1,044	317	43.6%
4202958808	Penn Township	2,551	2,766	2,582	2,931	3,035	3,121	3,237	3,372	3,464	913	35.8%
4202959136	Pennsbury Township	1,284	1,347	1,245	1,381	1,452	1,490	1,536	1,570	1,615	331	25.8%
4202960120	Phoenixville Borough	6,581	6,594	5,980	6,802	7,203	7,437	7,703	7,941	8,066	1,485	22.6%
4202961800	Pocopson Township	1,007	1,036	993	1,116	1,162	1,190	1,234	1,286	1,323	316	31.4%
4202967080	Sadsbury Township	1,961	1,917	1,724	2,394	2,491	2,539	2,608	2,680	2,745	784	40.0%
4202968288	Schuylkill Township	4,050	3,993	3,740	4,239	4,372	4,430	4,511	4,608	4,699	649	16.0%
4202972072	South Coatesville Borough	1,348	1,310	1,248	1,321	1,291	1,264	1,251	1,242	1,226	-122	-9.1%
4202972088	South Coventry Township	1,196	1,294	1,189	1,289	1,313	1,331	1,361	1,385	1,405	209	17.5%
4202972920	Spring City Borough	966	1,046	943	1,020	1,035	1,035	1,046	1,059	1,078	112	11.6%
4202976568	Thornbury Township	1,194	1,271	1,154	1,358	1,433	1,471	1,525	1,612	1,663	469	39.3%
4202977344	Tredyffrin Township	51,533	54,442	51,605	54,649	55,341	55,913	56,615	57,306	57,945	6,412	12.4%
4202979208	Upper Oxford Township	488	496	459	573	611	635	642	647	654	166	34.0%
4202979352	Upper Uwchlan Township	4,249	4,690	4,360	5,031	5,226	5,309	5,424	5,595	5,717	1,468	34.5%
4202979480	Uwchlan Township	14,270	15,942	14,575	15,720	16,070	17,328	17,672	18,026	18,367	4,097	28.7%
4202979544	Valley Township	2,173	2,218	2,034	2,751	2,874	2,916	2,982	3,093	3,168	995	45.8%
4202980616	Wallace Township	951	1,113	1,012	1,121	1,157	1,166	1,177	1,183	1,190	239	25.1%
4202981160	Warwick Township	726	789	718	811	838	849	865	881	895	169	23.3%
4202982544	West Bradford Township	2,201	2,648	2,400	2,562	2,638	2,678	2,737	2,795	2,828	627	28.5%
4202982576	West Brandywine Township	2,047	2,092	1,926	2,349	2,499	2,600	2,766	2,911	3,065	1,018	49.7%
4202982664	West Caln Township	1,492	1,705	1,561	1,654	1,678	1,698	1,731	1,764	1,779	287	19.2%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4202982704	West Chester Borough	9,844	10,654	9,837	10,290	10,451	10,576	10,766	10,926	11,111	1,267	12.9%
4202982936	West Fallowfield Township	925	983	927	1,091	1,159	1,190	1,232	1,267	1,275	350	37.8%
4202983080	West Goshen Township	24,970	25,702	23,616	26,505	27,063	27,443	27,962	28,563	29,129	4,159	16.7%
4202983104	West Grove Borough	695	731	668	771	817	845	892	930	954	259	37.3%
4202983464	West Marlborough Township	306	299	275	377	384	386	387	392	397	91	29.7%
4202983664	West Nantmeal Township	666	656	593	754	808	837	862	881	899	233	35.0%
4202983712	West Nottingham Township	1,792	2,055	1,932	2,109	2,176	2,215	2,275	2,320	2,345	553	30.9%
4202983832	West Pikeland Township	949	1,073	994	1,139	1,194	1,223	1,245	1,277	1,294	345	36.4%
4202983968	West Sadsbury Township	1,932	2,360	2,093	2,316	2,408	2,432	2,532	2,635	2,735	803	41.6%
4202984104	Westtown Township	4,170	5,205	4,851	5,003	5,067	5,105	5,163	5,237	5,300	1,130	27.1%
4202984160	West Vincent Township	1,551	1,583	1,444	1,809	1,889	1,941	2,026	2,097	2,156	605	39.0%
4202984192	West Whiteland Township	21,517	22,126	20,359	25,117	25,269	25,382	25,609	25,829	26,143	4,626	21.5%
4202985352	Willistown Township	7,784	7,865	7,383	8,121	8,362	8,481	8,569	8,636	8,698	914	11.7%

Source: DVRPC, 2021

Table B-7: Delaware County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4204500676	Aldan Borough	870	887	863	907	924	939	956	974	986	116	13.3%
4204503336	Aston Township	6,342	7,122	6,728	7,197	7,203	7,204	7,257	7,290	7,317	975	15.4%
4204506024	Bethel Township	2,307	2,688	2,529	2,687	2,690	2,683	2,681	2,679	2,675	368	16.0%
4204509080	Brookhaven Borough	2,386	2,728	2,564	2,586	2,585	2,595	2,618	2,645	2,670	284	11.9%
4204512442	Chadds Ford Township	4,072	4,558	4,312	4,773	4,826	4,877	4,961	5,061	5,153	1,081	26.5%
4204513208	Chester City	12,377	12,346	11,592	13,100	13,474	13,654	13,888	14,068	14,178	1,801	14.6%
4204513212	Chester Township	3,012	3,736	3,613	3,651	3,639	3,627	3,638	3,684	3,692	680	22.6%
4204513232	Chester Heights Borough	885	1,206	1,119	1,111	1,108	1,104	1,102	1,101	1,099	214	24.2%
4204514264	Clifton Heights Borough	2,207	2,547	2,403	2,456	2,468	2,483	2,503	2,533	2,569	362	16.4%
4204515232	Collingdale Borough	2,089	2,572	2,406	2,429	2,446	2,450	2,457	2,473	2,475	386	18.5%
4204515432	Colwyn Borough	414	411	388	429	446	451	454	462	469	55	13.3%
4204515488	Concord Township	11,479	12,982	12,354	13,309	13,385	13,432	13,526	13,640	13,739	2,260	19.7%
4204518152	Darby Borough	4,016	3,983	3,733	3,890	3,955	4,008	4,067	4,131	4,189	173	4.3%
4204518160	Darby Township	2,330	3,074	2,921	2,896	2,882	2,874	2,880	2,897	2,906	576	24.7%
4204521384	East Lansdowne Borough	634	629	602	630	643	657	684	705	717	83	13.1%
4204522296	Eddystone Borough	2,983	2,948	2,862	3,413	3,437	3,445	3,462	3,486	3,504	521	17.5%
4204522584	Edgmont Township	2,120	2,492	2,291	2,479	2,515	2,552	2,587	2,611	2,631	511	24.1%
4204526408	Folcroft Borough	2,921	2,934	2,819	2,906	2,933	2,939	2,969	3,014	3,051	130	4.5%
4204529720	Glenolden Borough	2,362	2,662	2,494	2,569	2,588	2,587	2,608	2,602	2,624	262	11.1%
4204533144	Haverford Township	16,456	17,975	16,641	17,400	17,616	17,719	17,879	18,083	18,227	1,771	10.8%
4204541440	Lansdowne Borough	2,549	2,674	2,536	2,655	2,719	2,753	2,786	2,810	2,836	287	11.3%
4204544888	Lower Chichester Township	1,226	1,301	1,273	1,339	1,355	1,363	1,378	1,397	1,412	186	15.2%
4204547344	Marcus Hook Borough	2,393	2,331	2,300	2,395	2,447	2,460	2,491	2,544	2,607	214	8.9%
4204547616	Marple Township	13,968	14,125	13,308	13,984	14,176	14,310	14,431	14,575	14,709	741	5.3%
4204548480	Media Borough	11,941	12,550	12,165	12,564	12,779	12,923	13,111	13,305	13,452	1,511	12.7%
4204549136	Middletown Township	11,874	12,042	11,445	13,873	13,992	14,076	14,173	14,284	14,358	2,484	20.9%
4204549504	Millbourne Borough	306	310	280	327	329	333	337	340	338	32	10.5%
4204551176	Morton Borough	1,309	1,295	1,251	1,379	1,417	1,432	1,445	1,453	1,458	149	11.4%
4204553104	Nether Providence Township	4,404	4,420	4,171	4,625	4,726	4,794	4,861	4,892	4,902	498	11.3%
4204554224	Newtown Township	12,347	13,848	12,948	13,699	13,734	13,772	13,823	13,893	13,955	1,608	13.0%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4204555664	Norwood Borough	1,103	2,049	1,939	1,908	1,901	1,899	1,897	1,896	1,895	792	71.8%
4204558176	Parkside Borough	266	264	254	290	299	305	307	312	312	46	17.3%
4204562792	Prospect Park Borough	1,838	2,532	2,367	2,366	2,355	2,352	2,357	2,356	2,360	522	28.4%
4204563264	Radnor Township	25,395	25,827	24,561	26,069	26,366	26,586	26,875	27,156	27,382	1,987	7.8%
4204564800	Ridley Township	12,643	12,664	11,908	12,723	12,880	12,963	13,080	13,182	13,285	642	5.1%
4204564832	Ridley Park Borough	2,736	2,766	2,631	2,837	2,884	2,921	2,956	2,990	3,017	281	10.3%
4204566192	Rose Valley Borough	278	514	482	479	477	476	474	473	472	194	69.8%
4204566928	Rutledge Borough	119	154	144	147	150	150	150	150	150	31	26.1%
4204569752	Sharon Hill Borough	2,962	2,931	2,819	2,945	2,967	2,985	3,033	3,100	3,148	186	6.3%
4204573032	Springfield Township	14,184	14,724	13,846	14,337	14,497	14,623	14,777	14,907	15,009	825	5.8%
4204575648	Swarthmore Borough	2,329	2,393	2,274	2,459	2,501	2,527	2,564	2,579	2,592	263	11.3%
4204576576	Thornbury Township	2,235	2,255	2,124	2,479	2,566	2,598	2,654	2,703	2,723	488	21.8%
4204576792	Tinicum Township	10,558	10,824	10,563	10,891	11,407	11,428	11,465	11,493	11,537	979	9.3%
4204577288	Trainer Borough	2,180	2,108	2,074	2,162	2,191	2,208	2,226	2,238	2,247	67	3.1%
4204578712	Upland Borough	905	940	901	937	959	969	984	1,007	1,015	110	12.2%
4204578776	Upper Chichester Township	6,788	7,608	7,243	7,437	7,459	7,459	7,501	7,530	7,568	780	11.5%
4204579000	Upper Darby Township	23,122	24,319	22,942	24,201	24,504	24,758	25,142	25,534	25,925	2,803	12.1%
4204579248	Upper Providence Township	4,580	4,576	4,348	4,806	4,936	5,022	5,127	5,218	5,260	680	14.8%
4204586968	Yeadon Borough	2,617	2,649	2,520	2,641	2,662	2,682	2,698	2,719	2,731	114	4.4%

Source: DVRPC, 2021

Table B-8: Montgomery County Forecasted Employment by Municipality, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209100156	Abington Township	33,618	35,725	32,974	34,416	34,562	34,641	34,812	35,011	35,174	1,556	4.6%
4209102264	Ambler Borough	2,974	3,074	2,781	2,937	3,004	3,044	3,107	3,181	3,241	267	9.0%
4209108568	Bridgeport Borough	2,078	2,184	1,987	2,151	2,180	2,193	2,217	2,247	2,259	181	8.7%
4209109696	Bryn Athyn Borough	1,302	1,414	1,304	1,403	1,428	1,441	1,451	1,465	1,482	180	13.8%
4209112968	Cheltenham Township	17,700	18,727	17,369	18,202	18,365	18,523	18,724	18,886	19,053	1,353	7.6%
4209115192	Collegeville Borough	2,805	2,826	2,524	2,822	2,879	2,920	2,953	2,992	3,022	217	7.7%
4209115848	Conshohocken Borough	7,541	7,878	7,275	10,402	10,695	10,846	11,004	11,157	11,282	3,741	49.6%
4209119672	Douglass Township	3,627	3,993	3,583	4,410	4,492	4,540	4,593	4,665	4,738	1,111	30.6%
4209121200	East Greenville Borough	639	664	599	648	672	699	708	728	727	88	13.8%
4209121600	East Norriton Township	10,589	11,321	10,384	11,207	11,432	11,565	11,762	11,945	12,099	1,510	14.3%
4209127280	Franconia Township	7,120	7,685	7,131	7,405	7,517	7,569	7,704	7,875	8,057	937	13.2%
4209131088	Green Lane Borough	192	197	177	202	211	213	215	214	216	24	12.5%
4209133088	Hatboro Borough	4,853	4,794	4,328	4,623	4,677	4,748	4,826	4,895	4,924	71	1.5%
4209133112	Hatfield Borough	1,388	1,498	1,367	1,432	1,453	1,457	1,483	1,520	1,557	169	12.2%
4209133120	Hatfield Township	17,530	18,540	17,124	18,578	18,820	18,931	19,257	19,730	20,061	2,531	14.4%
4209135808	Horsham Township	31,325	32,346	30,418	31,912	32,371	32,670	33,069	34,393	35,779	4,454	14.2%
4209138000	Jenkintown Borough	4,499	4,800	4,469	4,465	4,477	4,497	4,524	4,576	4,646	147	3.3%
4209141432	Lansdale Borough	8,052	8,075	7,404	8,193	8,420	8,574	8,732	8,896	9,025	973	12.1%
4209143312	Limerick Township	12,339	13,067	11,742	13,169	13,611	13,889	14,331	14,767	15,172	2,833	23.0%
4209144912	Lower Frederick Township	986	1,057	952	1,029	1,047	1,059	1,088	1,127	1,159	173	17.5%
4209144920	Lower Gwynedd Township	6,944	7,343	6,814	7,520	7,789	7,956	8,135	8,339	8,525	1,581	22.8%
4209144976	Lower Merion Township	54,209	58,937	55,080	57,398	57,663	58,446	60,021	60,401	60,625	6,416	11.8%
4209145008	Lower Moreland Township	8,100	8,519	7,861	8,491	8,620	8,711	8,827	8,963	9,072	972	12.0%
4209145072	Lower Pottsgrove Township	4,825	4,922	4,528	5,096	5,282	5,386	5,518	5,686	5,841	1,016	21.1%
4209145080	Lower Providence Township	12,218	13,146	12,029	12,415	12,513	12,553	12,668	12,808	12,902	684	5.6%
4209145096	Lower Salford Township	8,255	8,667	8,087	8,734	8,954	9,090	9,236	9,379	9,488	1,233	14.9%
4209147592	Marlborough Township	1,069	1,161	1,015	1,112	1,142	1,159	1,187	1,214	1,232	163	15.2%
4209150640	Montgomery Township	17,242	19,357	17,452	18,561	18,667	18,748	18,922	19,200	19,413	2,171	12.6%
4209152664	Narberth Borough	2,337	2,507	2,333	2,485	2,545	2,573	2,605	2,640	2,652	315	13.5%
4209153664	New Hanover Township	12,447	13,212	13,225	13,389	14,378	15,585	16,764	17,677	18,426	5,979	48.0%

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ID	Municipality or District	2015 NETS	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209154656	Norristown Borough	13,296	13,391	12,520	13,556	13,919	14,151	14,438	14,718	14,947	1,651	12.4%
4209155512	North Wales Borough	1,425	1,598	1,463	1,548	1,570	1,585	1,607	1,621	1,620	195	13.7%
4209159120	Pennsburg Borough	1,448	1,562	1,409	1,494	1,521	1,538	1,565	1,597	1,637	189	13.1%
4209159392	Perkiomen Township	2,398	2,929	2,704	2,760	2,762	2,758	2,759	2,767	2,784	386	16.1%
4209161664	Plymouth Township	22,655	23,822	21,928	25,011	25,463	25,785	26,272	26,740	27,116	4,461	19.7%
4209162416	Pottstown Borough	10,222	10,525	9,639	10,657	11,054	11,327	11,735	12,137	12,485	2,263	22.1%
4209163808	Red Hill Borough	627	638	575	663	686	707	720	746	772	145	23.1%
4209165568	Rockledge Borough	1,125	1,146	1,063	1,183	1,216	1,237	1,264	1,306	1,332	207	18.4%
4209166576	Royersford Borough	1,519	1,753	1,614	1,708	1,738	1,745	1,768	1,801	1,821	302	19.9%
4209167528	Salford Township	597	725	646	717	727	740	748	753	753	156	26.1%
4209168328	Schwenksville Borough	463	485	436	494	514	521	539	559	568	105	22.7%
4209171016	Skippack Township	4,263	4,467	4,162	4,395	4,453	4,495	4,545	4,618	4,683	420	9.9%
4209171856	Souderton Borough	2,686	2,817	2,584	2,980	3,054	3,103	3,147	3,199	3,223	537	20.0%
4209173088	Springfield Township	8,965	9,547	8,673	9,229	9,366	9,467	9,626	9,731	9,824	859	9.6%
4209176304	Telford Borough	651	644	604	691	714	729	748	774	785	134	20.6%
4209177152	Towamencin Township	7,673	8,275	7,700	8,983	9,142	9,331	9,503	9,706	9,856	2,183	28.5%
4209177304	Trappe Borough	1,990	2,058	1,933	2,032	2,049	2,065	2,094	2,130	2,181	191	9.6%
4209179008	Upper Dublin Township	20,488	22,949	21,414	22,422	22,712	22,893	23,164	23,444	23,700	3,212	15.7%
4209179040	Upper Frederick Township	871	914	845	963	1,007	1,023	1,027	1,032	1,038	167	19.2%
4209179056	Upper Gwynedd Township	19,506	21,663	20,286	20,489	20,444	20,392	20,395	20,440	20,453	947	4.9%
4209179064	Upper Hanover Township	3,211	3,368	3,064	3,481	3,584	3,625	3,698	3,764	3,823	612	19.1%
4209179136	Upper Merion Township	52,328	57,014	52,379	56,230	57,650	58,146	58,915	59,821	60,724	8,396	16.0%
4209179176	Upper Moreland Township	16,625	17,437	15,930	16,628	16,787	16,893	17,050	17,263	17,449	824	5.0%
4209179240	Upper Pottsgrove Township	1,234	1,226	1,107	1,279	1,336	1,347	1,370	1,389	1,410	176	14.3%
4209179256	Upper Providence Township	22,317	23,774	22,128	24,263	24,773	25,032	25,322	25,733	26,114	3,797	17.0%
4209179280	Upper Salford Township	1,141	1,162	1,052	1,161	1,196	1,222	1,262	1,292	1,318	177	15.5%
4209182736	West Conshohocken Borough	5,857	6,666	6,182	6,628	6,633	6,644	6,678	6,741	6,820	963	16.4%
4209183696	West Norriton Township	9,256	9,931	9,044	9,583	9,743	9,836	9,966	10,104	10,198	942	10.2%
4209183912	West Pottsgrove Township	1,602	1,822	1,622	1,759	1,774	1,784	1,805	1,823	1,834	232	14.5%
4209184624	Whitemarsh Township	19,783	20,372	18,834	19,935	20,245	20,418	20,670	20,945	21,099	1,316	6.7%

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ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4209184888	Whitpain Township	18,560	20,122	18,587	19,739	19,790	19,831	19,935	20,028	20,105	1,545	8.3%
4209186496	Worcester Township	4,326	4,515	4,160	4,612	4,757	4,846	4,974	5,123	5,199	873	20.2%

Source: DVRPC, 2021

Table B-9: Philadelphia County Forecasted Employment by Planning District, 2015–2050

ID	Municipality or District	2015 Base	2019 Forecast	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2050 Forecast	2015-2050 Absolute Change	2015-2050 Percentage Change
4210160101	North	38,224	42,804	40,284	40,659	41,146	41,178	41,243	41,276	41,304	3,080	8.1%
4210160102	Lower Southwest	32,834	36,827	34,580	34,930	35,012	35,000	35,069	35,152	35,209	2,375	7.2%
4210160103	Central	262,507	280,742	263,712	274,551	277,818	280,117	281,095	282,048	282,770	20,263	7.7%
4210160104	North Delaware	23,191	27,253	25,781	26,622	26,722	26,784	26,885	26,959	27,010	3,819	16.5%
4210160105	Lower South	19,397	23,703	22,277	27,368	33,940	40,923	44,476	44,945	45,084	25,687	132.4%
4210160106	West Park	16,675	18,159	17,009	17,461	17,557	17,630	17,753	17,844	17,921	1,246	7.5%
4210160107	Lower North	31,758	37,109	34,950	35,492	35,561	35,591	35,648	35,677	35,683	3,925	12.4%
4210160108	Lower Northwest	17,308	18,438	17,143	17,648	17,728	17,807	17,922	17,990	18,023	715	4.1%
4210160109	River Wards	22,627	27,243	25,440	26,675	27,217	27,209	27,244	27,277	27,275	4,648	20.5%
4210160110	University - Southwest	82,039	94,163	91,192	99,118	104,704	108,927	112,425	117,362	129,909	47,870	58.4%
4210160111	West	18,630	20,765	19,586	19,476	19,431	19,413	19,416	19,423	19,437	807	4.3%
4210160112	South	33,564	38,289	35,453	37,265	37,961	38,117	38,298	38,459	38,582	5,018	15.0%
4210160113	Upper Far Northeast	30,496	35,069	33,355	35,042	35,292	35,366	35,503	35,723	35,850	5,354	17.6%
4210160114	Lower Northeast	26,914	28,753	27,376	27,995	28,097	28,303	28,495	28,636	28,721	1,807	6.7%
4210160115	Upper North	30,415	35,415	33,482	34,043	34,175	34,292	34,431	34,536	34,609	4,194	13.8%
4210160116	Lower Far Northeast	29,420	31,444	29,472	30,661	30,949	31,050	31,159	31,291	31,471	2,051	7.0%
4210160117	Upper Northwest	26,952	29,923	28,241	28,894	28,945	29,000	29,082	29,158	29,197	2,245	8.3%
4210160118	Central Northeast	23,212	26,145	25,012	25,580	25,726	25,859	25,991	26,151	26,256	3,044	13.1%

Source: DVRPC, 2021

Geocode	County	Municipality	2010	2020	Change		Munic. Rank
					Numeric	Percent	
029	Chester County	Chester County	498,886	534,413	35,527	7.1%	
02921008	Chester County	East Coventry township	6636	7068	432	6.5%	345

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

WORKING NOTES

	2019	2020	2021	2022	2023	2024	**2025**	**2026**
GROSS Property, plant and equipment	-	-	-		11,798,761	11,798,761	11,963,878	12,131,305
Accumulated Depreciation	-	-	-		3,102,008	3,102,008	3,272,232	3,444,837
NET PPE	-	-	-		8,696,753	8,696,753	8,691,646	8,686,468
ntry Total Debt	-	-	-	-	-	*4,300,000*		
Net Equity	-	-	-	-	-	*4,300,000*		
Investor Provided Capital	-	-	-	-	-	8,600,000	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.68%		

Muni CAPX	**0**	**197,895**	**0**	**0**
IOU savings **0%**			100%	100%
CAPX/Prior Yr. GROSS PPE			1.65%	1.65%
CAPX	**1,833**	**197,895**	**194,255**	**196,973**
Dep rate	0.00%	1.68%	1.68%	1.68%
Half yr. Dep	0.00%	0.84%	0.84%	0.84%
Dep on CAPX	-	1,662	1,632	1,655
Rate of retirement	15.0%	15.0%	15.0%	15.0%
Retired property	275	29,684	29,138	29,546
Dep on Retired property	-	499	490	496
Dep on Prior yr. GROSS	-	-	198,219	200,993
Total Dep	-	-	199,362	202,152

East Coventry

Depreciation Expense - - - - -

part of OCN

NET PPE PURTA 0.001527765

Rev Reg Assessment Fee 0.005652534

	2023	2024	1 2025	2 2026
East Coventry				
FIX CIP **CIP**	$ -	$ -	$ -	$ -
part of OCN	1,833	= to DepX 197,895		

2023	**2024**		
	-	23,750.00	579,500.00

WORKING NOTES

	2019	2020	2021	2022	2023	2024	2025	2026
Sewer Rental Charges	0	756,700	816,362	825,694	828,919	906,500	908,684	543,260
EDUs	0	0	0	0	1,115	1,115	1120	1242
					0	0	5	122
		0	0	0	557.5	1115	1117.5	1181
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	743.4247534			
						$ 460.00	$ 460.00	$ 460.00
		#DIV/0!	#DIV/0!	#DIV/0!	1486.849507	813.0044843		
East Coventry					C	830	8	
					E	1,115	11	
						0.74		
				1742000				
		Customer Growth				**0**	**4**	**91**
		Delivered to Customer	-	72.29	72	72	73	81
East Coventry		Customers	830	830	830	830	834	925
		Total Revenue (Less TAP)	816,362	825,694	828,919	906,500	908,684	958,258
		avg CUST rev	983.57	994.81	998.70	1,092.17	1,089.55	1,035.95
		avg CUST flow	-	0	0	0	0	0
		avg EDU rev	#DIV/0!	#DIV/0!	743.42	813.00	811.33	771.54
		avg EDU flow	#DIV/0!	#DIV/0!	0	0	0	0
		Rev Calculated				828,919	908,684	958,258

			2024	2025	2026
			Change		
		$ 998.70	$ 1,092.17	$ 1,089.55	$ 1,089.55
					$ -
			-	2,184	49,574
			828,919	908,684	958,258
			-	-	-

Prior yr				
NET PURTA	0.1432%		12,454	12,446
REV Reg Assessment	0.5690%		5,472	5,485
			17,926	17,931

WORKING NOTES

2019	2020	2021	2022	2023	2024	**2025**	**2026**

East Coventry Township Wastewater System Assets	
Investor Provided	8,600,000
Gross PP&E	11,798,761
Net PP&E	8,696,753
Revenues	961,710
EBITDA	583,753
EBIT	385,858
Customers	830
Population	2,945

	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
East Coventry							
LESS: EOS - Wages & Benefits	0	-	-	-	-	87,327	-
LESS: EOS - Professional Services	0	0	0	0	-	93,300	-
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-	-
East Coventry							
Wages			0	0	0	87,327	0
Professional Services					0	93,300	0
Eliminated Exp			0	0	0	0	

East Coventry					included in OCN	= to DepX	
Reported CAPX - from the financials	0	7,395	65,000	35,646	1,833	**197,895**	

	2019	**2020**	**2021**	**2022**	**2023**		Assets
GROSS Property, plant and equipment	-	-	-	-	11,798,761		**11,798,761**
Accumulated Depreciation	-	-	-	-	3,102,008		**3,102,008**
NET PPE	-	-	-	-	8,696,753		**8,696,753**
Total Debt	-	-	-	-	4,300,000	*E. Cov had no DEPX*	**197,895**
Net Equity	-	-	-	-	4,300,000	*E. Cov had no DEPX*	
Investor Provided Capital	-	-	-	-	8,600,000		

WORKING NOTES								
	2019	2020	2021	2022	2023	2024	**2025**	**2026**
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.68%			
Depreciation Expense	-	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	197,895.00	OCNLD Study	

	2024	2025	2026	2027	2028		
CAPX	0	0	0	0	0		0

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
GROSS Property, plant and equipment	12,301,075	12,473,221	12,647,776	12,824,774	13,004,249	13,186,236	13,370,769	13,557,885	13,747,619	13,940,009	14,135,091
Accumulated Depreciation	3,619,858	3,797,328	3,977,281	4,159,753	4,344,779	4,532,394	4,722,635	4,915,538	5,111,140	5,309,480	5,510,595
NET PPE	8,681,217	8,675,893	8,670,495	8,665,021	8,659,470	8,653,842	8,648,134	8,642,347	8,636,479	8,630,529	8,624,496
ntry Total Debt											
Net Equity											
Investor Provided Capital											

Depreciation / GROSS PPE

		0	0								
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	199,730	**202,525**	205,359	208,233	211,147	214,102	217,098	220,136	223,217	226,341	229,508
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,678	1,701	1,725	1,749	1,774	1,798	1,824	1,849	1,875	1,901	1,928
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	29,960	30,379	30,804	31,235	31,672	32,115	32,565	33,020	33,483	33,951	34,426
	503	510	518	525	532	540	547	555	563	570	578
	203,806	206,658	209,550	212,483	215,456	218,471	221,529	224,629	227,772	230,960	234,192
	204,981	207,849	210,758	213,707	216,698	219,730	222,806	225,923	229,085	232,291	235,542

East Coventry

Depreciation Expense

	3	4	5	6	7	8	9	10	11	12	13
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	191	71	72	56							
	23,750.00	57,000.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	66,500.00	66,500.00

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Sewer Rental Charges	572,470	576,380									
EDUs	1247	1259	1272	1285	1298	1311	1324	1337	1350	1364	1378
	5	12	13	13	13	13	13	13	13	14	14
	1244.5	1253									
	$ 460.00	$ 460.00									

East Coventry

	4	**9**	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	81	82	83	83	84	85	86	87	88	88	89
East Coventry	929	938	947	957	966	976	986	996	1,006	1,016	1,026
	1,010,012	1,017,094	1,027,107	1,037,378	1,047,752	1,058,229	1,068,812	1,079,500	1,090,295	1,101,198	1,112,210
		99.73%			**100.00%**						
	1,087.20	1,084.32	1,084.16	1,084.16	1,084.16	1,084.15	1,084.16	1,084.16	1,084.16	1,084.16	1,084.16
	0	0	0	0	0	0	0	0	0	0	0
	809.95	807.86	807.47	807.30	807.20	807.19	807.26	807.40	807.63	807.33	807.12
	0	0	0	0	0	0	0	0	0	0	0
	960,330	1,014,904	1,022,179	1,032,243	1,042,565	1,052,991	1,063,520	1,074,156	1,084,898	1,095,746	1,106,704

	2027	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1,010,012	4,892	5,085	5,136	5,187	5,239	5,291	5,344	5,398	5,451	5,506
	1,010,012	1,017,094	1,027,107	1,037,378	1,047,752	1,058,229	1,068,812	1,079,500	1,090,295	1,101,198	1,112,210
	-	-	-	-	-	-	-	-	-	-	-
	12,439	12,432	12,424	12,416	12,408	12,400	12,392	12,384	12,376	12,367	12,359
	5,767	6,061	6,101	6,158	6,217	6,276	6,335	6,396	6,456	6,518	6,580
	18,206	18,493	18,525	18,574	18,625	18,676	18,727	18,780	18,832	18,885	18,939

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

East Coventry

LESS: EOS - Wages & Benefits	0.15	LESS: EOS - Wages Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0.5	LESS: EOS - Profes: Net Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses		LESS: EOS - El: Line Rentals	10% savings	100%	1

East Coventry

Wages

Professional Services

Eliminated Exp

East Coventry

Reported CAPX - from the financials

	Per Books	Difference
GROSS Property, plant and equipment	-	
Accumulated Depreciation	-	
NET PPE	-	8,696,753
Total Debt		
Net Equity		
Investor Provided Capital		

2023	0.0899	28.10%
2024	0.0849	27.71%
2025	0.0799	27.31%
2026	0.0749	26.92%
2027	0.0699	26.52%
2028	0.0649	26.13%
2029	0.0599	25.73%
2030	0.0549	25.34%
2031	0.0499	24.94%

WORKING NOTES	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation Rate											
Depreciation Expense											
CAPX											

	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	14,332,903	14,533,483	14,736,870	14,943,104	15,152,224	15,364,270	15,579,283
Accumulated Depreciation	5,714,525	5,921,309	6,130,986	6,343,598	6,559,186	6,777,791	6,999,454
NET PPE	8,618,378	8,612,174	8,605,884	8,599,506	8,593,038	8,586,479	8,579,829

ntry Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	232,720	235,977	239,279	242,628	246,023	249,466	252,957
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,955	1,982	2,010	2,038	2,067	2,096	2,125
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	34,908	35,397	35,892	36,394	36,903	37,420	37,944
	586	595	603	611	620	629	637
	237,470	240,793	244,163	247,579	251,044	254,557	258,120
	238,838	242,180	245,570	249,006	252,491	256,025	259,607

East Coventry

Depreciation Expense

	14 2038	15 2039	16 2040	17 2041	18 2042	19 2043	20 2044
	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	71,250.00

	2038	2039	2040	2041	2042	2043	2044
Sewer Rental Charges							
EDUs	1392	1406	1420	1434	1448	1462	1477
	14	14	14	14	14	14	15

East Coventry

	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	90	91	92	93	94	95	96
East Coventry	1,036	1,046	1,057	1,068	1,078	1,089	1,100
	1,123,332	1,134,565	1,145,911	1,157,370	1,168,944	1,186,536	1,198,402
	1,084.16	1,084.16	1,084.16	1,084.16	1,084.16	1,089.58	1,089.58
	0	0	0	0	0	0	0
	806.99	806.95	806.98	807.09	807.28	811.58	811.38
	0	0	0	0	0	0	0
	1,117,771	1,128,949	1,140,238	1,151,641	1,163,157	1,174,789	1,192,469

2038	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
				0.5%		0.8%
$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,095.00	$ 1,095.00	$ 1,103.76
$ -	**$ -**	**$ -**	**$ -**	**$ 5.45**	**$ -**	**$ 8.76**
5,561	5,617	5,673	5,730	5,787	5,845	5,933
1,123,332	1,134,565	1,145,911	1,157,370	1,168,944	1,186,536	1,198,402
-	-	-	-	5,845	-	9,587
				1.62%		1.67%
12,350	12,342	12,333	12,324	12,314	12,305	12,296
6,643	6,706	6,770	6,834	6,900	6,999	7,066
18,993	19,048	19,103	19,158	19,214	19,304	19,362

	2038	2039	2040	2041	2042	2043	2044
East Coventry							
LESS: EOS - Wages & Benefits							
LESS: EOS - Professional Services							
LESS: EOS - Eliminated Expenses							
East Coventry							
Wages							
Professional Services							
Eliminated Exp							
East Coventry							
Reported CAPX - from the financials							
GROSS Property, plant and equipment							
Accumulated Depreciation							
NET PPE							
Total Debt							
Net Equity							
Investor Provided Capital							

	2038	2039	2040	2041	2042	2043	2044
Depreciation Rate							
Depreciation Expense							
CAPX							

WORKING NOTES

	2019	2020	2021	2022	2023	2024	**2025**	**2026**
GROSS Property, plant and equipment	-	-	-		11,798,761	11,798,761	11,963,878	12,131,305
Accumulated Depreciation	-	-	-		3,102,008	3,102,008	3,272,232	3,444,837
NET PPE	-	-	-		8,696,753	8,696,753	8,691,646	8,686,468
ntry Total Debt	-	-	-	-	-	*4,300,000*		
Net Equity	-	-	-	-	-	*4,300,000*		
Investor Provided Capital	-	-	-	-	-	8,600,000	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.68%		

Muni CAPX	**0**	**197,895**	**0**	**0**
IOU savings **0%**			100%	100%
CAPX/Prior Yr. GROSS PPE			1.65%	1.65%
CAPX	**1,833**	**197,895**	**194,255**	**196,973**
Dep rate	0.00%	1.68%	1.68%	1.68%
Half yr. Dep	0.00%	0.84%	0.84%	0.84%
Dep on CAPX	-	1,662	1,632	1,655
Rate of retirement	15.0%	15.0%	15.0%	15.0%
Retired property	275	29,684	29,138	29,546
Dep on Retired property	-	499	490	496
Dep on Prior yr. GROSS	-	-	198,219	200,993
Total Dep	-	-	199,362	202,152

East Coventry

Depreciation Expense	-	-	-	-	-
				part of OCN	

NET PPE — PURTA 0.001527765
Rev — Reg Assessment Fee 0.005652534

		2023	2024	1 2025	2 2026
East Coventry					
FIX CIP	**CIP**	$ -	$ -	$ -	$ -
	part of OCN	1,833	= to DepX 197,895		

2023	**2024**		
	-	23,750.00	579,500.00

WORKING NOTES

	2019	2020	2021	2022	2023	2024	2025	2026
Sewer Rental Charges	0	756,700	816,362	825,694	828,919	906,500	908,684	543,260
EDUs	0	0	0	0	1,115	1,115	1120	1242
					0	0	5	122
		0	0	0	557.5	1115	1117.5	1181
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	743.4247534			
						$ 460.00	$ 460.00	$ 460.00
		#DIV/0!	#DIV/0!	#DIV/0!	1486.849507	813.0044843		
East Coventry					C	830	8	
					E	1,115	11	
						0.74		
				1742000				
		Customer Growth				**0**	**4**	**91**
		Delivered to Customer	-	72.29	72	72	73	81
East Coventry		Customers	830	830	830	830	834	925
		Total Revenue (Less TAP)	816,362	825,694	828,919	906,500	908,684	958,258
		avg CUST rev	983.57	994.81	998.70	1,092.17	1,089.55	1,035.95
		avg CUST flow	-	0	0	0	0	0
		avg EDU rev	#DIV/0!	#DIV/0!	743.42	813.00	811.33	771.54
		avg EDU flow	#DIV/0!	#DIV/0!	0	0	0	0
		Rev Calculated				828,919	908,684	958,258

			2024	2025	2026
			Change		
		$ 998.70	$ 1,092.17	$ 1,089.55	$ 1,089.55
					$ -
			-	2,184	49,574
			828,919	908,684	958,258
			-	-	-

Prior yr				
NET PURTA	0.1432%		12,454	12,446
REV Reg Assessment	0.5690%		5,472	5,485
			17,926	17,931

WORKING NOTES

2019	2020	2021	2022	2023	2024	**2025**	**2026**

East Coventry Township Wastewater System Assets	
Investor Provided	8,600,000
Gross PP&E	11,798,761
Net PP&E	8,696,753
Revenues	961,710
EBITDA	643,502
EBIT	445,607
Customers	830
Population	2,945

	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
East Coventry							
LESS: EOS - Wages & Benefits	0	-	-	-	-	87,327	-
LESS: EOS - Professional Services	0	0	0	0	-	93,300	-
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-	-
East Coventry							
Wages			0	0	0	87,327	0
Professional Services					0	93,300	0
Eliminated Exp			0	0	0	0	

East Coventry					included in OCN	= to DepX	
Reported CAPX - from the financials	0	7,395	65,000	35,646	1,833	**197,895**	

	2019	**2020**	**2021**	**2022**	**2023**		Assets
GROSS Property, plant and equipment	-	-	-	-	11,798,761		**11,798,761**
Accumulated Depreciation	-	-	-	-	3,102,008		**3,102,008**
NET PPE	-	-	-	-	8,696,753		**8,696,753**
Total Debt	-	-	-	-	4,300,000	*E. Cov had no DEPX*	**197,895**
Net Equity	-	-	-	-	4,300,000	*E. Cov had no DEPX*	
Investor Provided Capital	-	-	-	-	8,600,000		

WORKING NOTES								
	2019	2020	2021	2022	2023	2024	**2025**	**2026**
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.68%			
Depreciation Expense	-	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	197,895.00	OCNLD Study	

	2024	2025	2026	2027	2028	
CAPX	0	0	0	0	0	0

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
GROSS Property, plant and equipment	12,301,075	12,473,221	12,647,776	12,824,774	13,004,249	13,186,236	13,370,769	13,557,885	13,747,619	13,940,009	14,135,091
Accumulated Depreciation	3,619,858	3,797,328	3,977,281	4,159,753	4,344,779	4,532,394	4,722,635	4,915,538	5,111,140	5,309,480	5,510,595
NET PPE	8,681,217	8,675,893	8,670,495	8,665,021	8,659,470	8,653,842	8,648,134	8,642,347	8,636,479	8,630,529	8,624,496
ntry Total Debt											
Net Equity											
Investor Provided Capital											
Depreciation / GROSS PPE			0	0							
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	199,730	**202,525**	205,359	208,233	211,147	214,102	217,098	220,136	223,217	226,341	229,508
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,678	1,701	1,725	1,749	1,774	1,798	1,824	1,849	1,875	1,901	1,928
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	29,960	30,379	30,804	31,235	31,672	32,115	32,565	33,020	33,483	33,951	34,426
	503	510	518	525	532	540	547	555	563	570	578
	203,806	206,658	209,550	212,483	215,456	218,471	221,529	224,629	227,772	230,960	234,192
	204,981	207,849	210,758	213,707	216,698	219,730	222,806	225,923	229,085	232,291	235,542

East Coventry

Depreciation Expense

	3 2027	4 2028	5 2029	6 2030	7 2031	8 2032	9 2033	10 2034	11 2035	12 2036	13 2037
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	191	71	72	56							
	23,750.00	57,000.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	66,500.00	66,500.00

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Sewer Rental Charges	572,470	576,380									
EDUs	1247	1259	1272	1285	1298	1311	1324	1337	1350	1364	1378
	5	12	13	13	13	13	13	13	13	14	14
	1244.5	1253									
	$ 460.00	$ 460.00									

East Coventry

	4	**9**	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	81	82	83	83	84	85	86	87	88	88	89
East Coventry	929	938	947	957	966	976	986	996	1,006	1,016	1,026
	1,010,012	1,017,094	1,027,107	1,037,378	1,047,752	1,058,229	1,068,812	1,079,500	1,090,295	1,101,198	1,112,210
		99.73%			**100.00%**						
	1,087.20	1,084.32	1,084.16	1,084.16	1,084.16	1,084.15	1,084.16	1,084.16	1,084.16	1,084.16	1,084.16
	0	0	0	0	0	0	0	0	0	0	0
	809.95	807.86	807.47	807.30	807.20	807.19	807.26	807.40	807.63	807.33	807.12
	0	0	0	0	0	0	0	0	0	0	0
	960,330	1,014,904	1,022,179	1,032,243	1,042,565	1,052,991	1,063,520	1,074,156	1,084,898	1,095,746	1,106,704

	2027	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	1,010,012	4,892	5,085	5,136	5,187	5,239	5,291	5,344	5,398	5,451	5,506
	1,010,012	1,017,094	1,027,107	1,037,378	1,047,752	1,058,229	1,068,812	1,079,500	1,090,295	1,101,198	1,112,210
	-	-	-	-	-	-	-	-	-	-	-
	12,439	12,432	12,424	12,416	12,408	12,400	12,392	12,384	12,376	12,367	12,359
	5,767	6,061	6,101	6,158	6,217	6,276	6,335	6,396	6,456	6,518	6,580
	18,206	18,493	18,525	18,574	18,625	18,676	18,727	18,780	18,832	18,885	18,939

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

East Coventry

LESS: EOS - Wages & Benefits	0.15	LESS: EOS - Wages Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0.5	LESS: EOS - Profes: Net Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses		LESS: EOS - El: Line Rentals	10% savings	100%	1

East Coventry

Wages

Professional Services

Eliminated Exp

East Coventry

Reported CAPX - from the financials

	Per Books	Difference
GROSS Property, plant and equipment	-	
Accumulated Depreciation	-	
NET PPE	-	8,696,753
Total Debt		
Net Equity		
Investor Provided Capital		

2023	0.0899	28.10%
2024	0.0849	27.71%
2025	0.0799	27.31%
2026	0.0749	26.92%
2027	0.0699	26.52%
2028	0.0649	26.13%
2029	0.0599	25.73%
2030	0.0549	25.34%
2031	0.0499	24.94%

WORKING NOTES	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation Rate											
Depreciation Expense											
CAPX											

	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	14,332,903	14,533,483	14,736,870	14,943,104	15,152,224	15,364,270	15,579,283
Accumulated Depreciation	5,714,525	5,921,309	6,130,986	6,343,598	6,559,186	6,777,791	6,999,454
NET PPE	8,618,378	8,612,174	8,605,884	8,599,506	8,593,038	8,586,479	8,579,829

ntry Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	232,720	235,977	239,279	242,628	246,023	249,466	252,957
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,955	1,982	2,010	2,038	2,067	2,096	2,125
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	34,908	35,397	35,892	36,394	36,903	37,420	37,944
	586	595	603	611	620	629	637
	237,470	240,793	244,163	247,579	251,044	254,557	258,120
	238,838	242,180	245,570	249,006	252,491	256,025	259,607

East Coventry

Depreciation Expense

	14 2038	15 2039	16 2040	17 2041	18 2042	19 2043	20 2044
	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	71,250.00

	2038	2039	2040	2041	2042	2043	2044
Sewer Rental Charges							
EDUs	1392	1406	1420	1434	1448	1462	1477
	14	14	14	14	14	14	15

East Coventry

	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	90	91	92	93	94	95	96
East Coventry	1,036	1,046	1,057	1,068	1,078	1,089	1,100
	1,123,332	1,134,565	1,145,911	1,157,370	1,168,944	1,186,536	1,198,402
	1,084.16	1,084.16	1,084.16	1,084.16	1,084.16	1,089.58	1,089.58
	0	0	0	0	0	0	0
	806.99	806.95	806.98	807.09	807.28	811.58	811.38
	0	0	0	0	0	0	0
	1,117,771	1,128,949	1,140,238	1,151,641	1,163,157	1,174,789	1,192,469

2038	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
				0.5%		0.8%
$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,089.55	$ 1,095.00	$ 1,095.00	$ 1,103.76
$ -	**$ -**	**$ -**	**$ -**	**$ 5.45**	**$ -**	**$ 8.76**
5,561	5,617	5,673	5,730	5,787	5,845	5,933
1,123,332	1,134,565	1,145,911	1,157,370	1,168,944	1,186,536	1,198,402
-	-	-	-	5,845	-	9,587
				1.23%		1.27%
12,350	12,342	12,333	12,324	12,314	12,305	12,296
6,643	6,706	6,770	6,834	6,900	6,999	7,066
18,993	19,048	19,103	19,158	19,214	19,304	19,362

	2038	2039	2040	2041	2042	2043	2044
East Coventry							
LESS: EOS - Wages & Benefits							
LESS: EOS - Professional Services							
LESS: EOS - Eliminated Expenses							
East Coventry							
Wages							
Professional Services							
Eliminated Exp							
East Coventry							
Reported CAPX - from the financials							
GROSS Property, plant and equipment							
Accumulated Depreciation							
NET PPE							
Total Debt							
Net Equity							
Investor Provided Capital							

	2038	2039	2040	2041	2042	2043	2044
Depreciation Rate							
Depreciation Expense							
CAPX							

WORKING NOTES

	2019	2020	2021	2022	2023	2024	**2025**	**2026**
GROSS Property, plant and equipment	-	-	-		11,798,761	11,798,761	11,963,878	12,131,305
Accumulated Depreciation	-	-	-		3,102,008	3,102,008	3,272,232	3,444,837
NET PPE	-	-	-		8,696,753	8,696,753	8,691,646	8,686,468
ntry Total Debt	-	-	-	-	-	*4,300,000*		
Net Equity	-	-	-	-	-	*4,300,000*		
Investor Provided Capital	-	-	-	-	-	8,600,000	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.68%		

Muni CAPX	**0**	**197,895**	**0**	**0**
IOU savings **0%**			100%	100%
CAPX/Prior Yr. GROSS PPE			1.65%	1.65%
CAPX	**1,833**	**197,895**	**194,255**	**196,973**
Dep rate	0.00%	1.68%	1.68%	1.68%
Half yr. Dep	0.00%	0.84%	0.84%	0.84%
Dep on CAPX	-	1,662	1,632	1,655
Rate of retirement	15.0%	15.0%	15.0%	15.0%
Retired property	275	29,684	29,138	29,546
Dep on Retired property	-	499	490	496
Dep on Prior yr. GROSS	-	-	198,219	200,993
Total Dep	-	-	199,362	202,152

East Coventry

Depreciation Expense	-	-	-	-	-
				part of OCN	

NET PPE — PURTA 0.001527765
Rev — Reg Assessment Fee 0.005652534

		2023	2024	1 2025	2 2026
East Coventry					
FIX CIP	**CIP**	$ -	$ -	$ -	$ -
		part of OCN 1,833	= to DepX 197,895		

2023	**2024**		
	-	23,750.00	579,500.00

WORKING NOTES

	2019	2020	2021	2022	2023	2024	2025	2026
Sewer Rental Charges	0	756,700	816,362	825,694	828,919	906,500	908,684	543,260
EDUs	0	0	0	0	1,115	1,115	1120	1242
					0	0	5	122
		0	0	0	557.5	1115	1117.5	1181
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	743.4247534			
						$ 460.00	$ 460.00	$ 460.00
		#DIV/0!	#DIV/0!	#DIV/0!	1486.849507	813.0044843		
East Coventry					C	830	8	
					E	1,115	11	
						0.74		
				1742000				
		Customer Growth				**0**	**4**	**91**
		Delivered to Customer	-	72.29	72	72	73	81
East Coventry		Customers	830	830	830	830	834	925
		Total Revenue (Less TAP)	816,362	825,694	828,919	906,500	908,684	958,258
		avg CUST rev	983.57	994.81	998.70	1,092.17	1,089.55	1,035.95
		avg CUST flow	-	0	0	0	0	0
		avg EDU rev	#DIV/0!	#DIV/0!	743.42	813.00	811.33	771.54
		avg EDU flow	#DIV/0!	#DIV/0!	0	0	0	0
		Rev Calculated				828,919	908,684	958,258

			2024	2025	2026
			Change		25.0%
		$ 998.70	$ 1,092.17	$ 1,089.55	$ 1,361.94
					$ 272.39
			-	2,184	49,574
			828,919	908,684	958,258
			-	-	239,565

Prior yr				
NET PURTA	0.1432%		12,454	12,446
REV Reg Assessment	0.5690%		5,472	5,485
			17,926	17,931

WORKING NOTES

2019	2020	2021	2022	2023	2024	**2025**	**2026**

East Coventry Township Wastewater System Assets	
Investor Provided	8,600,000
Gross PP&E	11,798,761
Net PP&E	8,696,753
Revenues	961,710
EBITDA	643,502
EBIT	445,607
Customers	830
Population	2,945

	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
East Coventry							
LESS: EOS - Wages & Benefits	0	-	-	-	-	87,327	-
LESS: EOS - Professional Services	0	0	0	0	-	93,300	-
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-	-
East Coventry							
Wages			0	0	0	87,327	0
Professional Services					0	93,300	0
Eliminated Exp			0	0	0	0	

East Coventry					included in OCN	= to DepX	
Reported CAPX - from the financials	0	7,395	65,000	35,646	1,833	**197,895**	

	2019	**2020**	**2021**	**2022**	**2023**		Assets
GROSS Property, plant and equipment	-	-	-	-	11,798,761		**11,798,761**
Accumulated Depreciation	-	-	-	-	3,102,008		**3,102,008**
NET PPE	-	-	-	-	8,696,753		**8,696,753**
Total Debt	-	-	-	-	4,300,000	*E. Cov had no DEPX*	**197,895**
Net Equity	-	-	-	-	4,300,000	*E. Cov had no DEPX*	
Investor Provided Capital	-	-	-	-	8,600,000		

WORKING NOTES								
	2019	2020	2021	2022	2023	2024	**2025**	**2026**
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.68%			
Depreciation Expense	-	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	197,895.00	OCNLD Study	

	2024	2025	2026	2027	2028	
CAPX	0	0	0	0	0	0

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
GROSS Property, plant and equipment	12,301,075	12,473,221	12,647,776	12,824,774	13,004,249	13,186,236	13,370,769	13,557,885	13,747,619	13,940,009	14,135,091
Accumulated Depreciation	3,619,858	3,797,328	3,977,281	4,159,753	4,344,779	4,532,394	4,722,635	4,915,538	5,111,140	5,309,480	5,510,595
NET PPE	8,681,217	8,675,893	8,670,495	8,665,021	8,659,470	8,653,842	8,648,134	8,642,347	8,636,479	8,630,529	8,624,496
ntry Total Debt											
Net Equity											
Investor Provided Capital											

Depreciation / GROSS PPE

		0	0								
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	199,730	**202,525**	205,359	208,233	211,147	214,102	217,098	220,136	223,217	226,341	229,508
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,678	1,701	1,725	1,749	1,774	1,798	1,824	1,849	1,875	1,901	1,928
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	29,960	30,379	30,804	31,235	31,672	32,115	32,565	33,020	33,483	33,951	34,426
	503	510	518	525	532	540	547	555	563	570	578
	203,806	206,658	209,550	212,483	215,456	218,471	221,529	224,629	227,772	230,960	234,192
	204,981	207,849	210,758	213,707	216,698	219,730	222,806	225,923	229,085	232,291	235,542

East Coventry

Depreciation Expense

	3	4	5	6	7	8	9	10	11	12	13
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	191	71	72	56							
	23,750.00	57,000.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	66,500.00	66,500.00

WORKING NOTES											
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Sewer Rental Charges	572,470	576,380									
EDUs	1247	1259	1272	1285	1298	1311	1324	1337	1350	1364	1378
	5	12	13	13	13	13	13	13	13	14	14
	1244.5	1253									
	$ 460.00	$ 460.00									

East Coventry

	4	**9**	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	81	82	83	83	84	85	86	87	88	88	89
East Coventry	929	938	947	957	966	976	986	996	1,006	1,016	1,026
	1,262,515	1,271,368	1,283,884	1,426,395	1,440,659	1,455,066	1,616,578	1,632,744	1,649,071	1,748,840	1,766,328
		99.74%			**100.00%**						
	1,359.00	1,355.40	1,355.19	1,490.71	1,490.71	1,490.71	1,639.79	1,639.79	1,639.78	1,721.77	1,721.77
	0	0	0	0	0	0	0	0	0	0	0
	1,012.44	1,009.82	1,009.34	1,110.04	1,109.91	1,109.89	1,220.98	1,221.20	1,221.53	1,282.14	1,281.81
	0	0	0	0	0	0	0	0	0	0	0
	960,330	1,268,631	1,277,725	1,290,303	1,433,527	1,447,862	1,462,341	1,624,661	1,640,908	1,657,316	1,757,584

	2027	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
			10.0%			10.0%			5.0%		
	$ 1,361.94	$ 1,361.94	$ 1,498.13	$ 1,498.13	$ 1,498.13	$ 1,647.94	$ 1,647.94	$ 1,647.94	$ 1,730.34	$ 1,730.34	$ 1,730.34
	$ -	**$ -**	**$ 136.19**	**$ -**	**$ -**	**$ 149.81**	**$ -**	**$ -**	**$ 82.40**	**$ -**	**$ -**
	1,262,515	6,116	6,357	6,419	7,132	7,203	7,275	8,083	8,164	8,245	8,744
	1,262,515	1,271,368	1,283,884	1,426,395	1,440,659	1,455,066	1,616,578	1,632,744	1,649,071	1,748,840	1,766,328
	-	-	128,388	-	-	145,507	-	-	82,454	-	-
	12,439	12,432	12,424	12,416	12,408	12,400	12,392	12,384	12,376	12,367	12,359
	7,130	7,498	7,548	8,350	8,430	8,511	9,421	9,512	9,604	10,167	10,265
	19,569	19,930	19,972	20,766	20,838	20,911	21,813	21,896	21,980	22,534	22,624

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

East Coventry

LESS: EOS - Wages & Benefits	0.15	LESS: EOS - Wages Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0.5	LESS: EOS - Profes: Net Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses		LESS: EOS - El: Line Rentals	10% savings	100%	1

East Coventry

Wages

Professional Services

Eliminated Exp

East Coventry

Reported CAPX - from the financials

	Per Books	Difference
GROSS Property, plant and equipment	-	
Accumulated Depreciation	-	
NET PPE	-	8,696,753
Total Debt		
Net Equity		
Investor Provided Capital		

2023	0.0899	28.10%
2024	0.0849	27.71%
2025	0.0799	27.31%
2026	0.0749	26.92%
2027	0.0699	26.52%
2028	0.0649	26.13%
2029	0.0599	25.73%
2030	0.0549	25.34%
2031	0.0499	24.94%

WORKING NOTES	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation Rate											
Depreciation Expense											
CAPX											

	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	14,332,903	14,533,483	14,736,870	14,943,104	15,152,224	15,364,270	15,579,283
Accumulated Depreciation	5,714,525	5,921,309	6,130,986	6,343,598	6,559,186	6,777,791	6,999,454
NET PPE	8,618,378	8,612,174	8,605,884	8,599,506	8,593,038	8,586,479	8,579,829

ntry Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%
	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%	1.65%
	232,720	235,977	239,279	242,628	246,023	249,466	252,957
	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%	1.68%
	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%	0.84%
	1,955	1,982	2,010	2,038	2,067	2,096	2,125
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	34,908	35,397	35,892	36,394	36,903	37,420	37,944
	586	595	603	611	620	629	637
	237,470	240,793	244,163	247,579	251,044	254,557	258,120
	238,838	242,180	245,570	249,006	252,491	256,025	259,607

East Coventry

Depreciation Expense

	14 2038	15 2039	16 2040	17 2041	18 2042	19 2043	20 2044
	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	71,250.00

	2038	2039	2040	2041	2042	2043	2044
Sewer Rental Charges							
EDUs	1392	1406	1420	1434	1448	1462	1477
	14	14	14	14	14	14	15

East Coventry

	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	90	91	92	93	94	95	96
East Coventry	1,036	1,046	1,057	1,068	1,078	1,089	1,100
	1,783,991	1,801,831	1,819,850	1,883,999	1,902,839	1,921,868	1,941,086
	1,721.77	1,721.77	1,721.77	1,764.82	1,764.82	1,764.82	1,764.82
	0	0	0	0	0	0	0
	1,281.60	1,281.53	1,281.58	1,313.81	1,314.12	1,314.55	1,314.21
	0	0	0	0	0	0	0
	1,775,160	1,792,911	1,810,840	1,828,949	1,893,419	1,912,353	1,931,477

2038	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
		2.5%				2.5%
$ 1,730.34	$ 1,730.34	$ 1,773.60	$ 1,773.60	$ 1,773.60	$ 1,773.60	$ 1,817.94
$ -	**$ -**	**$ 43.26**	**$ -**	**$ -**	**$ -**	**$ 44.34**
8,832	8,920	9,009	9,099	9,420	9,514	9,609
1,783,991	1,801,831	1,819,850	1,883,999	1,902,839	1,921,868	1,941,086
-	-	45,496	-	-	-	48,527
				0.02%		0.01%
12,350	12,342	12,333	12,324	12,314	12,305	12,296
10,365	10,465	10,567	10,928	11,034	11,141	11,250
22,715	22,807	22,900	23,252	23,348	23,446	23,546

	2038	2039	2040	2041	2042	2043	2044
East Coventry							
LESS: EOS - Wages & Benefits							
LESS: EOS - Professional Services							
LESS: EOS - Eliminated Expenses							
East Coventry							
Wages							
Professional Services							
Eliminated Exp							
East Coventry							
Reported CAPX - from the financials							
GROSS Property, plant and equipment							
Accumulated Depreciation							
NET PPE							
Total Debt							
Net Equity							
Investor Provided Capital							

	2038	2039	2040	2041	2042	2043	2044
Depreciation Rate							
Depreciation Expense							
CAPX							

WORKING NOTES

	2019	2020	2021	2022	2023	2024	**2025**	**2026**
GROSS Property, plant and equipment	-	-	-		19,209,967	19,209,967	19,481,999	19,757,883
Accumulated Depreciation	-	-	-		-	-	280,467	564,907
NET PPE	-	-	-		19,209,967	19,209,967	19,201,532	19,192,976
ntry Total Debt	-	-	-	-	-	*4,300,000*		
Net Equity	-	-	-	-	-	*4,300,000*		
Investor Provided Capital	-	-	-	-	-	8,600,000	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.70%		

Muni CAPX	**0**	**197,895**	**0**	**0**
IOU savings **0%**			100%	100%
CAPX/Prior Yr. GROSS PPE			1.67%	1.67%
CAPX	**1,833**	**197,895**	**320,038**	**324,570**
Dep rate	0.00%	1.70%	1.70%	1.70%
Half yr. Dep	0.00%	0.85%	0.85%	0.85%
Dep on CAPX	-	1,682	2,720	2,759
Rate of retirement	15.0%	15.0%	15.0%	15.0%
Retired property	275	29,684	48,006	48,686
Dep on Retired property	-	505	816	828
Dep on Prior yr. GROSS	-	-	326,569	331,194
Total Dep	-	-	328,473	333,125

East Coventry

Depreciation Expense	-	-	-	-	-
				part of OCN	

NET PPE — PURTA 0.001527765

Rev — Reg Assessment Fee 0.005652534

		2023	2024	1 2025	2 2026
East Coventry					
FIX CIP	**CIP**	$ -	$ -	$ -	$ -
		part of OCN 1,833	= to DepX 197,895		

2023	**2024**		
	-	23,750.00	579,500.00

WORKING NOTES

	2019	2020	2021	2022	2023	2024	2025	2026
Sewer Rental Charges	0	756,700	816,362	825,694	828,919	906,500	908,684	543,260
EDUs	0	0	0	0	1,115	1,115	1120	1242
					0	0	5	122
		0	0	0	557.5	1115	1117.5	1181
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	743.4247534			
						$ 460.00	$ 460.00	$ 460.00
		#DIV/0!	#DIV/0!	#DIV/0!	1486.849507	813.0044843		
East Coventry					C	830	8	
					E	1,115	11	
						0.74		
				1742000				
		Customer Growth				**0**	**4**	**91**
		Delivered to Customer	-	72.29	72	72	73	81
East Coventry		Customers	830	830	830	830	834	925
		Total Revenue (Less TAP)	816,362	825,694	828,919	906,500	908,684	958,258
		avg CUST rev	983.57	994.81	998.70	1,092.17	1,089.55	1,035.95
		avg CUST flow	-	0	0	0	0	0
		avg EDU rev	#DIV/0!	#DIV/0!	743.42	813.00	811.33	771.54
		avg EDU flow	#DIV/0!	#DIV/0!	0	0	0	0
		Rev Calculated				828,919	908,684	958,258

			2024	2025	2026
			Change		
		$ 998.70	$ 1,092.17	$ 1,089.55	$ 1,089.55
					$ -
			-	2,184	49,574
			828,919	908,684	958,258
			-	-	-
Prior yr					
NET PURTA	0.1432%			27,509	27,497
REV Reg Assessment	0.5690%			5,472	5,485
				32,981	32,982

WORKING NOTES

2019	2020	2021	2022	2023	2024	**2025**	**2026**

East Coventry Township Wastewater System Assets	
Investor Provided	8,600,000
Gross PP&E	19,209,967
Net PP&E	19,209,967
Revenues	961,710
EBITDA	643,502
EBIT	316,933
Customers	830
Population	2,945

	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
East Coventry							
LESS: EOS - Wages & Benefits	0	-	-	-	-	87,327	-
LESS: EOS - Professional Services	0	0	0	0	-	93,300	-
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-	-
East Coventry							
Wages			0	0	0	87,327	0
Professional Services					0	93,300	0
Eliminated Exp			0	0	0	0	

East Coventry					included in OCN	= to DepX	
Reported CAPX - from the financials	0	7,395	65,000	35,646	1,833	**197,895**	

	2019	**2020**	**2021**	**2022**	**2023**		Assets
GROSS Property, plant and equipment	-	-	-	-	19,209,967		**19,209,967**
Accumulated Depreciation	-	-	-	-	-		-
NET PPE	-	-	-	-	19,209,967		**19,209,967**
Total Debt	-	-	-	-	4,300,000	*E. Cov had no DEPX*	**326,569**
Net Equity	-	-	-	-	4,300,000	*E. Cov had no DEPX*	
Investor Provided Capital	-	-	-	-	8,600,000		

WORKING NOTES								
	2019	2020	2021	2022	2023	2024	**2025**	**2026**
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.70%			
Depreciation Expense	-	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	326,569.00	OCNLD Study	

	2024	2025	2026	2027	2028		
CAPX	0	0	0	0	0		0

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
GROSS Property, plant and equipment	20,037,674	20,321,428	20,609,200	20,901,047	21,197,026	21,497,197	21,801,619	22,110,352	22,423,456	22,740,995	23,063,030
Accumulated Depreciation	853,374	1,145,927	1,442,623	1,743,520	2,048,678	2,358,158	2,672,020	2,990,327	3,313,140	3,640,525	3,972,546
NET PPE	19,184,300	19,175,501	19,166,577	19,157,527	19,148,348	19,139,039	19,129,599	19,120,025	19,110,316	19,100,470	19,090,484
ntry Total Debt											
Net Equity											
Investor Provided Capital											
Depreciation / GROSS PPE			0	0							
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%
	329,166	**333,828**	338,555	343,349	348,211	353,142	358,143	363,215	368,358	373,575	378,865
	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
	2,798	2,838	2,878	2,918	2,960	3,002	3,044	3,087	3,131	3,175	3,220
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	49,375	50,074	50,783	51,502	52,232	52,971	53,721	54,482	55,254	56,036	56,830
	839	851	863	876	888	901	913	926	939	953	966
	335,884	340,640	345,464	350,356	355,318	360,349	365,452	370,628	375,876	381,199	386,597
	337,843	342,627	347,479	352,399	357,390	362,451	367,583	372,788	378,068	383,421	388,851

East Coventry

Depreciation Expense

	3 2027	4 2028	5 2029	6 2030	7 2031	8 2032	9 2033	10 2034	11 2035	12 2036	13 2037
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	191	71	72	56							
	23,750.00	57,000.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	66,500.00	66,500.00

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Sewer Rental Charges	572,470	576,380									
EDUs	1247	1259	1272	1285	1298	1311	1324	1337	1350	1364	1378
	5	12	13	13	13	13	13	13	13	14	14
	1244.5	1253									
	$ 460.00	$ 460.00									

East Coventry

	4	**9**	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	81	82	83	83	84	85	86	87	88	88	89
East Coventry	929	938	947	957	966	976	986	996	1,006	1,016	1,026
	1,010,012	1,322,222	1,335,239	1,348,592	1,498,285	1,513,268	1,528,401	1,698,053	1,715,034	1,732,184	1,749,506
		129.66%			**110.00%**						
	1,087.20	1,409.62	1,409.40	1,409.40	1,550.34	1,550.34	1,550.34	1,705.38	1,705.38	1,705.38	1,705.38
	0	0	0	0	0	0	0	0	0	0	0
	809.95	1,050.22	1,049.72	1,049.49	1,154.30	1,154.29	1,154.38	1,270.05	1,270.40	1,269.93	1,269.60
	0	0	0	0	0	0	0	0	0	0	0
	960,330	1,014,904	1,328,833	1,341,915	1,355,335	1,505,776	1,520,834	1,536,043	1,706,543	1,723,609	1,740,845

	2027	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
	30.0%			10.0%			10.0%				
	$ 1,416.41	$ 1,416.41	$ 1,416.41	$ 1,558.06	$ 1,558.06	$ 1,558.06	$ 1,713.86	$ 1,713.86	$ 1,713.86	$ 1,713.86	$ 1,713.86
	$ 326.86	**$ -**	**$ -**	**$ 141.64**	**$ -**	**$ -**	**$ 155.81**	**$ -**	**$ -**	**$ -**	**$ -**
	1,313,016	4,892	6,611	6,676	6,743	7,491	7,566	7,642	8,490	8,575	8,661
	1,010,012	1,322,222	1,335,239	1,348,592	1,498,285	1,513,268	1,528,401	1,698,053	1,715,034	1,732,184	1,749,506
	303,004	-	-	134,859	-	-	152,840	-	-	-	-
	27,484	27,472	27,459	27,447	27,434	27,420	27,407	27,394	27,380	27,366	27,352
	5,767	7,785	7,838	7,912	8,755	8,839	8,925	9,880	9,976	10,073	10,170
	33,251	35,257	35,297	35,359	36,189	36,259	36,332	37,274	37,356	37,439	37,522

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

East Coventry

LESS: EOS - Wages & Benefits	0.15	LESS: EOS - Wages Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0.5	LESS: EOS - Profes: Net Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses		LESS: EOS - El: Line Rentals	10% savings	100%	1

East Coventry

Wages

Professional Services

Eliminated Exp

East Coventry

Reported CAPX - from the financials

	Per Books	Difference
GROSS Property, plant and equipment	-	
Accumulated Depreciation	-	
NET PPE	-	19,209,967
Total Debt		
Net Equity		
Investor Provided Capital		

2023	0.0899	28.10%
2024	0.0849	27.71%
2025	0.0799	27.31%
2026	0.0749	26.92%
2027	0.0699	26.52%
2028	0.0649	26.13%
2029	0.0599	25.73%
2030	0.0549	25.34%
2031	0.0499	24.94%

WORKING NOTES	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation Rate											
Depreciation Expense											
CAPX											

	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	23,389,625	23,720,845	24,056,756	24,397,424	24,742,916	25,093,300	25,448,646
Accumulated Depreciation	4,309,269	4,650,760	4,997,087	5,348,319	5,704,525	6,065,774	6,432,140
NET PPE	19,080,356	19,070,085	19,059,669	19,049,105	19,038,391	19,027,526	19,016,506

ntry Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%
	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%
	384,230	389,671	395,189	400,786	406,461	412,217	418,054
	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
	3,266	3,312	3,359	3,407	3,455	3,504	3,553
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	57,635	58,451	59,278	60,118	60,969	61,833	62,708
	980	994	1,008	1,022	1,036	1,051	1,066
	392,072	397,624	403,254	408,965	414,756	420,630	426,586
	394,358	399,942	405,606	411,350	417,175	423,082	429,073

East Coventry

Depreciation Expense

	14 2038	15 2039	16 2040	17 2041	18 2042	19 2043	20 2044
	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	71,250.00

	2038	2039	2040	2041	2042	2043	2044
Sewer Rental Charges							
EDUs	1392	1406	1420	1434	1448	1462	1477
	14	14	14	14	14	14	15

East Coventry

	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	90	91	92	93	94	95	96
East Coventry	1,036	1,046	1,057	1,068	1,078	1,089	1,100
	1,767,001	1,784,671	1,802,518	1,866,057	1,884,717	1,922,600	1,941,826
	1,705.38	1,705.38	1,705.38	1,748.01	1,748.01	1,765.49	1,765.49
	0	0	0	0	0	0	0
	1,269.40	1,269.33	1,269.38	1,301.29	1,301.60	1,315.05	1,314.71
	0	0	0	0	0	0	0
	1,758,254	1,775,836	1,793,594	1,811,531	1,875,387	1,894,141	1,932,213

	2038	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
			2.5%		1.0%		
	$ 1,713.86	$ 1,713.86	$ 1,756.71	$ 1,756.71	$ 1,774.27	$ 1,774.27	$ 1,774.27
	$ -	**$ -**	**$ 42.85**	**$ -**	**$ 17.57**	**$ -**	**$ -**
	8,748	8,835	8,923	9,013	9,330	9,424	9,613
	1,767,001	1,784,671	1,802,518	1,866,057	1,884,717	1,922,600	1,941,826
	-	-	45,063	-	18,847	-	-
					0.50%		0.51%
	27,338	27,323	27,308	27,293	27,278	27,263	27,247
	10,269	10,368	10,469	10,827	10,932	11,145	11,254
	37,607	37,691	37,777	38,120	38,210	38,408	38,501

	2038	2039	2040	2041	2042	2043	2044
East Coventry							
LESS: EOS - Wages & Benefits							
LESS: EOS - Professional Services							
LESS: EOS - Eliminated Expenses							
East Coventry							
Wages							
Professional Services							
Eliminated Exp							
East Coventry							
Reported CAPX - from the financials							
GROSS Property, plant and equipment							
Accumulated Depreciation							
NET PPE							
Total Debt							
Net Equity							
Investor Provided Capital							

	2038	2039	2040	2041	2042	2043	2044
Depreciation Rate							
Depreciation Expense							
CAPX							

WORKING NOTES

	2019	2020	2021	2022	2023	2024	**2025**	**2026**
GROSS Property, plant and equipment	-	-	-		19,209,967	19,209,967	19,481,999	19,757,883
Accumulated Depreciation	-	-	-		-	-	280,467	564,907
NET PPE	-	-	-		19,209,967	19,209,967	19,201,532	19,192,976
ntry Total Debt	-	-	-	-	-	*4,300,000*		
Net Equity	-	-	-	-	-	*4,300,000*		
Investor Provided Capital	-	-	-	-	-	8,600,000	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.70%		

Muni CAPX	**0**	**197,895**	**0**	**0**
IOU savings **0%**			100%	100%
CAPX/Prior Yr. GROSS PPE			1.67%	1.67%
CAPX	**1,833**	**197,895**	**320,038**	**324,570**
Dep rate	0.00%	1.70%	1.70%	1.70%
Half yr. Dep	0.00%	0.85%	0.85%	0.85%
Dep on CAPX	-	1,682	2,720	2,759
Rate of retirement	15.0%	15.0%	15.0%	15.0%
Retired property	275	29,684	48,006	48,686
Dep on Retired property	-	505	816	828
Dep on Prior yr. GROSS	-	-	326,569	331,194
Total Dep	-	-	328,473	333,125

East Coventry

Depreciation Expense	-	-	-	-	-
				part of OCN	

NET PPE — PURTA 0.001527765
Rev — Reg Assessment Fee 0.005652534

			2023	2024	1 2025	2 2026
East Coventry						
	FIX CIP	**CIP**	$ -	$ -	$ -	$ -
			part of OCN	= to DepX		
			1,833	197,895		

2023	**2024**		
	-	23,750.00	579,500.00

WORKING NOTES

	2019	2020	2021	2022	2023	2024	2025	2026
Sewer Rental Charges	0	756,700	816,362	825,694	828,919	906,500	908,684	543,260
EDUs	0	0	0	0	1,115	1,115	1120	1242
					0	0	5	122
		0	0	0	557.5	1115	1117.5	1181
	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	743.4247534			
						$ 460.00	$ 460.00	$ 460.00
		#DIV/0!	#DIV/0!	#DIV/0!	1486.849507	813.0044843		
East Coventry					C	830	8	
					E	1,115	11	
						0.74		
				1742000				
		Customer Growth				**0**	**4**	**91**
		Delivered to Customer	-	72.29	72	72	73	81
East Coventry		Customers	830	830	830	830	834	925
		Total Revenue (Less TAP)	816,362	825,694	828,919	906,500	908,684	958,258
		avg CUST rev	983.57	994.81	998.70	1,092.17	1,089.55	1,035.95
		avg CUST flow	-	0	0	0	0	0
		avg EDU rev	#DIV/0!	#DIV/0!	743.42	813.00	811.33	771.54
		avg EDU flow	#DIV/0!	#DIV/0!	0	0	0	0
		Rev Calculated				828,919	908,684	958,258

			2024	2025	2026
		Change			75.0%
		$ 998.70	$ 1,092.17	$ 1,089.55	$ 1,906.71
					$ 817.16
			-	2,184	49,574
			828,919	908,684	958,258
			-	-	718,694

Prior yr				
NET PURTA	0.1432%		27,509	27,497
REV Reg Assessment	0.5690%		5,472	5,485
			32,981	32,982

WORKING NOTES

2019	2020	2021	2022	2023	2024	**2025**	**2026**

East Coventry Township Wastewater System Assets	
Investor Provided	8,600,000
Gross PP&E	19,209,967
Net PP&E	19,209,967
Revenues	961,710
EBITDA	643,502
EBIT	316,933
Customers	830
Population	2,945

	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
East Coventry							
LESS: EOS - Wages & Benefits	0	-	-	-	-	87,327	-
LESS: EOS - Professional Services	0	0	0	0	-	93,300	-
LESS: EOS - Eliminated Expenses	0	0	0	0	-	-	-
East Coventry							
Wages			0	0	0	87,327	0
Professional Services					0	93,300	0
Eliminated Exp			0	0	0	0	

East Coventry					included in OCN	= to DepX	
Reported CAPX - from the financials	0	7,395	65,000	35,646	1,833	**197,895**	

	2019	**2020**	**2021**	**2022**	**2023**		Assets
GROSS Property, plant and equipment	-	-	-	-	19,209,967		**19,209,967**
Accumulated Depreciation	-	-	-	-	-		-
NET PPE	-	-	-	-	19,209,967		**19,209,967**
Total Debt	-	-	-	-	4,300,000	*E. Cov had no DEPX*	**326,569**
Net Equity	-	-	-	-	4,300,000	*E. Cov had no DEPX*	
Investor Provided Capital	-	-	-	-	8,600,000		

WORKING NOTES								
	2019	2020	2021	2022	2023	2024	**2025**	**2026**
Depreciation Rate	0.00%	0.00%	0.00%	0.00%	1.70%			
Depreciation Expense	-	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	- *E. Cov had no DEPX*	326,569.00	OCNLD Study	

	2024	2025	2026	2027	2028	
CAPX	0	0	0	0	0	0

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
GROSS Property, plant and equipment	20,037,674	20,321,428	20,609,200	20,901,047	21,197,026	21,497,197	21,801,619	22,110,352	22,423,456	22,740,995	23,063,030
Accumulated Depreciation	853,374	1,145,927	1,442,623	1,743,520	2,048,678	2,358,158	2,672,020	2,990,327	3,313,140	3,640,525	3,972,546
NET PPE	19,184,300	19,175,501	19,166,577	19,157,527	19,148,348	19,139,039	19,129,599	19,120,025	19,110,316	19,100,470	19,090,484
ntry Total Debt											
Net Equity											
Investor Provided Capital											
Depreciation / GROSS PPE			0	0							
	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%
	329,166	**333,828**	338,555	343,349	348,211	353,142	358,143	363,215	368,358	373,575	378,865
	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
	2,798	2,838	2,878	2,918	2,960	3,002	3,044	3,087	3,131	3,175	3,220
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	49,375	50,074	50,783	51,502	52,232	52,971	53,721	54,482	55,254	56,036	56,830
	839	851	863	876	888	901	913	926	939	953	966
	335,884	340,640	345,464	350,356	355,318	360,349	365,452	370,628	375,876	381,199	386,597
	337,843	342,627	347,479	352,399	357,390	362,451	367,583	372,788	378,068	383,421	388,851

East Coventry

Depreciation Expense

	3	4	5	6	7	8	9	10	11	12	13
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	191	71	72	56							
	23,750.00	57,000.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	61,750.00	66,500.00	66,500.00

WORKING NOTES											
	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Sewer Rental Charges	572,470	576,380									
EDUs	1247	1259	1272	1285	1298	1311	1324	1337	1350	1364	1378
	5	12	13	13	13	13	13	13	13	14	14
	1244.5	1253									
	$ 460.00	$ 460.00									

East Coventry

	4	**9**	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	81	82	83	83	84	85	86	87	88	88	89
East Coventry	929	938	947	957	966	976	986	996	1,006	1,016	1,026
	1,767,521	1,779,915	1,797,437	2,087,724	2,108,601	2,129,687	2,409,102	2,433,193	2,457,525	2,730,310	2,757,613
		99.73%			**100.00%**						
	1,902.61	1,897.56	1,897.27	2,181.86	2,181.86	2,181.86	2,443.69	2,443.69	2,443.69	2,688.05	2,688.05
	0	0	0	0	0	0	0	0	0	0	0
	1,417.42	1,413.75	1,413.08	1,624.69	1,624.50	1,624.48	1,819.56	1,819.89	1,820.39	2,001.69	2,001.17
	0	0	0	0	0	0	0	0	0	0	0
	960,330	1,776,083	1,788,815	1,806,424	2,098,163	2,119,144	2,140,335	2,421,148	2,445,359	2,469,813	2,743,962

	2027	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**
			15.0%			12.0%			10.0%		
	$ 1,906.71	$ 1,906.71	$ 2,192.72	$ 2,192.72	$ 2,192.72	$ 2,455.84	$ 2,455.84	$ 2,455.84	$ 2,701.43	$ 2,701.43	$ 2,701.43
	$ -	**$ -**	**$ 286.01**	**$ -**	**$ -**	**$ 263.13**	**$ -**	**$ -**	**$ 245.58**	**$ -**	**$ -**
	1,767,521	8,562	8,900	8,987	10,439	10,543	10,648	12,046	12,166	12,288	13,652
	1,767,521	1,779,915	1,797,437	2,087,724	2,108,601	2,129,687	2,409,102	2,433,193	2,457,525	2,730,310	2,757,613
	-	-	269,616	-	-	255,562	-	-	245,752	-	-
	27,484	27,472	27,459	27,447	27,434	27,420	27,407	27,394	27,380	27,366	27,352
	9,856	10,371	10,442	12,076	12,193	12,312	13,886	14,022	14,159	15,696	15,850
	37,340	37,843	37,901	39,523	39,627	39,732	41,293	41,416	41,539	43,062	43,202

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037

East Coventry

LESS: EOS - Wages & Benefits	0.15	LESS: EOS - Wages Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0.5	LESS: EOS - Profes: Net Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses		LESS: EOS - El: Line Rentals	10% savings	100%	1

East Coventry

Wages

Professional Services

Eliminated Exp

East Coventry

Reported CAPX - from the financials

	Per Books	Difference
GROSS Property, plant and equipment	-	
Accumulated Depreciation	-	
NET PPE	-	19,209,967
Total Debt		
Net Equity		
Investor Provided Capital		

2023	0.0899	28.10%
2024	0.0849	27.71%
2025	0.0799	27.31%
2026	0.0749	26.92%
2027	0.0699	26.52%
2028	0.0649	26.13%
2029	0.0599	25.73%
2030	0.0549	25.34%
2031	0.0499	24.94%

WORKING NOTES

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
Depreciation Rate											
Depreciation Expense											
CAPX											

	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	23,389,625	23,720,845	24,056,756	24,397,424	24,742,916	25,093,300	25,448,646
Accumulated Depreciation	4,309,269	4,650,760	4,997,087	5,348,319	5,704,525	6,065,774	6,432,140
NET PPE	19,080,356	19,070,085	19,059,669	19,049,105	19,038,391	19,027,526	19,016,506

ntry Total Debt

Net Equity

Investor Provided Capital

Depreciation / GROSS PPE

	0	**0**	**0**	**0**	**0**	**0**	**0**
	100%	100%	100%	100%	100%	100%	100%
	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%	1.67%
	384,230	389,671	395,189	400,786	406,461	412,217	418,054
	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%	1.70%
	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
	3,266	3,312	3,359	3,407	3,455	3,504	3,553
	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
	57,635	58,451	59,278	60,118	60,969	61,833	62,708
	980	994	1,008	1,022	1,036	1,051	1,066
	392,072	397,624	403,254	408,965	414,756	420,630	426,586
	394,358	399,942	405,606	411,350	417,175	423,082	429,073

East Coventry

Depreciation Expense

	14 2038	15 2039	16 2040	17 2041	18 2042	19 2043	20 2044
	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	66,500.00	71,250.00

	2038	2039	2040	2041	2042	2043	2044
Sewer Rental Charges							
EDUs	1392	1406	1420	1434	1448	1462	1477
	14	14	14	14	14	14	15

East Coventry

	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
	90	91	92	93	94	95	96
East Coventry	1,036	1,046	1,057	1,068	1,078	1,089	1,100
	2,785,189	3,094,345	3,125,289	3,235,455	3,267,810	3,366,497	3,400,162
	2,688.05	2,956.86	2,956.86	3,030.78	3,030.78	3,091.40	3,091.40
	0	0	0	0	0	0	0
	2,000.85	2,200.81	2,200.91	2,256.24	2,256.77	2,302.67	2,302.07
	0	0	0	0	0	0	0
	2,771,401	2,799,115	3,109,817	3,140,915	3,251,632	3,284,149	3,383,329

2038	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
10.0%		2.5%		2.0%		2.0%
$ 2,971.57	$ 2,971.57	$ 3,045.86	$ 3,045.86	$ 3,106.78	$ 3,106.78	$ 3,168.91
$ 270.14	**$ -**	**$ 74.29**	**$ -**	**$ 60.92**	**$ -**	**$ 62.14**
13,788	13,926	15,472	15,626	16,177	16,339	16,832
2,785,189	3,094,345	3,125,289	3,235,455	3,267,810	3,366,497	3,400,162
278,519	-	78,132	-	65,356	-	68,003
				-0.55%		-0.56%
27,338	27,323	27,308	27,293	27,278	27,263	27,247
16,005	17,747	17,921	18,542	18,724	19,280	19,470
43,343	45,070	45,229	45,835	46,002	46,543	46,717

	2038	2039	2040	2041	2042	2043	2044
East Coventry							
LESS: EOS - Wages & Benefits							
LESS: EOS - Professional Services							
LESS: EOS - Eliminated Expenses							
East Coventry							
Wages							
Professional Services							
Eliminated Exp							
East Coventry							
Reported CAPX - from the financials							
GROSS Property, plant and equipment							
Accumulated Depreciation							
NET PPE							
Total Debt							
Net Equity							
Investor Provided Capital							

	2038	2039	2040	2041	2042	2043	2044
Depreciation Rate							
Depreciation Expense							
CAPX							

East Coventry Township Wastewater System Assets			
Total Debt	#NA	#NA	#NA
Purchase of Capital Assets	1,833	35,646	65,000
	2023	2022	2021
Income (Loss) Before Transfers	349,718	388,436	369,065
Interest paid	147,500	162,573	168,173
Depreciation	0	0	0
Total Source	$497,218	$551,009	$537,238
Income tax	0	0	0
Principal	345,000	285,000	280,000
Interest paid	147,500	162,573	168,173
Total Use	$492,500	$447,573	$448,173
W/Out Trans			
Debt Service Coverage	1.01	1.23	1.20
Pre-Tax Interest Coverage - Including AFC(3)(x)	3.37	3.39	3.19
Post-Tax Interest Coverage - Including AFC(3)(x)	3.37	3.39	3.19
GCF / Interest Coverage(4)(x)	3.37	3.39	3.19
GCF / Tot. Debt(7)(%)	#NA	#NA	#NA
GCF / Construction(6)(%)	19078.99	1089.71	567.79

Comparable Group

Debt Service Coverage - As Reported

Comparable Group	2023	2022	2021
AMERICAN STATES WATER COMPANY	4.9	5.4	3.1
AMERICAN WATER WORKS COMPANY, INC.	2.8	4.2	3.0
ARTESIAN RESOURCES CORPORATION	3.5	3.9	3.9
CALIFORNIA WATER SERVICE GROUP	4.2	5.0	5.1
ESSENTIAL UTILITIES, INC.	1.0	0.8	1.0
MIDDLESEX WATER COMPANY	2.4	4.7	1.2
SJW GROUP	3.7	1.6	1.6
THE YORK WATER COMPANY	0.6	0.5	0.7
Median	3.2	4.1	2.3

Company Name	2023 DEPRECIATION	2022 DEPRECIATION	2021 DEPRECIATION	2023 TOTAL INTERST EXPENSE	2022 TOTAL INTERST EXPENSE	2021 TOTAL INTERST EXPENSE
AMERICAN STATES WATER COMPANY	43.254	41.697	39.974	42.762	27.027	22.834
AMERICAN WATER WORKS COMPANY, INC.	704.000	649.000	636.000	460.000	433.000	403.000
ARTESIAN RESOURCES CORPORATION	13.335	12.620	11.885	9.156	8.502	7.592
CALIFORNIA WATER SERVICE GROUP	123.124	117.364	111.581	52.809	46.686	44.980
ESSENTIAL UTILITIES, INC.	343.695	321.177	297.952	283.362	238.116	207.709
MIDDLESEX WATER COMPANY	29.442	27.475	26.799	13.143	9.367	8.114
SJW GROUP	108.138	106.439	96.474	66.144	58.062	54.339
THE YORK WATER COMPANY	11.746	10.139	8.859	7.047	5.114	4.926

	2023 INCOME TO PREF+COMM	2022 INCOME TO PREF+COMM	2021 INCOME TO PREF+COMM	2023 REPAY LT DEBT	2022 REPAY LT DEBT	2021 REPAY LT DEBT
AMERICAN STATES WATER COMPANY	42.762	27.027	22.834	0.334	0.377	28.356
AMERICAN WATER WORKS COMPANY, INC.	460.000	433.000	403.000	282.000	15.000	372.000
ARTESIAN RESOURCES CORPORATION	9.156	8.502	7.592	2.010	1.643	1.825
CALIFORNIA WATER SERVICE GROUP	52.809	46.686	44.980	1.811	5.423	5.353
ESSENTIAL UTILITIES, INC.	283.362	238.116	207.709	876.379	977.175	769.546
MIDDLESEX WATER COMPANY	13.143	9.367	8.114	17.463	7.423	52.691
SJW GROUP	66.144	58.062	54.339	4.347	89.177	76.113
THE YORK WATER COMPANY	7.047	5.114	4.926	64.148	61.458	37.649

Company Name	Pretax Operating Income			Interest expense			Net Income		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
AMERICAN STATES WATER CO	209.282	129.087	147.604	42.762	27.027	22.834	124.921	78.396	94.347
AMERICAN WATER WORKS CO INC	1,656.000	1,441.000	2,043.000	460.000	433.000	403.000	944.000	820.000	1,263.000
ARTESIAN RESOURCES -CL A	32.203	32.378	30.156	9.156	8.502	7.592	16.699	17.998	16.827
CALIFORNIA WATER SERVICE GP	97.939	149.072	150.197	52.809	46.686	44.980	51.911	96.011	101.125
ESSENTIAL UTILITIES, INC.	715.143	689.024	629.709	283.362	238.116	207.709	498.226	465.237	431.612
MIDDLESEX WATER CO	45.708	55.036	39.169	13.143	9.367	8.114	31.524	42.429	36.543
SJW GROUP	157.087	140.386	123.186	66.144	58.062	54.339	84.987	73.828	60.478
YORK WATER CO	32.081	24.709	23.030	7.047	5.114	4.926	23.757	19.580	16.984

Company Name	Gross Cash Flow			Total debt			CAPX		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
AMERICAN STATES WATER CO	172.958	122.896	137.882	917.883	734.428	629.017	188.540	166.240	144.515
AMERICAN WATER WORKS CO INC	1,832.000	1,535.000	2,119.000	12,455.000	12,455.000	11,065.000	2,575.000	2,297.000	1,764.000
ARTESIAN RESOURCES -CL A	31.418	30.882	30.266	181.063	198.307	172.029	62.177	48.483	40.814
CALIFORNIA WATER SERVICE GP	165.261	215.546	211.586	1,247.007	1,140.700	1,111.389	386.563	335.523	293.194
ESSENTIAL UTILITIES, INC.	745.109	739.704	700.258	7,108.766	6,874.589	6,114.443	1,199.103	1,062.763	1,020.519
MIDDLESEX WATER CO	55.556	69.024	61.981	412.306	366.948	330.618	90.179	91.335	79.378
SJW GROUP	181.715	172.320	149.679	1,747.174	1,655.903	1,595.037	271.772	218.784	233.933
YORK WATER CO	31.880	28.222	24.786	180.639	140.145	148.455	65.265	53.920	46.400

Company Name	Pretax Interest Coverage			Posttax Interest Coverage			GCF Interest Coverage		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
AMERICAN STATES WATER CO	4.9	4.8	6.5	3.9	3.9	5.1	5.0	5.5	7.0
AMERICAN WATER WORKS CO INC	3.6	3.3	5.1	3.1	2.9	4.1	5.0	4.5	6.3
ARTESIAN RESOURCES -CL A	3.5	3.8	4.0	2.8	3.1	3.2	4.4	4.6	5.0
CALIFORNIA WATER SERVICE GP	1.9	3.2	3.3	2.0	3.1	3.2	4.1	5.6	5.7
ESSENTIAL UTILITIES, INC.	2.5	2.9	3.0	2.8	3.0	3.1	3.6	4.1	4.4
MIDDLESEX WATER CO	3.5	5.9	4.8	3.4	5.5	5.5	5.2	8.4	8.6
SJW GROUP	2.4	2.4	2.3	2.3	2.3	2.1	3.7	4.0	3.8
YORK WATER CO	4.6	4.8	4.7	4.4	4.8	4.4	5.5	6.5	6.0
Median	3.5	3.6	4.4	3.0	3.1	3.7	4.7	5.1	5.9

Company Name	GCF To Debt			GCF To CAPX		
	2023	2022	2021	2023	2022	2021
AMERICAN STATES WATER CO	18.8	16.7	21.9	91.7	73.9	95.4
AMERICAN WATER WORKS CO INC	14.7	12.3	19.2	71.1	66.8	120.1
ARTESIAN RESOURCES -CL A	17.4	15.6	17.6	50.5	63.7	74.2
CALIFORNIA WATER SERVICE GP	13.3	18.9	19.0	42.8	64.2	72.2
ESSENTIAL UTILITIES, INC.	10.5	10.8	11.5	62.1	69.6	68.6
MIDDLESEX WATER CO	13.5	18.8	18.7	61.6	75.6	78.1
SJW GROUP	10.4	10.4	9.4	66.9	78.8	64.0
YORK WATER CO	17.6	20.1	16.7	48.8	52.3	53.4
Median	14.1	16.2	18.2	61.9	68.2	73.2

	2023	2022	2021
Pre-Tax Interest Coverage - Including AFC(3)(x)	3.5	3.6	4.4
Post-Tax Interest Coverage - Including AFC(3)(x)	3.0	3.1	3.7
GCF / Interest Coverage(4)(x)	4.7	5.1	5.9
GCF / Tot. Debt(7)(%)	14.1	16.2	18.2
GCF / Construction(6)(%)	61.9	68.2	73.2

Bulletin No. 199

1912 to January1, 2024

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

Trends of Construction Costs

COMPILED & PUBLISHED BY
Whitman, Requardt & Associates, LLP
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Baltimore, Maryland 21231
410-235-3450

	BCWSA			ACSA			CRWA		
	2023	**2022**	**2021**	**2023**	**2022**	**2021**	**2022**	**2021**	**2020**
NET Property, plant and equipment	540,008,150	536,640,274	458,738,341	976,534,842	828,595,274	708,595,336	259,108,984	238,929,570	224,285,248
Operating Income	16,596,456	17,210,783	19,882,598	107,595,279	99,605,915	91,358,404	21,732,619	24,357,342	19,083,482
ROR/N PPE	3.07%	3.21%	4.33%	11.02%	12.02%	12.89%	8.39%	10.19%	8.51%
3-Year Average	3.54%			11.98%			9.03%		
Median of Each Year		6.32%							
Median of Each Entity		6.02%							
Conclusion			6.17%						

	CHESTER WATER AUTHORITY			DELCORA			ERIE CITY WATER AUTHORITY			LASA*		
	2023	**2022**	**2021**	**2023**	**2022**	**2021**	**2022**	**2021**	**2020**	**2022**	**2021**	**2020**
NET Property, plant and equipment	287,868,153	286,754,067	285,180,639	331,393,541	322,410,805	276,768,326	236,455,664	213,346,735	200,008,941	152,872,595	146,644,636	147,014,498
Operating Income	(813,090)	682,966	3,560,108	21,426,788	21,552,339	19,062,611	15,544,238	17,164,895	13,461,619	7,872,136	8,029,263	6,069,056
ROR/N PPE	-0.28%	0.24%	1.25%	6.47%	6.68%	6.89%	6.57%	8.05%	6.73%	5.15%	5.48%	4.13%
3-Year Average	0.40%			6.68%			7.12%			4.92%		

* Fiscal year 3/31

Median of Each Year

Median of Each Entity

Conclusion

	RAWA			WCMA*			PITTSBURGH WATER & SEWER		
	2023	**2022**	**2021**	**2022**	**2021**	**2020**	**2023**	**2022**	**2021**
NET Property, plant and equipment	55,651,505	57,431,307	61,048,731	640,527,167	629,477,093	617,498,278	1,206,020,000	1,110,785,000	1,041,255,000
Operating Income	3,188,031	3,680,375	3,942,963	19,417,767	27,709,981	26,537,557	55,267,000	74,487,000	64,835,000
ROR/N PPE	5.73%	6.41%	6.46%	3.03%	4.40%	4.30%	4.58%	6.71%	6.23%
3-Year Average	6.20%			3.91%			5.84%		
					*Fiscal Year 3/31				
Median of Each Year									
Median of Each Entity									
Conclusion									

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2021 AND 2020

Assets and Deferred Outflows of Resources

	2021	2020
Assets:		
Current assets:		
Cash and cash equivalents	$ 256,262,201	$ 209,431,473
Accounts receivable:		
Billed sewer revenue	20,251,775	20,446,710
Unbilled sewer revenue	46,174,198	44,044,901
Other	145,244	4,734
Other current assets	6,736,857	6,634,434
Total current assets	329,570,275	280,562,252
Restricted/designated assets:		
Cash and cash equivalents	205,156,065	272,815,362
Total restricted/designated assets	205,156,065	272,815,362
Prepaid bond costs	5,333,878	5,815,062
Nondepreciable capital assets:		
Land	5,344,896	5,344,896
Construction in progress	170,406,333	94,302,298
Total nondepreciable capital assets	175,751,229	99,647,194
Depreciable capital assets - at cost, net of accumulated depreciation	532,844,107	543,854,942
Total	708,595,336	643,502,136
Net pension asset	1,680,266	-
Total Assets	1,250,335,820	1,202,694,812
Deferred Outflows of Resources:		
Related to pensions	26,830,110	27,581,534
Related to other post-retirement benefits	2,392,336	1,758,333
Refunding adjustment	4,682,815	5,247,763
Total Deferred Outflows of Resources	33,905,261	34,587,630
Total Assets and Deferred Outflows of Resources	$ 1,284,241,081	$ 1,237,282,442

Liabilities, Deferred Inflows of Resources, and Net Position

	2021	2020
Liabilities:		
Current liabilities:		
Accounts payable	$ 9,426,774	$ 2,927,005
Accounts payable - capital	11,618,234	3,165,967
Accrued liabilities:		
Compensated absences	5,640,410	5,950,167
Salaries and wages	2,064,530	1,985,019
Accrued interest on bonds	2,473,080	2,592,551
Reserve for litigation	2,371,900	2,371,900
Pretreatment advance payments	-	2,600
Current maturities of sewer revenue bonds	31,255,000	28,785,000
Total current liabilities	64,849,928	47,780,209
Long-term liabilities:		
Other post-employment benefits	14,074,940	13,901,968
Net pension liability	1,344,126	7,266,922
Sewer revenue bonds - less current maturities	639,240,000	670,495,000
Unamortized bond premium	62,134,271	67,960,993
Net long-term debt	701,374,271	738,455,993
Total long-term liabilities	716,793,337	759,624,883
Total Liabilities	781,643,265	807,405,092
Deferred Inflows of Resources:		
Related to pensions	28,103,085	25,133,372
Related to other post-retirement benefits	3,934,376	3,169,749
Total Deferred Inflows of Resources	32,037,461	28,303,121
Net Position:		
Net investment in capital assets	185,804,945	154,324,268
Unrestricted	283,075,144	247,249,961
Restricted - pension	1,680,266	-
Total Net Position	470,560,355	401,574,229
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 1,284,241,081	$ 1,237,282,442

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, 2021 AND 2020

	2021	2020
Operating Revenues	$ 197,355,657	$ 186,799,875
Operating Expenses:		
Treatment	50,925,066	50,981,608
Intercepting sewer systems	8,693,262	8,771,952
Upper Allegheny system	398,157	307,944
Administrative and engineering	16,108,332	15,682,596
Billing and collecting	4,052,673	4,461,391
Management information systems	4,088,595	4,071,959
Total operating expenses before depreciation	84,266,085	84,277,450
Operating Income Before Depreciation	113,089,572	102,522,425
Depreciation	21,731,168	22,374,952
Operating Income	91,358,404	80,147,473
Non-operating Revenues (Expenses):		
Interest income	100,243	2,002,687
Interest expense on bonds	(25,729,360)	(27,485,399)
Amortization of prepaid bond costs	(481,184)	(516,597)
Capital fees recognized	159,694	-
Loss on capital assets retired	-	(4,573,423)
Change in value of pension related items	3,881,925	(2,469,057)
Change in value of OPEB related items	(303,596)	(2,175,059)
Total non-operating revenues (expenses)	(22,372,278)	(35,216,848)
Change in Net Position	68,986,126	44,930,625
Net Position:		
Beginning of year	401,574,229	356,643,604
End of year	$ 470,560,355	$ 401,574,229

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2022 AND 2021

Assets and Deferred Outflows of Resources

	2022	2021
Assets:		
Current assets:		
Cash and cash equivalents	$ 311,516,031	$ 256,262,201
Accounts receivable:		
Billed sewer revenue	23,428,325	20,251,775
Unbilled sewer revenue	48,333,723	46,174,198
Other	84,200	145,244
Other current assets	6,943,836	6,736,857
Total current assets	390,306,115	329,570,275
Restricted/designated assets:		
Cash and cash equivalents	111,375,912	205,156,065
Investments	240,867,599	-
Accrued interest receivable	732,112	-
Total restricted/designated assets	352,975,623	205,156,065
Prepaid bond costs	6,953,344	5,333,878
Nondepreciable capital assets:		
Land	13,343,651	5,344,896
Construction in progress	197,768,039	170,406,333
Total nondepreciable capital assets	211,111,690	175,751,229
Depreciable capital assets - at cost, net of accumulated depreciation	617,483,584	532,844,107
Total	828,595,274	708,595,336
Net pension asset	24,141,265	1,680,266
Total Assets	1,602,971,621	1,250,335,820
Deferred Outflows of Resources:		
Related to pensions	20,709,578	26,830,110
Related to other post-retirement benefits	2,428,808	2,392,336
Refunding adjustment	4,170,832	4,682,815
Total Deferred Outflows of Resources	27,309,218	33,905,261
Total Assets and Deferred Outflows of Resources	$ 1,630,280,839	$ 1,284,241,081

Liabilities, Deferred Inflows of Resources, and Net Position

	2022	2021
Liabilities:		
Current liabilities:		
Accounts payable	$ 13,347,080	$ 9,426,774
Accounts payable - capital	9,294,858	11,618,234
Accrued liabilities:		
Compensated absences	5,274,999	5,640,410
Salaries and wages	2,138,052	2,064,530
Accrued interest on bonds	3,673,712	2,473,080
Reserve for litigation	2,371,900	2,371,900
Current maturities of sewer revenue bonds	32,830,000	31,255,000
Total current liabilities	68,930,601	64,849,928
Long-term liabilities:		
Other post-employment benefits	14,817,512	14,074,940
Net pension liability	-	1,344,126
Sewer revenue bonds - less current maturities	873,560,000	639,240,000
Unamortized bond premium	72,852,963	62,134,271
Net long-term debt	946,412,963	701,374,271
Total long-term liabilities	961,230,475	716,793,337
Total Liabilities	1,030,161,076	781,643,265
Deferred Inflows of Resources:		
Related to pensions	36,738,124	28,103,085
Related to other post-retirement benefits	3,444,236	3,934,376
Total Deferred Inflows of Resources	40,182,360	32,037,461
Net Position:		
Net investment in capital assets	206,498,766	185,804,945
Unrestricted	329,297,372	283,075,144
Restricted - pension	24,141,265	1,680,266
Total Net Position	559,937,403	470,560,355
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 1,630,280,839	$ 1,284,241,081

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, 2022 AND 2021

	2022	2021
Operating Revenues	$ 211,516,526	$ 197,355,657
Operating Expenses:		
Treatment	54,028,555	50,925,066
Intercepting sewer systems	10,592,060	8,693,262
Upper Allegheny system	429,310	398,157
Administrative and engineering	16,662,143	16,108,332
Billing and collecting	4,333,268	4,052,673
Management information systems	4,393,392	4,088,595
Total operating expenses before depreciation	90,438,728	84,266,085
Operating Income Before Depreciation	121,077,798	113,089,572
Depreciation	21,471,883	21,731,168
Operating Income	99,605,915	91,358,404
Non-operating Revenues (Expenses):		
Intergovernmental grants	247,500	-
Interest income	7,049,207	100,243
Interest expense on bonds	(25,903,240)	(25,729,360)
Amortization of prepaid bond costs	(455,928)	(481,184)
Capital fees recognized	-	159,694
Change in value of pension related items	9,049,554	3,881,925
Change in value of OPEB related items	(215,960)	(303,596)
Total non-operating revenues (expenses)	(10,228,867)	(22,372,278)
Change in Net Position	89,377,048	68,986,126
Net Position:		
Beginning of year	470,560,355	401,574,229
End of year	$ 559,937,403	$ 470,560,355

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2023 AND 2022

Assets and Deferred Outflows of Resources

	2023	2022
Assets:		
Current assets:		
Cash and cash equivalents	$ 382,535,262	$ 311,516,031
Accounts receivable:		
Billed sewer revenue	23,638,302	23,428,325
Unbilled sewer revenue	51,387,922	48,333,723
Other	30,626	84,200
Other current assets	7,217,236	6,943,836
Total current assets	464,809,348	390,306,115
Restricted/designated assets:		
Cash and cash equivalents	178,954,345	111,375,912
Investments	21,883,846	240,867,599
Accrued interest receivable	55,339	732,112
Total restricted/designated assets	200,893,530	352,975,623
Prepaid bond costs	6,418,365	6,953,344
Nondepreciable capital assets:		
Land	23,110,313	13,343,651
Construction in progress	299,726,893	197,768,039
Total nondepreciable capital assets	322,837,206	211,111,690
Depreciable capital assets - at cost, net of accumulated depreciation	653,697,636	617,483,584
Total	976,534,842	828,595,274
Net pension asset	-	24,141,265
Total Assets	1,648,656,085	1,602,971,621
Deferred Outflows of Resources:		
Related to pensions	60,980,053	20,709,578
Related to other post-retirement benefits	2,272,198	2,428,808
Refunding adjustment	3,714,432	4,170,832
Total Deferred Outflows of Resources	66,966,683	27,309,218
Total Assets and Deferred Outflows of Resources	$ 1,715,622,768	$ 1,630,280,839

Liabilities, Deferred Inflows of Resources, and Net Position

	2023	2022
Liabilities:		
Current liabilities:		
Accounts payable	$ 16,132,729	$ 13,347,080
Accounts payable - capital	15,205,717	9,294,858
Accrued liabilities:		
Compensated absences	4,985,334	5,274,999
Salaries and wages	2,418,572	2,138,052
Accrued interest on bonds	3,401,697	3,673,712
Reserve for litigation	2,365,905	2,371,900
Current maturities of sewer revenue bonds	31,490,000	32,830,000
Total current liabilities	75,999,954	68,930,601
Long-term liabilities:		
Other post-employment benefits	11,203,983	14,817,512
Net pension liability	29,541,132	-
Sewer revenue bonds - less current maturities	842,070,000	873,560,000
Unamortized bond premium	66,935,029	72,852,963
Net long-term debt	909,005,029	946,412,963
Total long-term liabilities	949,750,144	961,230,475
Total Liabilities	1,025,750,098	1,030,161,076
Deferred Inflows of Resources:		
Related to pensions	25,868,844	36,738,124
Related to other post-retirement benefits	6,658,653	3,444,236
Total Deferred Inflows of Resources	32,527,497	40,182,360
Net Position:		
Net investment in capital assets	240,647,775	206,498,766
Unrestricted	416,697,398	329,297,372
Restricted - pension	-	24,141,265
Total Net Position	657,345,173	559,937,403
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 1,715,622,768	$ 1,630,280,839

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, 2023 AND 2022

	2023	2022
Operating Revenues	$ 225,649,201	$ 211,516,526
Operating Expenses:		
Treatment	57,357,729	54,028,555
Intercepting sewer systems	11,238,294	10,592,060
Upper Allegheny system	471,611	429,310
Administrative and engineering	18,510,806	16,662,143
Billing and collecting	4,322,436	4,333,268
Management information systems	4,332,080	4,393,392
Total operating expenses before depreciation	96,232,956	90,438,728
Operating Income Before Depreciation	129,416,245	121,077,798
Depreciation	21,820,966	21,471,883
Operating Income	107,595,279	99,605,915
Non-Operating Revenues (Expenses):		
Intergovernmental grants	-	247,500
Interest income	30,149,114	7,049,207
Interest expense on bonds	(37,501,503)	(25,903,240)
Amortization of prepaid bond costs	(534,980)	(455,928)
Change in value of pension related items	(2,542,642)	9,049,554
Change in value of OPEB related items	242,502	(215,960)
Total non-operating revenues (expenses)	(10,187,509)	(10,228,867)
Change in Net Position	97,407,770	89,377,048
Net Position:		
Beginning of year	559,937,403	470,560,355
End of year	$ 657,345,173	$ 559,937,403

The notes to financial statements are an integral part of this statement.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
ASSETS		
Current Assets		
Cash and Cash Equivalents	$ 6,432,360	$ 5,872,075
Investments	17,874,746	17,122,426
Accounts Receivable, Net of Allowance for Doubtful Accounts	2,117,621	8,310,705
Unbilled Revenue Receivable	10,372,592	9,768,802
Prepaid Expenses	360,952	729,044
Total Current Assets	37,158,271	41,803,052
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,228,837	3,617,503
Investments	102,212,622	63,732,897
Interest Receivable	1,121,119	920,477
Total Restricted Assets	106,562,578	68,270,877
Net Pension Asset	8,271,425	-
Net OPEB Asset	1,380,862	-
Capital Assets		
Land, Rights-of-Way and Construction in Progress	93,684,793	81,292,208
Other Capital Assets, Net of Accumulated Depreciation	365,053,548	376,251,860
Total Capital Assets, Net	458,738,341	457,544,068
Total Non-Current Assets	565,300,919	525,814,945
Total Assets	612,111,477	567,617,997
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	6,844,887	7,790,319
Pension: Changes in Assumptions	394,071	591,106
Pension: Difference Between Expected and Actual Experience	615,126	805,127
Pension: Difference Between Projected and Actual Earnings on Investments	-	1,691,386
Pension: Contributions Made Subsequent to Measurement Date	1,404,507	4,326,752
OPEB: Difference Between Expected and Actual Experience	17,483	26,180
Total Deferred Outflows of Resources	9,276,074	15,230,870
LIABILITIES AND NET POSITION		
Current Liabilities		
Accounts Payable and Accrued Expenses	10,097,700	12,749,312
Current Portion of Bonds Payable	23,230,000	22,375,000
Interest Payable	731,832	745,039
Total Current Liabilities	34,059,532	35,869,351
Non-Current Liabilities		
Customer and Developer Deposits	3,240,339	3,613,254
Bonds Payable, Net of Unamortized Bond Discount and Premium	248,092,224	223,030,306
Line of Credit	34,191	-
Net Pension Liability	-	1,880,256
Net OPEB Liability	-	4,026,011
Total Non-Current Liabilities	251,366,754	232,549,827
Total Liabilities	285,426,286	268,419,178
Deferred Inflows of Resources		
Pension: Changes in Assumptions	21,411	32,118
Pension: Difference Between Projected and Actual Earnings on Investments	4,388,041	-
OPEB: Changes in Assumptions	169,859	241,345
OPEB: Difference Between Projected and Actual Earnings on Investments	42,467	86,429
OPEB: Difference Between Expected and Actual Experience	1,210,371	-
Proceeds from Sale of Future Revenues	3,622,933	3,795,454
Total Deferred Inflows of Resources	9,455,082	4,155,346
Net Position		
Net Investment in Capital Assets	201,178,213	229,523,791
Restricted for Capital Activity	54,384,207	15,719,591
Restricted for Debt Service	31,553,004	31,553,004
Unrestricted	39,390,759	33,477,957
Total Net Position	$ 326,506,183	$ 310,274,343

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, 2021 AND 2020

	2021	2020
Operating Revenues		
Retail Sewer Service	$ 55,151,489	$ 54,861,161
Wholesale Sewer Service	14,937,200	14,337,247
Retail Water Service	12,474,575	11,747,314
Wholesale Water Service	4,208,255	4,663,441
Improvement and Tapping Fees	435,475	263,705
Other Revenues	5,090,592	3,557,822
Total Operating Revenues	92,297,586	89,430,690
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	21,056,048	19,678,584
Water Procurement	5,713,269	5,736,644
Total Sewage Treatment and Water Procurement	26,769,317	25,415,228
Plant Operations		
Payroll and Related Costs	2,692,828	2,732,227
Repairs and Maintenance	1,942,332	1,945,504
Electricity	448,383	521,131
Water and Sewage Testing	317,490	249,680
Total Plant Operations	5,401,033	5,448,542
Collection, Transmission and Distribution Service		
Payroll and Related Costs	7,678,484	8,845,809
Repairs and Maintenance	2,640,708	3,084,311
Electricity	1,021,448	885,701
Other Related Costs	223,666	216,408
Total Collection, Transmission and Distribution Service	11,564,306	13,032,229
Total Operating Expenses	43,734,656	43,895,999
General and Administrative Expenses		
Payroll and Related Costs	4,143,623	4,412,980
Professional Fees	2,499,480	2,329,876
Insurance	556,650	497,923
Other	2,867,918	2,382,465
Total General and Administrative Expense	10,067,671	9,623,244
Total Expenses	53,802,327	53,519,243
Income From Operations Before Depreciation	38,495,259	35,911,447
Depreciation	(18,612,661)	(17,966,462)
Operating Income	19,882,598	17,944,985
Nonoperating Revenue (Expense)		
Interest Expense, Net of Amounts Capitalized	(8,423,982)	(7,770,635)
Investment Income	474,617	628,113
Improvement and Tapping Fees	4,722,418	1,821,485
Amortization	(476,546)	(253,291)
Total Nonoperating Expense	(3,703,493)	(5,574,328)
Increase In Net Position Before Contributed Capital	16,179,105	12,370,657
Contributed Capital	52,735	-
Increase in Net Position	16,231,840	12,370,657
Net Position - Beginning of Year	310,274,343	297,903,686
Net Position - End of Year	$ 326,506,183	$ 310,274,343

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
YEARS ENDED DECEMBER 31, 2022 AND 2021

	2022	2021
ASSETS		
Current Assets		
Cash and Cash Equivalents	$ 2,499,078	$ 6,432,360
Investments	17,248,047	17,874,746
Accounts Receivable, Net of Allowance for Doubtful Accounts	1,814,619	2,117,621
Unbilled Revenue Receivable	10,292,003	10,372,592
Prepaid Expenses	408,111	360,952
Total Current Assets	32,261,858	37,158,271
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	2,955,980	3,228,837
Investments	222,607,789	102,212,622
Interest Receivable	1,677,958	1,121,119
Total Restricted Assets	227,241,727	106,562,578
Net Pension Asset	14,969,897	8,271,425
Net OPEB Asset	123,382	1,380,862
Capital Assets		
Land, Rights-of-Way and Construction in Progress	119,858,159	93,684,793
Other Capital Assets, Net of Accumulated Depreciation	416,782,115	365,053,548
Total Capital Assets, Net	536,640,274	458,738,341
Total Non-Current Assets	763,882,001	565,300,919
Total Assets	811,237,138	612,111,477
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	6,006,582	6,844,887
Pension: Changes in Assumptions	363,476	394,071
Pension: Difference Between Expected and Actual Experience	1,301,548	615,126
Pension: Difference Between Projected and Actual Earnings on Investments	-	-
Pension: Contributions Made Subsequent to Measurement Date	1,342,657	1,404,507
OPEB: Difference Between Projected and Actual Earnings on Investments	853,556	-
OPEB: Difference Between Expected and Actual Experience	103,823	17,483
Total Deferred Outflows of Resources	9,971,642	9,276,074
LIABILITIES AND NET POSITION		
Current Liabilities		
Accounts Payable and Accrued Expenses	10,920,922	10,097,700
Current Portion of Bonds Payable	17,173,000	23,230,000
Interest Payable	1,831,417	731,832
Total Current Liabilities	29,925,339	34,059,532
Non-Current Liabilities		
Customer and Developer Deposits	2,872,771	3,240,339
Bonds Payable, Net of Unamortized Bond Discount and Premium	434,474,548	248,092,224
Line of Credit	282,123	34,191
Net Pension Liability	-	-
Net OPEB Liability	-	-
Total Non-Current Liabilities	437,629,442	251,366,754
Total Liabilities	467,554,781	285,426,286
Deferred Inflows of Resources		
Pension: Changes in Assumptions	-	21,411
Pension: Difference Between Projected and Actual Earnings on Investments	10,558,960	4,388,041
OPEB: Changes in Assumptions	87,542	169,859
OPEB: Difference Between Projected and Actual Earnings on Investments	-	42,467
OPEB: Difference Between Expected and Actual Experience	912,983	1,210,371
Proceeds from Sale of Future Revenues	3,622,933	3,622,933
Total Deferred Inflows of Resources	15,182,418	9,455,082
Net Position		
Net Investment in Capital Assets	279,739,588	201,178,213
Restricted for Capital Activity	10,832,631	54,384,207
Restricted for Debt Service	30,091,903	31,553,004
Unrestricted	17,807,459	39,390,759
Total Net Position	$ 338,471,581	$ 326,506,183

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, 2022 AND 2021

	2022	2021
Operating Revenues		
Retail Sewer Service	$ 56,053,277	$ 55,151,489
Wholesale Sewer Service	13,089,053	14,937,200
Retail Water Service	12,112,909	12,474,575
Wholesale Water Service	4,388,017	4,208,255
Improvement and Tapping Fees	1,298,050	435,475
Other Revenues	3,614,871	5,090,592
Total Operating Revenues	90,556,177	92,297,586
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	19,467,392	21,056,048
Water Procurement	5,965,165	5,713,269
Total Sewage Treatment and Water Procurement	25,432,557	26,769,317
Plant Operations		
Payroll and Related Costs	2,878,756	2,692,828
Repairs and Maintenance	2,569,969	1,942,332
Electricity	459,108	448,383
Water and Sewage Testing	287,226	317,490
Total Plant Operations	6,195,059	5,401,033
Collection, Transmission and Distribution Service		
Payroll and Related Costs	6,837,299	7,678,484
Repairs and Maintenance	2,883,152	2,640,708
Electricity	983,945	1,021,448
Other Related Costs	288,202	223,666
Total Collection, Transmission and Distribution Service	10,992,598	11,564,306
Total Operating Expenses	42,620,214	43,734,656
General and Administrative Expenses		
Payroll and Related Costs	3,738,609	4,143,623
Professional Fees	2,258,136	2,499,480
Insurance	713,750	556,650
Other	2,935,796	2,867,918
Total General and Administrative Expense	9,646,291	10,067,671
Total Expenses	52,266,505	53,802,327
Income From Operations Before Depreciation	38,289,672	38,495,259
Depreciation	(21,078,889)	(18,612,661)
Operating Income	17,210,783	19,882,598
Nonoperating Revenue (Expense)		
Interest Expense, Net of Amounts Capitalized	(9,749,173)	(8,423,982)
Investment Income	1,921,363	474,617
Improvement and Tapping Fees	2,582,427	4,722,418
Amortization	-	(476,546)
Total Nonoperating Expense	(5,245,383)	(3,703,493)
Increase In Net Position Before Contributed Capital	11,965,400	16,179,105
Contributed Capital	-	52,735
Increase in Net Position	11,965,400	16,231,840
Net Position - Beginning of Year	326,506,183	310,274,343
Net Position - End of Year	$ 338,471,583	$ 326,506,183

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
YEARS ENDED DECEMBER 31, 2023 AND 2022

	2023	2022
ASSETS		
Current Assets		
Cash and Cash Equivalents	$ 2,440,109	$ 2,499,078
Investments	15,766,106	17,248,047
Accounts Receivable, Net of Allowance for Doubtful Accounts	8,442,736	1,814,619
Unbilled Revenue Receivable	10,842,556	10,292,003
Prepaid Expenses	2,380,972	408,111
Total Current Assets	39,872,479	32,261,858
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,129,508	2,955,980
Investments	217,825,182	222,607,789
Interest Receivable	1,943,898	1,677,958
Total Restricted Assets	222,898,588	227,241,727
Net Pension Asset	-	14,969,897
Net OPEB Asset	1,552,496	123,382
Capital Assets		
Land, Rights-of-Way and Construction in Progress	136,786,758	119,858,159
Other Capital Assets, Net of Accumulated Depreciation	403,221,392	416,782,115
Total Capital Assets, Net	540,008,150	536,640,274
Total Non-Current Assets	764,459,234	778,975,280
Total Assets	804,331,713	826,330,417
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	5,261,229	6,006,584
Pension: Changes in Assumptions	272,607	363,476
Pension: Difference Between Expected and Actual Experience	2,991,523	1,301,548
Pension: Difference Between Projected and Actual Earnings on Investments	2,768,344	-
Pension: Contributions Made Subsequent to Measurement Date	3,665,364	1,342,657
OPEB: Difference Between Projected and Actual Earnings on Investments	-	853,556
OPEB: Difference Between Expected and Actual Experience	459,263	103,823
Total Deferred Outflows of Resources	15,418,330	9,971,644
LIABILITIES AND NET POSITION		
Current Liabilities		
Accounts Payable and Accrued Expenses	12,136,667	10,920,922
Current Portion of Note Payable	305,972	-
Current Portion of Bonds Payable	18,928,000	17,173,000
Interest Payable	1,050,318	1,831,418
Total Current Liabilities	32,420,957	29,925,340
Non-Current Liabilities		
Customer and Developer Deposits	2,862,316	2,872,771
Note Payable, Net of Current Portion	9,450,376	-
Bonds Payable, Net of Unamortized Bond Discount and Premium	413,835,533	434,474,548
Line of Credit	-	282,123
Net Pension Liability	1,157,469	-
Total Non-Current Liabilities	427,305,694	437,629,442
Total Liabilities	459,726,651	467,554,782
Deferred Inflows of Resources		
Pension: Difference Between Projected and Actual Earnings on Investments	-	10,558,960
OPEB: Changes in Assumptions	907,009	87,542
OPEB: Difference Between Projected and Actual Earnings on Investments	617,646	-
OPEB: Difference Between Expected and Actual Experience	-	912,983
Proceeds from Sale of Future Revenues	3,277,891	3,622,933
Total Deferred Inflows of Resources	4,802,546	15,182,418
Net Position		
Net Investment in Capital Assets	168,969,226	279,739,588
Restricted for Capital Activity	155,033,771	10,832,632
Restricted for Debt Service	33,949,869	30,091,903
Unrestricted (Deficit)	(2,732,020)	17,807,459
Total Net Position	$ 355,220,846	$ 338,471,582

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, 2023 AND 2022

	2023	2022
Operating Revenues		
Retail Sewer Service	$ 61,051,538	$ 56,053,277
Wholesale Sewer Service	15,968,805	13,089,053
Retail Water Service	12,806,653	12,112,909
Wholesale Water Service	4,390,343	4,388,017
Improvement and Tapping Fees	233,090	1,298,050
Other Revenues	4,333,498	3,614,871
Total Operating Revenues	98,783,927	90,556,177
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	21,499,275	19,467,392
Water Procurement	5,582,443	5,965,165
Total Sewage Treatment and Water Procurement	27,081,718	25,432,557
Plant Operations		
Payroll and Related Costs	3,567,877	2,878,756
Repairs and Maintenance	3,263,557	2,569,969
Electricity	414,119	459,108
Water and Sewage Testing	422,475	287,226
Total Plant Operations	7,668,028	6,195,059
Collection, Transmission and Distribution Service		
Payroll and Related Costs	8,899,132	6,837,299
Repairs and Maintenance	3,514,979	2,883,152
Electricity	1,225,008	983,945
Other Related Costs	336,699	288,202
Total Collection, Transmission and Distribution Service	13,975,818	10,992,598
Total Operating Expenses	48,725,564	42,620,214
General and Administrative Expenses		
Payroll and Related Costs	3,891,114	3,738,609
Professional Fees	1,985,039	2,258,136
Insurance	1,110,595	713,750
Other	3,835,502	2,935,796
Total General and Administrative Expense	10,822,250	9,646,291
Total Expenses	59,547,814	52,266,505
Income From Operations Before Depreciation	39,236,113	38,289,672
Depreciation	(22,639,657)	(21,078,889)
Operating Income	16,596,456	17,210,783
Nonoperating Revenue (Expense)		
Interest Expense, Net of Amounts Capitalized	(16,011,716)	(9,749,172)
Investment Income	11,742,363	1,921,363
Improvement and Tapping Fees	4,422,162	2,582,425
Total Nonoperating Expense	152,809	(5,245,384)
Increase In Net Position	16,749,265	11,965,399
Net Position - Beginning of Year	338,471,581	326,506,183
Net Position - End of Year	$ 355,220,846	$ 338,471,582

See accompanying notes to the financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2021 and 2020

Assets and Deferred Outflows of Resources

	December 31, 2021	December 31, 2020
Current Assets		
Cash and cash equivalents	$ 19,728,089	$ 15,530,656
Accounts receivable, net of allowance for doubtful accounts of $300,000 in both 2020 and 2019	6,854,771	6,430,271
Unbilled revenue	4,765,392	4,654,512
Materials and supplies	3,444,198	3,960,894
Other current assets	144,416	144,954
Total Current Assets	34,936,866	30,721,287
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	285,180,639	280,862,318
Total Non-Current Assets	285,180,639	280,862,318
Restricted Assets		
Cash and cash equivalents	13,952,651	23,092,782
Total Restricted Assets	13,952,651	23,092,782
Total Assets	334,070,156	334,676,387
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	12,765,793	8,625,661
Changes in OPEB investment returns and actuarial assumptions	2,660,741	1,822,033
Total Deferred Outflows of Resources	15,426,534	10,447,694
Total Assets and Deferred Outflows of Resources	$ 349,496,690	$ 345,124,081

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2021 and 2020

	December 31, 2021	December 31, 2020
Operating Revenues		
Residential	$ 16,899,827	$ 17,121,643
Commercial	7,125,290	6,768,994
Industrial	9,004,424	9,367,380
Fire protection	4,290,826	4,295,482
Capacity charges, flat and late fee revenues	516,504	520,960
Sales to other water utilities	6,980,638	7,166,136
Total Operating Revenues	44,817,509	45,240,595
Operating Expenses		
Purification and Pumping	8,304,031	7,593,847
Distribution	7,334,492	6,454,917
Administrative	12,895,219	12,980,171
Finance/customer service, billing and collections	3,574,232	3,994,762
Depreciation	9,149,427	9,287,985
Total Operating Expenses	41,257,401	40,311,682
Operating Income	3,560,108	4,928,913
Non-Operating Revenues/(Expenses)		
Actuarial changes for OPEB and pension	(1,743,358)	(804,757)
Net investment income	136,156	254,729
Interest expense	(3,032,935)	(3,209,698)
Other nonoperating revenues	275,427	267,789
Amortization of bond discounts and debt issuance costs	502,180	549,445
Gain (loss) on disposal of property and equipment	46,789	11,160
Total Non-Operating Revenues/(Expenses)	(3,815,741)	(2,931,332)
Income Before Contributions	(255,633)	1,997,581
Capital Contributions	1,800,147	2,911
Change In Net Position	1,544,514	2,000,492
Net Position - Beginning of year	240,073,508	238,073,016
Net Position - End of year	$ 241,618,022	$ 240,073,508

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2022 and 2021

Assets and Deferred Outflows of Resources

	December 31, 2022	December 31, 2021
Current Assets		
Cash and cash equivalents	$ 19,396,127	$ 19,728,089
Accounts receivable, net of allowance for doubtful accounts of $412,168 and $300,000 2022 and 2021	9,014,961	6,854,771
Unbilled revenue	4,824,012	4,765,392
Materials and supplies	3,665,397	3,444,198
Other current assets	185,425	144,416
Total Current Assets	37,085,922	34,936,866
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	286,653,987	285,180,639
Right of use asset	100,080	-
Total Non-Current Assets	286,754,067	285,180,639
Restricted Assets		
Cash and cash equivalents	24,434,336	13,952,651
Total Restricted Assets	24,434,336	13,952,651
Total Assets	348,274,325	334,070,156
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	14,721,139	12,765,793
Changes in OPEB investment returns and actuarial assumptions	2,911,564	2,660,741
Total Deferred Outflows of Resources	17,632,703	15,426,534
Total Assets and Deferred Outflows of Resources	$ 365,907,028	$ 349,496,690

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2022 and 2021

	December 31, 2022	December 31, 2021
Operating Revenues		
Residential	$ 17,866,610	$ 16,899,827
Commercial	7,816,426	7,125,290
Industrial	9,642,989	9,004,424
Fire protection	4,463,708	4,290,826
Capacity charges, flat and late fee revenues	460,147	516,504
Sales to other water utilities	4,379,246	6,980,638
Total Operating Revenues	44,629,126	44,817,509
Operating Expenses		
Purification and Pumping	9,978,367	8,304,031
Distribution	8,119,945	7,334,492
Administrative	13,338,620	12,895,219
Finance/customer service, billing and collections	3,332,798	3,574,232
Depreciation	9,176,430	9,149,427
Total Operating Expenses	43,946,160	41,257,401
Operating Income	682,966	3,560,108
Non-Operating Revenues/(Expenses)		
Actuarial changes for OPEB and pension	(3,958,644)	(1,743,358)
Net investment income	196,553	136,156
Interest expense	(3,417,547)	(3,032,935)
Other nonoperating revenues	938,288	275,427
Amortization of bond discounts and debt issuance costs	489,835	502,180
Gain (loss) on disposal of property and equipment	-	46,789
Total Non-Operating Revenues/(Expenses)	(5,751,515)	(3,815,741)
Loss Before Contributions	(5,068,549)	(255,633)
Capital Contributions	1,686,616	1,800,147
Change In Net Position	(3,381,933)	1,544,514
Net Position - Beginning of year	241,618,022	240,073,508
Net Position - End of year	$ 238,236,089	$ 241,618,022

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2023 and 2022

	2023	2022
Assets and Deferred Outflows of Resources		
Assets		
Current Assets		
Cash and cash equivalents	$ 16,186,527	$ 19,396,127
Accounts receivable, net of allowance for credit losses of $713,850 and $412,168 for 2023 and 2022	8,966,040	9,014,961
Unbilled revenue	4,870,076	4,824,012
Materials and supplies	3,326,824	3,665,397
Other current assets	338,957	185,425
Total Current Assets	33,688,424	37,085,922
Non-Current Assets		
Property, plant, and equipment—net of accumulated depreciation	287,802,943	286,653,987
Right of use asset - operating leases	65,210	100,080
Total Non-Current Assets	287,868,153	286,754,067
Restricted Assets		
Cash and cash equivalents	20,366,893	24,434,336
Total Restricted Assets	20,366,893	24,434,336
Total Assets	341,923,470	348,274,325
Deferred Outflows of Resources		
Changes in pension investment returns and actuarial assumptions	8,661,367	14,721,139
Changes in OPEB investment returns and actuarial assumptions	1,702,184	2,911,564
Total Deferred Outflows of Resources	10,363,551	17,632,703
Total Assets and Deferred Outflows of Resources	$ 352,287,021	$ 365,907,028

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2023 and 2022

	2023	2022
Operating Revenues		
Residential	$ 18,718,420	$ 17,866,610
Commercial	7,917,233	7,816,426
Industrial	9,652,062	9,642,989
Fire protection	4,552,198	4,463,708
Capacity charges, flat and late fee revenues	1,299,777	460,147
Sales to other water utilities	3,875,439	4,379,246
Total Operating Revenues	46,015,129	44,629,126
Operating Expenses		
Purification and Pumping	10,178,290	9,978,367
Distribution	7,758,826	8,119,945
Administrative	14,556,591	13,338,620
Finance/customer service, billing and collections	4,592,742	3,332,798
Depreciation	9,741,770	9,176,430
Total Operating Expenses	46,828,219	43,946,160
Operating Income (Loss)	(813,090)	682,966
Non-Operating Revenues/(Expenses)		
Actuarial changes for OPEB and pension	(970,730)	(3,958,644)
Net investment income	819,966	196,553
Interest expense	(3,395,113)	(3,417,547)
Other nonoperating revenues	272,803	938,288
Amortization of bond discounts and debt issuance costs	639,566	489,835
Total Non-Operating Revenues/(Expenses), net	(2,633,508)	(5,751,515)
Loss Before Capital Contributions	(3,446,598)	(5,068,549)
Capital Contributions	620,063	1,686,616
Change In Net Position	(2,826,535)	(3,381,933)
Net Position - Beginning of year	238,236,089	241,618,022
Net Position - End of year	$ 235,409,554	$ 238,236,089

See accompanying notes to financial statements.

CAPITAL REGION WATER

BALANCE SHEETS

DECEMBER 31, 2020 AND 2019

Assets and Deferred Outflows of Resources	2020	2019
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

	2020	2019
Operating Revenues:		
User charges	$ 46,053,281	$ 47,556,016
Total operating revenues	46,053,281	47,556,016
Operating Expenses:		
Operating	15,078,242	14,776,480
Administrative	5,832,986	5,788,495
Depreciation	6,058,571	5,654,952
Total operating expenses	26,969,799	26,219,927
Operating Income	19,083,482	21,336,089
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	(5,725,558)	(5,836,796)
Total non-operating revenues (expenses)	(4,006,587)	(2,886,107)
Change in Net Position	15,076,895	18,449,982
Net Position:		
Beginning of year	94,622,873	76,172,891
End of year	$109,699,768	$ 94,622,873

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

BALANCE SHEETS

DECEMBER 31, 2021 AND 2020

Assets and Deferred Outflows of Resources	2021	2020
Assets:		
Current assets:		
Cash and cash equivalents	$ 33,460,091	$ 33,125,086
Accounts receivable, net of allowance for uncollectible accounts of $6,528,063 and $6,812,663	12,970,971	12,990,450
Grants receivable	470,408	207,125
Due from the City of Harrisburg	3,154,272	3,247,428
Prepaid expenses	499,149	631,891
Inventory	389,700	226,727
Total current assets	50,944,591	50,428,707
Restricted assets:		
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	9,982,127	10,339,323
Investments - restricted under trust indentures	18,706,514	19,133,382
Total restricted assets	28,688,641	29,472,705
Noncurrent assets:		
Capital assets, not being depreciated	47,399,049	41,304,196
Capital assets, net of accumulated depreciation of $144,683,414 and $138,312,983	191,530,521	182,981,052
Net pension asset	2,269,724	793,994
Total noncurrent assets	241,199,294	225,079,242
Total Assets	320,832,526	304,980,654
Deferred Outflows of Resources:		
Deferred loss on refunding	5,432,538	6,138,866
Deferred outflows of resources for other postemployment benefits	264,303	154,587
Deferred outflows of resources for pension	950,272	1,018,573
Total Deferred Outflows of Resources	6,647,113	7,312,026
Total Assets and Deferred Outflows of Resources	$ 327,479,639	$ 312,292,680

CAPITAL REGION WATER

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2021 AND 2020

	2021	2020
Operating Revenues:		
User charges	$ 52,548,506	$ 46,053,281
Total operating revenues	52,548,506	46,053,281
Operating Expenses:		
Operating	16,094,648	15,078,242
Administrative	5,686,814	5,832,986
Depreciation	6,409,702	6,058,571
Total operating expenses	28,191,164	26,969,799
Operating Income	24,357,342	19,083,482
Non-Operating Revenues (Expenses):		
Investment income	75,084	426,489
Grant revenue	263,283	177,024
Gain on sale of easements	-	191,516
Miscellaneous income (expense)	975,524	921,942
Gain (loss) on disposal of capital assets	-	2,000
Interest expense	(5,617,642)	(5,725,558)
Total non-operating revenues (expenses)	(4,303,751)	(4,006,587)
Change in Net Position	20,053,591	15,076,895
Net Position:		
Beginning of year	$109,699,768	$ 94,622,873
End of year	$129,753,359	$109,699,768

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

BALANCE SHEETS

DECEMBER 31, 2022 AND 2021

Assets and Deferred Outflows of Resources	2022	2021
Assets:		
Current assets:		
Cash and cash equivalents	$ 25,410,234	$ 33,460,091
Investments	5,000,000	-
Accounts receivable, net of allowance for uncollectible accounts of $7,465,495 and $6,528,063	11,386,611	12,970,971
Grants receivable	-	470,408
Current portion of lease receivable	47,672	46,162
Due from the City of Harrisburg	3,110,046	3,154,272
Prepaid expenses	512,306	499,149
Inventory	420,144	389,700
Total current assets	45,887,013	50,990,753
Restricted assets:		
Cash and cash equivalents - restricted under trust indentures and guarantee agreement	10,211,157	9,982,127
Investments - restricted under trust indentures	18,883,549	18,706,514
Total restricted assets	29,094,706	28,688,641
Noncurrent assets:		
Lease receivable, net of current portion	3,574,845	3,622,517
Capital assets, not being depreciated	53,883,822	47,399,049
Capital assets, net of accumulated depreciation of $151,267,081 and $144,683,414	201,650,317	191,530,521
Net pension asset	2,159,758	2,269,724
Total noncurrent assets	261,268,742	244,821,811
Total Assets	336,250,461	324,501,205
Deferred Outflows of Resources:		
Deferred loss on refunding	4,731,128	5,432,538
Deferred outflows of resources for other postemployment benefits	218,185	264,303
Deferred outflows of resources for pension	1,771,949	950,272
Total Deferred Outflows of Resources	6,721,262	6,647,113
Total Assets and Deferred Outflows of Resources	$ 342,971,723	$ 331,148,318

CAPITAL REGION WATER

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2022 AND 2021

	2022	2021
Operating Revenues:		
User charges	$ 53,517,987	$ 52,548,506
Total operating revenues	53,517,987	52,548,506
Operating Expenses:		
Operating	19,139,084	16,094,648
Administrative	5,989,706	5,686,814
Depreciation	6,656,578	6,409,702
Total operating expenses	31,785,368	28,191,164
Operating Income	21,732,619	24,357,342
Non-Operating Revenues (Expenses):		
Investment income	493,957	75,084
Grant revenue	279,442	263,283
Miscellaneous income (expense)	310,431	974,028
Gain (loss) on disposal of capital assets	89,272	-
Lease principal revenue	114,049	26,281
Lease interest revenue	2,918	1,719
Interest expense	(5,503,238)	(5,617,642)
Total non-operating revenues (expenses)	(4,213,169)	(4,277,247)
Change in Net Position	17,519,450	20,080,095
Net Position:		
Beginning of year, restated	129,779,863	109,699,768
End of year	$147,299,313	$129,779,863

The accompanying notes are an integral part of these financial statements.

DELAWARE COUNTY REGIONAL WATER QUALITY
CONTROL AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31,

	2021	2020
ASSETS		
Current:		
Cash and cash equivalents	$ 86,690,610	$ 89,049,989
Investments	1,102,135	2,162,546
Receivables:		
Western Region		
Residental, net of allowance for doubtful accounts of $909,826 and $544,202 in 2021 and 2020, respectively	1,421,750	1,095,888
Municipal	2,107,274	2,148,298
Major Industries	493,065	135,440
Permit industries	223,516	397,439
Notes receivable, current portion	-	80,460
Other receivables	1,300,045	1,448,595
Prepaid expenses	545,529	335,511
Total current assets	93,883,924	96,854,166
Non current:		
Capital assets, net of accumulated depreciation	294,241,463	276,768,326
Notes receivable, net of current portion	-	1,593,511
Restricted cash and cash equivalents	11,648,746	11,648,746
Total non current assets	305,890,209	290,010,583
DEFERRED OUTFLOWS OF RESOURCES		
Deferred expense on refunding	3,249,968	3,521,742
Pension plan related deferred outflows	10,483,842	11,682,586
Total assets and deferred outflows of resources	$ 413,507,943	$ 402,069,077
LIABILITIES		
Current liabilities:		
Accounts payable and accrued expenses	$ 7,535,576	$ 5,323,543
Payable to the City of Philadelphia	1,754,708	1,589,057
Current portion of long-term debt	6,192,051	6,142,851
Accrued bond interest payable	1,028,843	1,075,979
Advances on services		
Residential	213,348	126,993
Central Delaware County Authority	1,060,064	793,146
Muckinipates Authority	635,630	464,278
Darby Creek Joint Authority	1,384,002	1,374,210
Municipal	-	447,261
Major Industries	933,410	512,873
Total current liabilities	20,737,632	17,850,191
Noncurrent		
Long term debt, net of current portion	145,460,209	152,189,228
Net pension liability	7,100,169	8,473,571
Deferred compensation plan	573,017	459,586
Total non current liabilities	153,133,395	161,122,385
Total liabilities	173,871,027	178,972,576
DEFERRED INFLOWS OF RESOURCES		
Pension plan related deferred inflows	4,326,029	2,870,217
Total liabilities and deferred inflows of resources	178,197,056	181,842,793
NET POSITION		
Invested in capital assets, net of related debt	141,560,360	118,436,483
Restricted for debt service	11,022,139	-
Unrestricted	82,728,388	101,789,801
Total net position	235,310,887	220,226,284
TOTAL LIABILITIES AND NET POSITION	$ 413,507,943	$ 402,069,077

The accompanying notes to the financial statements are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER QUALITY
CONTROL AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

FOR THE YEARS ENDED DECEMBER 31,

	2021	2020
Operating revenues		
Western Region:		
Major Industries	$ 8,483,823	$ 7,988,950
Residential	9,337,233	8,797,981
Municipal	11,091,658	10,509,730
Contract operation fees	461,772	634,364
Permit Industries	1,554,144	1,489,836
Total Western Region	30,928,630	29,420,861
Eastern Region:		
Darby Creek Joint Authority	20,923,500	18,967,409
Central Delaware County Authority	10,362,238	9,591,402
Muckinipates Authority	4,538,196	4,272,642
Total Eastern Region	35,823,934	32,831,453
Sludge disposal and processing	6,384,090	6,621,620
Total operating revenues	73,136,654	68,873,934
Operating expenses, including depreciation of $9,445,142 in 2021 and $8,590,205 in 2020	54,074,043	53,391,628
Operating income	19,062,611	15,482,306
Non-operating revenues (expense)		
Interest income	147,467	900,936
Interest expense	(6,314,072)	(6,568,009)
Bond premium amortization	1,322,851	1,322,852
Deferred cost on refunding amortization	(271,774)	(271,774)
Other income (see Note 9)	242,176	10,694,498
Total non-operating revenues (expense)	(4,873,352)	6,078,503
Net income before capital contributions	14,189,259	21,560,809
Capital contributions:	895,344	761,060
Net income	15,084,603	22,321,869
Net position - beginning	220,226,284	197,904,415
Net position - ending	$ 235,310,887	$ 220,226,284

The accompanying notes to the financial statements are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER QUALITY
CONTROL AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31,

	2022	2021
ASSETS		
Current:		
Cash and cash equivalents	$ 70,487,931	$ 86,690,610
Investments	485,673	1,102,135
Receivables:		
Western Region		
Residential, net of allowance for doubtful accounts of $1,172,935 and $909,826 in 2022 and 2021, respectively	2,401,935	1,421,750
Municipal	2,338,630	2,107,274
Major industries	476,208	493,065
Permit industries	203,853	223,516
Other receivables	1,869,725	1,300,045
Prepaid expenses	268,067	545,529
Total current assets	78,532,022	93,883,924
Non current:		
Capital assets, net of accumulated depreciation	322,299,993	294,241,463
Right to use asset	110,812	-
Restricted cash and cash equivalents	11,740,850	11,648,746
Total non current assets	334,151,655	305,890,209
DEFERRED OUTFLOWS OF RESOURCES		
Deferred expense on refunding	2,978,193	3,249,968
Pension plan related deferred outflows	10,610,065	10,483,842
Total assets and deferred outflows of resources	$ 426,271,935	$ 413,507,943
LIABILITIES		
Current liabilities:		
Accounts payable and accrued expenses	$ 6,772,098	$ 7,535,576
Payable to the City of Philadelphia	1,948,014	1,754,708
Current portion of long-term debt	6,453,914	6,192,051
Accrued bond interest payable	994,978	1,028,843
Current portion of operating lease liability	43,532	-
Advances on services		
Eastern Region		
Residential	158,048	213,348
Central Delaware County Authority	1,280,721	1,060,064
Muckinipates Authority	554,152	635,630
Darby Creek Joint Authority	2,202,771	1,384,002
Major industries	31,796	933,410
Total current liabilities	20,440,024	20,737,632
Noncurrent		
Operating lease liability - net of current protion	67,280	-
Long term debt, net of current portion	138,964,327	145,460,209
Net pension liability	2,366,661	7,100,169
Deferred compensation plan	485,673	573,017
Total non current liabilities	141,883,941	153,133,395
Total liabilities	162,323,965	173,871,027
DEFERRED INFLOWS OF RESOURCES		
Pension plan related deferred inflows	10,138,949	4,326,029
Total liabilities and deferred inflows of resources	172,462,914	178,197,056
NET POSITION		
Invested in capital assets, net of related debt	176,881,753	141,560,360
Restricted for debt service	11,740,850	11,022,139
Unrestricted	65,186,418	82,728,388
Total net position	253,809,021	235,310,887
TOTAL LIABILITIES AND NET POSITION	$ 426,271,935	$ 413,507,943

The accompanying notes to the financial statements are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER QUALITY CONTROL AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

FOR THE YEARS ENDED DECEMBER 31,

	2022	2021
Operating revenues		
Western Region:		
Major Industries	$ 9,711,481	$ 8,483,823
Residential	10,927,364	9,337,233
Municipal	11,550,992	11,091,658
Contract operation fees	551,853	461,772
Permit Industries	1,780,740	1,554,144
Total Western Region	34,522,430	30,928,630
Eastern Region:		
Darby Creek Joint Authority	22,547,367	20,923,500
Central Delaware County Authority	11,237,212	10,362,238
Muckinipates Authority	4,965,915	4,538,196
Total Eastern Region	38,750,494	35,823,934
Sludge disposal and processing	6,190,959	6,384,090
Total operating revenues	79,463,883	73,136,654
Operating expenses, including depreciation of $9,792,367 in 2022 and $9,445,142 in 2021	57,911,544	54,074,043
Operating income	21,552,339	19,062,611
Non-operating revenues (expense)		
Interest income	1,294,078	147,467
Interest expense	(6,118,633)	(6,314,072)
Bond premium amortization	1,322,851	1,322,851
Deferred cost on refunding amortization	(271,774)	(271,774)
Other income	138,573	242,176
Total non-operating revenues (expense)	(3,634,905)	(4,873,352)
Net income before capital contributions	17,917,434	14,189,259
Capital contributions:	580,700	895,344
Net income	18,498,134	15,084,603
Net position - beginning	235,310,887	220,226,284
Net position - ending	$ 253,809,021	$ 235,310,887

The accompanying notes to the financial statements are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER QUALITY
CONTROL AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31,

	2023	2022
ASSETS		
Current:		
Cash and cash equivalents	$ 80,027,579	$ 70,487,931
Investments	5,428,897	485,673
Receivables:		
Western Region		
Residential, net of allowance for doubtful accounts of $827,905 and $1,172,935 in 2023 and 2022, respectively	1,768,423	2,401,935
Municipal	3,587,823	2,338,630
Major industries	333,719	476,208
Permit industries	166,554	203,853
Other receivables	1,764,514	1,869,725
Prepaid expenses	201,488	268,067
Total current assets	93,278,797	78,532,022
Non current:		
Capital assets, net of accumulated depreciation	331,304,329	322,299,993
Right to use asset	89,212	110,812
Restricted cash and cash equivalents	14,148,555	11,740,850
Pension funding	1,193,299	-
Total non current assets	346,735,395	334,151,655
DEFERRED OUTFLOWS OF RESOURCES		
Deferred expense on refunding	2,706,419	2,978,193
Pension plan related deferred outflows	7,364,785	10,610,065
Total assets and deferred outflows of resources	$ 450,085,396	$ 426,271,935
LIABILITIES		
Current liabilities:		
Accounts payable and accrued expenses	$ 6,732,386	$ 6,772,098
Payable to the City of Philadelphia	1,922,141	1,948,014
Current portion of long-term debt	6,704,762	6,453,914
Accrued bond interest payable	1,076,358	994,978
Current portion of operating lease liability	27,175	43,532
Advances on services		
Eastern Region		
Residential	183,190	158,048
Central Delaware County Authority	1,530,298	1,280,721
Muckinipates Authority	811,418	554,152
Darby Creek Joint Authority	2,601,579	2,202,771
Major industries	193,617	31,796
Total current liabilities	21,762,926	20,440,024
Noncurrent		
Operating lease liability - net of current protion	62,037	67,280
Long term debt, net of current portion	144,364,378	138,964,327
Net pension liability	-	2,366,661
Deferred compensation plan	618,903	485,673
Total non current liabilities	145,045,318	141,883,941
Total liabilities	166,828,244	162,323,965
DEFERRED INFLOWS OF RESOURCES		
Pension plan related deferred inflows	9,505,985	10,138,949
Total liabilities and deferred inflows of resources	176,334,229	172,462,914
NET POSITION		
Invested in capital assets, net of related debt	180,237,083	176,881,753
Restricted for debt service	14,148,555	11,740,850
Unrestricted	79,365,529	65,186,418
Total net position	273,751,167	253,809,021
TOTAL LIABILITIES AND NET POSITION	$ 450,085,396	$ 426,271,935

The accompanying notes to the financial statements are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER QUALITY
CONTROL AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

FOR THE YEARS ENDED DECEMBER 31,

	2023	2022
Operating revenues		
Western Region:		
Major Industries	$ 9,253,941	$ 9,711,481
Residential	11,753,876	10,927,364
Municipal	12,253,797	11,550,992
Contract operation fees	625,939	551,853
Permit Industries	1,719,335	1,780,740
Total Western Region	35,606,888	34,522,430
Eastern Region:		
Darby Creek Joint Authority	23,166,612	22,547,367
Central Delaware County Authority	11,460,816	11,237,212
Muckinipates Authority	5,011,092	4,965,915
Total Eastern Region	39,638,520	38,750,494
Sludge disposal and processing	6,507,209	6,190,959
Total operating revenues	81,752,617	79,463,883
Operating expenses, including depreciation of $10,891,213 in 2023 and $9,792,367 in 2022	60,325,829	57,911,544
Operating income	21,426,788	21,552,339
Non-operating revenues (expense)		
Interest income	3,742,325	1,294,078
Interest expense	(6,414,305)	(6,118,633)
Bond premium amortization	1,322,851	1,322,851
Bond issuance costs	(344,000)	-
Deferred cost on refunding amortization	(271,774)	(271,774)
Other income	163,821	138,573
Total non-operating revenues (expense)	(1,801,082)	(3,634,905)
Net income before capital contributions	19,625,706	17,917,434
Capital contributions	316,440	580,700
Net income	19,942,146	18,498,134
Net position - beginning	253,809,021	235,310,887
Net position - ending	$ 273,751,167	$ 253,809,021

The accompanying notes to the financial statements are an integral part of these 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

	2020	2019
Operating revenues	**$ 40,725,085**	$ 40,086,711
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	**2,850,000**	3,600,000
Total operating expenses	**19,517,328**	22,143,829
Operating income before depreciation	**21,207,757**	17,942,882
Depreciation	**7,746,138**	8,393,230
Operating income	**13,461,619**	9,549,652
Non-operating revenue (expense)		
Interest expense	**(13,588,313)**	(12,123,859)
Other revenue (expense), net	**(153,290)**	1,651,260
Net loss before contributed capital	**(279,984)**	(922,947)
Capital asset contributions	**-**	-
CHANGE IN NET POSITION	**(279,984)**	(922,947)
Net Position		
Beginning of year	**(55,786,094)**	(54,863,147)
End of year	**$ (56,066,078)**	$ (55,786,094)

The notes to the financial statements are an integral part of these statements.

ERIE CITY WATER AUTHORITY
(AKA ERIE WATER WORKS)
Statement of Net Position
December 31, 2021 and 2020

	2021	2020
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES		
Current Assets		
Cash and cash equivalents	**$ 18,499,233**	$ 15,840,370
Restricted cash - workers' compensation fund	**317,269**	279,455
Investments - cash and certificates of deposit (at par)	**794,729**	795,109
Receivables - customers, net	**5,006,643**	5,791,611
Current portion of customer receivables	**19,600**	19,600
Inventories, at cost	**1,227,692**	1,549,331
Prepaid expenses	**3,357,083**	1,340,963
Total current assets	**29,222,249**	25,616,439
Non-Current Assets		
Restricted investments		
Amount provided for retirement of long-term debt	**8,678,971**	7,686,000
Amount provided for future system improvements	**6,110,198**	11,941,433
Board designated reserve for capital expenditures	**5,000,000**	5,000,000
Investment in self-liquidity bonds	**5,210,000**	5,225,000
Long-term customer receivables	**96,705**	117,932
Capital assets, net of accumulated depreciation		
Contributed capital assets	**2,225,557**	2,508,257
Purchased capital assets	**211,121,178**	197,500,684
Total non-current assets	**238,442,609**	229,979,306
Total assets	**267,664,858**	255,595,745
Deferred Outflows of Resources		
Deferred City of Erie lease payments	**98,201,989**	103,067,058
Changes in pension experience	**1,187,254**	1,753,594
Changes in pension assumptions	**1,214,688**	1,969,111
Deferred loss on advanced bond refunding, net	**28,165,906**	23,376,680
Deferred bond swap fee, net	**10,447,114**	11,179,830
Total deferred outflow of resources	**139,216,951**	141,346,273
Total assets and deferred outflow of resources	**$ 406,881,809**	$ 396,942,018

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, 2021 and 2020

	2021	2020
Operating revenues	**$ 42,221,410**	$ 40,725,085
Operating expenses		
Personnel	**6,419,997**	6,112,365
Personnel benefits	**3,002,841**	3,504,971
Supplies and materials	**2,691,295**	2,012,909
Other services and charges	**5,608,226**	5,037,083
City of Erie lease	**-**	2,850,000
Total operating expenses	**17,722,359**	19,517,328
Operating income before depreciation	**24,499,051**	21,207,757
Depreciation	**7,334,156**	7,746,138
Operating income	**17,164,895**	13,461,619
Non-operating revenue (expense)		
Interest expense	**(14,994,518)**	(13,588,313)
Other revenue (expense), net	**(2,498,599)**	(153,290)
Net loss before contributed capital	**(328,222)**	(279,984)
Capital asset contributions	**-**	-
CHANGE IN NET POSITION	**(328,222)**	(279,984)
Net Position		
Beginning of year	**(56,066,078)**	(55,786,094)
End of year	**$ (56,394,300)**	$ (56,066,078)

The notes to the financial statements are an integral part of these statements.

ERIE CITY WATER AUTHORITY
(AKA ERIE WATER WORKS)
Statement of Net Position
December 31, 2022 and 2021

	2022	2021
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES		
Current Assets		
Cash and cash equivalents	**$ 11,399,995**	$ 18,499,233
Restricted cash - workers' compensation fund	**339,314**	317,269
Investments - cash and certificates of deposit (at par)	**786,698**	794,729
Receivables - customers, net	**5,273,855**	5,006,643
Current portion of customer receivables	**19,600**	19,600
Inventories, at cost	**1,604,945**	1,227,692
Prepaid expenses	**3,243,579**	3,357,083
Total current assets	**22,667,986**	29,222,249
Non-Current Assets		
Restricted investments		
Amount provided for retirement of long-term debt	**8,719,261**	8,678,971
Amount provided for future system improvements	**483,482**	6,110,198
Board designated reserve for capital expenditures	**5,000,000**	5,000,000
Investment in self-liquidity bonds	**5,195,000**	5,210,000
Long-term customer receivables	**77,384**	96,705
Capital assets, net of accumulated depreciation		
Contributed capital assets	**1,968,299**	2,225,557
Purchased capital assets	**234,487,365**	211,121,178
Total non-current assets	**255,930,791**	238,442,609
Total assets	**278,598,777**	267,664,858
Deferred Outflows of Resources		
Deferred City of Erie lease payments	**95,394,890**	98,201,989
Changes in pension experience	**-**	1,187,254
Changes in pension assumptions	**630,016**	1,214,688
Deferred loss on advanced bond refunding, net	**26,675,474**	28,165,906
Deferred bond swap fee, net	**9,714,398**	10,447,114
Total deferred outflow of resources	**132,414,778**	139,216,951
Total assets and deferred outflow of resources	**$ 411,013,555**	$ 406,881,809

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, 2022 and 2021

	2022	2021
Operating revenues	**$ 42,909,437**	$ 42,221,410
Operating expenses		
Personnel	**6,816,018**	6,419,997
Personnel benefits	**3,995,453**	4,602,810
Supplies and materials	**2,759,799**	2,691,295
Other services and charges	**6,711,191**	5,608,226
Total operating expenses	**20,282,461**	19,322,328
Operating income before depreciation	**22,626,976**	22,899,082
Depreciation	**7,082,738**	7,334,156
Operating income	**15,544,238**	15,564,926
Non-operating revenue (expense)		
Interest expense	**(14,669,271)**	(14,994,518)
Other revenue (expense), net	**(10,209,483)**	(898,630)
Net loss before contributed capital	**(9,334,516)**	(328,222)
Capital asset contributions	**-**	-
CHANGE IN NET POSITION	**(9,334,516)**	(328,222)
Net Position		
Beginning of year	**(56,394,300)**	(56,066,078)
End of year	**$ (65,728,816)**	$ (56,394,300)

The notes to the financial statements are an integral part of these statements.

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	12,519,663	12,976,616
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	(103,992,369)	(97,771,861)
Capital Assets, Net	147,014,498	140,405,221
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	4,337,053	6,978,398
Total Assets	185,479,551	179,562,420
Deferred Outflows of Resources		
Pension	496,415	957,717
Total Assets and Deferred Outflows of Resources	$ 185,975,966	$ 180,520,137

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	24,376,640	23,304,048
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	18,307,584	16,402,468
Operating income	6,069,056	6,901,580
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)	(297,214)	(144,188)
Income before capital contributions	5,771,842	6,757,392
Capital contributions	1,075,815	851,741
Increase in net position	6,847,657	7,609,133
Net position at beginning of year	104,086,085	96,476,952
Net position at end of year	$ 110,933,742	$ 104,086,085

The Notes to Financial Statements are an integral part of these statements. 16

LANCASTER AREA SEWER AUTHORITY
Statements of Net Position
March 31, 2022 and 2021

	2022	2021
Assets and Deferred Outflows of Resources		
Current Assets		
Cash and cash equivalents	$ 3,093,973	$ 4,644,074
Investments	2,000,000	-
Funds in custody of trustee, restricted cash	4,365,000	4,210,000
Accounts receivable	4,021,035	3,593,825
Prepaid expenses	85,877	71,764
Total Current Assets	13,565,885	12,519,663
Capital Assets		
Capital assets not being depreciated		
Land	875,181	875,181
Construction in progress	6,976,467	4,742,245
Capital assets being depreciated		
Sewer system - lines	123,302,525	122,165,152
Sewer system - pump stations	42,146,759	41,931,866
Sewer system - treatment plant	73,994,644	72,170,735
Buildings and improvements	4,126,937	4,090,201
Technology	1,473,958	1,424,091
Vehicles	2,276,708	2,529,916
Equipment	1,329,764	1,077,480
Accumulated depreciation	(109,858,307)	(103,992,369)
Capital Assets, Net	146,644,636	147,014,498
Accounts receivable, net of current portion	118,356	161,167
Net pension asset	1,363,728	-
Funds in custody of trustee, restricted cash, net of current portion	10,744,085	16,446,170
Funds in custody of trustee, restricted investments	21,738,103	9,338,053
Total Assets	194,174,793	185,479,551
Deferred Outflows of Resources		
Pension	330,943	496,415
Total Assets and Deferred Outflows of Resources	$ 194,505,736	$ 185,975,966

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
March 31, 2022 and 2021

	2022	2021
Operating Revenue		
Sewer rental	$ 24,357,660	$ 22,534,309
Industrial waste surcharges	453,949	357,471
Bulk treatment fees	521,606	406,091
Trucked waste program	531,510	503,123
Interest and penalties	339,750	254,311
Miscellaneous income	395,505	321,335
Total operating revenue	26,599,980	24,376,640
Operating Expenses		
Administrative	3,375,692	3,841,748
Collection department	8,357,491	7,913,564
Treatment plant	5,190,388	5,168,757
Pretreatment program and laboratory department	384,804	306,245
Columbia Borough	566,414	741,975
West Earl	695,928	335,295
Total operating expenses	18,570,717	18,307,584
Operating income	8,029,263	6,069,056
Nonoperating Revenues (Expenses)		
Interest income (losses)	(208,801)	99,485
Tapping fees	3,056,393	1,322,458
Capacity reservation fees	299,814	287,960
Gain (loss) on sale of assets	73,257	66,100
Interest expense	(2,430,336)	(2,519,082)
Bond issue costs	-	(109,314)
Amortization	415,469	555,179
Total nonoperating revenues (expenses)	1,205,796	(297,214)
Income before capital contributions	9,235,059	5,771,842
Capital contributions	1,231,729	1,075,815
Increase in net position	10,466,788	6,847,657
Net position at beginning of year	110,933,742	104,086,085
Net position at end of year	$ 121,400,530	$ 110,933,742

The Notes to Financial Statements are an integral part of these statements. | 16

LANCASTER AREA SEWER AUTHORITY
Statements of Net Position
March 31, 2023 and 2022

	2023	2022
Assets and Deferred Outflows of Resources		
Current Assets		
Cash and cash equivalents	$ 1,680,572	$ 3,093,973
Investments	3,982,781	2,000,000
Funds in custody of trustee, restricted cash	4,565,000	4,365,000
Accounts receivable	4,494,373	4,021,035
Prepaid expenses	81,491	85,877
Total Current Assets	14,804,217	13,565,885
Capital Assets		
Capital assets not being depreciated		
Land	875,181	875,181
Construction in progress	7,358,747	6,976,467
Capital assets being depreciated		
Sewer system - lines	134,414,746	123,302,525
Sewer system - pump stations	42,635,900	42,146,759
Sewer system - treatment plant	74,205,462	73,994,644
Buildings and improvements	4,126,937	4,126,937
Technology	1,473,958	1,473,958
Vehicles	2,601,170	2,276,708
Equipment	1,362,764	1,329,764
Accumulated depreciation	(116,182,270)	(109,858,307)
Capital Assets, Net	152,872,595	146,644,636
Accounts receivable, net of current portion	92,935	118,356
Net pension asset	-	1,363,728
Funds in custody of trustee, restricted cash, net of current portion	6,697,677	10,744,085
Funds in custody of trustee, restricted investments	22,402,017	21,738,103
Total Assets	196,869,441	194,174,793
Deferred Outflows of Resources		
Pension	2,075,744	330,943
Total Assets and Deferred Outflows of Resources	$ 198,945,185	$ 194,505,736

The Notes to Financial Statements are an integral part of these statements. | 13

LANCASTER AREA SEWER AUTHORITY
Statements of Revenues, Expenses, and Changes in Net Position
March 31, 2023 and 2022

	2023	2022
Operating Revenue		
Sewer rental	$ 25,947,712	$ 24,357,660
Industrial waste surcharges	872,975	453,949
Bulk treatment fees	474,082	521,606
Trucked waste program	494,463	531,510
Interest and penalties	400,987	339,750
Miscellaneous income	475,872	395,505
Total operating revenue	28,666,091	26,599,980
Operating Expenses		
Administrative	4,541,457	3,372,804
Collection department	8,498,149	8,203,509
Treatment plant	6,081,353	5,313,976
Pretreatment program and laboratory department	435,039	384,804
Columbia Borough	665,941	598,689
West Earl	572,016	696,935
Total operating expenses	20,793,955	18,570,717
Operating income	7,872,136	8,029,263
Nonoperating Revenues (Expenses)		
Interest income (losses)	696,384	(208,801)
Tapping fees	1,124,462	3,056,393
Capacity reservation fees	317,626	299,814
Gain on sale of assets	6,600	73,257
Interest expense	(2,275,786)	(2,430,336)
Amortization	431,369	415,469
Total nonoperating revenues (expenses)	300,655	1,205,796
Income before capital contributions	8,172,791	9,235,059
Capital contributions	1,583,529	1,231,729
Increase in net position	9,756,320	10,466,788
Net position at beginning of year	121,400,530	110,933,742
Net position at end of year	$ 131,156,850	$ 121,400,530

The Notes to Financial Statements are an integral part of these statements. 15

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2021 AND 2020

	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	$ 76,422	$ 60,210
Accounts receivable, net:		
Water:		
Billed	8,332	7,400
Unbilled	8,576	7,955
Total water	16,908	15,355
Wastewater treatment:		
Billed	4,886	3,676
Unbilled	4,219	3,457
Total wastewater treatment	9,105	7,133
Other receivables	555	1,924
Total accounts receivable, net	26,568	24,412
Prepaid expenses	1,747	1,737
Inventory	2,028	2,075
Total current assets	106,765	88,434
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	16,785	16,201
Investments	9,099	9,705
Total restricted assets	25,884	25,906
Capital assets, not being depreciated	158,128	155,050
Capital assets, net of accumulated depreciation	857,243	766,600
Total noncurrent assets	1,041,255	947,556
Total Assets	1,148,020	1,035,990
Deferred Outflows of Resources		
Deferred charge on refunding	84,644	91,827
Accumulated decrease in fair value of hedging derivatives	21,465	33,863
Total Deferred Outflows of Resources	106,109	125,690

(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, 2021 AND 2020

	2021	2020
Operating Revenues:		
Residential, commercial, and industrial water sales	$ 181,870	$ 162,676
Wastewater treatment	76,774	71,899
Other	10,477	7,422
Total operating revenues	269,121	241,997
Operating Expenses:		
Direct operating expenses	99,160	92,134
Wastewater treatment	76,802	72,698
Reimbursement for City of Pittsburgh indirect services	3,818	4,289
Expense of water provided by other entities	120	386
Depreciation	24,386	21,659
Total operating expenses	204,286	191,166
Operating Income	64,835	50,831
Non-operating Revenues (Expenses):		
Federal and private grants	1,347	7,001
Interest revenue	24	201
Interest and amortization	(39,431)	(37,463)
Bond issuance costs	-	(2,075)
Total non-operating revenues (expenses)	(38,060)	(32,336)
Net Income before Capital Contribution and Special Item	26,775	18,495
Capital Contribution:		
Donated property	567	76
Special Item:		
Private lead line replacement	(3,088)	(18,832)
Net Income (Loss)	24,254	(261)
Net Position:		
Beginning of year	1,274	1,535
End of year	$ 25,528	$ 1,274

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, 2022 AND 2021

	2022	2021 (restated)
Assets		
Current assets:		
Cash and cash equivalents	$ 83,695	$ 76,422
Accounts receivable, net:		
Water:		
Billed	16,053	8,332
Unbilled	8,746	8,576
Total water	24,799	16,908
Wastewater treatment:		
Billed	2,706	4,886
Unbilled	3,880	4,219
Total wastewater treatment	6,586	9,105
Other receivables	3,297	555
Total accounts receivable, net	34,682	26,568
Prepaid expenses	1,804	1,747
Inventory	2,645	2,028
Total current assets	122,826	106,765
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	17,129	16,785
Investments	9,183	9,099
Total restricted assets	26,312	25,884
Hedging derivative - interest rate swap	20,167	-
Capital assets, not being depreciated	212,414	158,128
Capital assets, net of accumulated depreciation/amortization	898,371	861,249
Total noncurrent assets	1,157,264	1,045,261
Total Assets	1,280,090	1,152,026
Deferred Outflows of Resources		
Deferred charge on refunding	75,822	84,644
Accumulated decrease in fair value of hedging derivatives	384	21,465
Total Deferred Outflows of Resources	76,206	106,109

(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, 2022 AND 2021

	2022	2021 (restated)
Operating Revenues:		
Residential, commercial, and industrial sales	$ 199,761	$ 181,870
Wastewater treatment	80,868	76,774
Other	6,537	10,477
Total operating revenues	287,166	269,121
Operating Expenses:		
Direct operating expenses	98,962	99,160
Wastewater treatment	81,804	76,802
Reimbursement for City of Pittsburgh indirect services	3,805	3,818
Expense of water provided by other entities	172	120
Depreciation and amortization	27,936	24,386
Total operating expenses	212,679	204,286
Operating Income	74,487	64,835
Non-operating Revenues (Expenses):		
Federal and private grants	9,264	1,347
Interest revenue	348	24
Interest and amortization	(40,687)	(39,431)
Bond issuance costs	(536)	-
Total non-operating revenues (expenses)	(31,611)	(38,060)
Net Income before Capital Contribution and Special Item	42,876	26,775
Capital Contribution:		
Donated property	876	567
Special Item:		
Private lead line replacement, net	(4,748)	(3,088)
Net Income (Loss)	39,004	24,254
Net Position:		
Beginning of year	25,528	1,274
End of year	$ 64,532	$ 25,528

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, 2023 AND 2022

	2023	2022 (restated)
Assets		
Current assets:		
Cash and cash equivalents	$ 67,966	$ 83,695
Accounts receivable, net:		
Water:		
Billed	16,235	16,053
Unbilled	9,950	8,746
Total water	26,185	24,799
Wastewater treatment:		
Billed	3,325	2,706
Unbilled	4,144	3,880
Total wastewater treatment	7,469	6,586
Other receivables	8,683	3,297
Total accounts receivable, net	42,337	34,682
Prepaid expenses	2,080	1,804
Inventory	2,702	2,645
Total current assets	115,085	122,826
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	20,393	17,129
Investments	10,266	9,183
Total restricted assets	30,659	26,312
Hedging derivative - interest rate swap	12,896	20,167
Capital assets, not being depreciated	244,278	212,414
Capital assets, net of accumulated depreciation/amortization	961,742	901,685
Total noncurrent assets	1,249,575	1,160,578
Total Assets	1,364,660	1,283,404
Deferred Outflows of Resources		
Deferred charge on refunding	63,130	75,822
Accumulated decrease in fair value of hedging derivatives	-	384
Total Deferred Outflows of Resources	63,130	76,206

(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, 2023 AND 2022

	2023	2022
Operating Revenues:		
Residential, commercial, and industrial sales	$ 207,487	$ 199,761
Wastewater treatment	87,791	80,868
Other	3,438	6,537
Total operating revenues	298,716	287,166
Operating Expenses:		
Direct operating expenses	116,056	98,962
Wastewater treatment	90,060	81,804
Reimbursement for City of Pittsburgh indirect services	4,073	3,805
Expense of water provided by other entities	164	172
Depreciation and amortization	33,096	27,936
Total operating expenses	243,449	212,679
Operating Income	55,267	74,487
Non-operating Revenues (Expenses):		
Federal and private grants	11,901	9,264
Interest revenue	1,890	348
Interest and amortization	(43,210)	(40,687)
Bond issuance costs	(1,917)	(536)
Total non-operating revenues (expenses)	(31,336)	(31,611)
Net Income before Capital Contribution and Special Item	23,931	42,876
Capital Contribution:		
Donated property	3,168	876
Special Item:		
Private lead line replacement, net	(7,894)	(4,748)
Net Income (Loss)	19,205	39,004
Net Position:		
Beginning of year	64,532	25,528
End of year	$ 83,737	$ 64,532

The notes to financial statements are an integral part of this statement.

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Net Position - Enterprise Fund

	December 31, 2021	2020
Assets		
Current Assets, Unrestricted		
Cash	$ 17,689,072	$ 16,436,716
Accounts receivable, water billings, net of allowance 2021 and 2020 $2,820,082	3,969,397	4,157,344
Accounts receivable, trash and recycling billings, net of allowance 2021 $56,489; 2020 $78,819	8,601	8,978
Unbilled water usage	1,033,025	995,687
Inventory	146,694	114,583
Total Current Assets, Unrestricted	22,846,789	21,713,308
Current Assets, Restricted		
Trust accounts, cash and investments		
Clearing Account	26	9
Construction Account	-	2
Debt Service Account	24	29
Debt Service Reserve Account	2,511,922	4,018,568
Total Current Assets, Restricted	2,511,972	4,018,608
Capital Assets		
Capital assets not being depreciated, construction in progress	81,951	304,561
Capital assets being depreciated		
Leasehold improvements	82,407,773	80,754,706
Acquired systems	922,519	879,745
Equipment	13,176,176	12,589,754
Vehicles	3,189,248	3,153,520
Computers and software	933,646	933,646
	100,629,362	98,311,371
Accumulated depreciation	(39,662,582)	(35,278,978)
	60,966,780	63,032,393
Capital Assets, Net	61,048,731	63,336,954
Other Asset		
Leased land rights	849,525	883,620
Deferred Outflow of Resources, Refinancing Loss	5,100,539	5,280,266
Total Assets and Deferred Outflow of Resources	92,357,556	95,232,756

See accompanying notes. 10

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Revenues, Expenses, and Changes in Net Position - Enterprise Fund

	Years Ended December 31, 2021	2020
Operating Revenues		
Water billings	$ 31,847,547	$ 31,735,206
Tampered meter and other charges	535,209	344,642
Interest and penalty charges	452,716	619,149
Tapping and connection fees	167,474	54,873
Abandonment fees	17,604	21,664
Total Operating Revenues	33,020,550	32,775,534
Operating Expenses		
Lease payments, City of Reading	12,538,372	12,543,495
Salaries and payroll taxes	5,025,425	5,182,418
Employee benefits	1,273,912	1,253,169
Chemical supplies	1,198,734	1,156,151
Contracted services	1,038,313	928,007
Repairs and maintenance	897,848	489,663
Utilities	644,695	668,639
Supplies	539,606	444,116
Bank charges	418,972	381,017
Legal fees	380,804	444,124
Bad debt expense	275,164	564,837
Insurance	138,484	149,321
Engineering	93,283	175,475
Dues and subscriptions	71,899	71,492
Grant expenditures	58,304	75,769
Advertising	32,686	17,929
Professional services	29,690	34,250
Education	3,697	1,215
Development	-	20,875
Total Operating Expenses	24,659,888	24,601,962
Operating Income before Depreciation and Amortization	8,360,662	8,173,572
Depreciation and Amortization	4,417,699	4,519,916
Operating Income	3,942,963	3,653,656

See accompanying notes. 12

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Net Position - Enterprise Fund

	December 31, 2022	2021
Assets		
Current Assets, Unrestricted		
Cash	$ 17,892,202	$ 17,689,072
Accounts receivable, water billings, net of allowance 2022 $2,988,313; 2021 $2,820,082	4,557,294	3,969,397
Accounts receivable, trash and recycling billings, net of allowance 2022 $38,964; 2021 $56,489	5,608	8,601
Due from the City of Reading	154,040	-
Unbilled water usage	1,060,154	1,033,025
Inventory	334,406	146,694
Total Current Assets, Unrestricted	24,003,704	22,846,789
Current Assets, Restricted		
Trust accounts, cash and investments		
Clearing Account	8	26
Debt Service Account	7,500	24
Debt Service Reserve Account	2,553,761	2,511,922
Total Current Assets, Restricted	2,561,269	2,511,972
Capital Assets		
Capital assets not being depreciated, construction in progress	298,848	81,951
Capital assets being depreciated		
Leasehold improvements	82,661,102	82,407,773
Acquired systems	922,519	922,519
Equipment	13,481,181	13,176,176
Vehicles	3,189,248	3,189,248
Computers and software	939,118	933,646
	101,193,168	100,629,362
Accumulated depreciation	(44,060,709)	(39,662,582)
	57,132,459	60,966,780
Capital Assets, Net	57,431,307	61,048,731
Other Asset		
Prepaid expenses	868,113	849,525
Deferred Outflow of Resources, Refinancing Loss	4,924,291	5,100,539
Total Assets and Deferred Outflow of Resources	89,788,684	92,357,556

See accompanying notes.

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Revenues, Expenses, and Changes in Net Position - Enterprise Fund

	Years Ended December 31, 2022	2021
Operating Revenues		
Water billings	$ 33,383,684	$ 31,847,547
Tampered meter and other charges	334,857	535,209
Interest and penalty charges	456,642	452,716
Tapping and connection fees	159,235	167,474
Abandonment fees	8,552	17,604
Total Operating Revenues	34,342,970	33,020,550
Operating Expenses		
Lease payments, City of Reading	12,670,536	12,538,372
Salaries and payroll taxes	5,225,977	5,025,425
Employee benefits	1,471,525	1,273,912
Chemical supplies	1,658,599	1,198,734
Contracted services	936,570	1,038,313
Repairs and maintenance	776,928	897,848
Utilities	1,036,602	644,695
Supplies	565,324	539,606
Bank charges	469,976	418,972
Legal fees	603,244	380,804
Bad debt expense	281,628	275,164
Insurance	156,383	138,484
Engineering	167,494	93,283
Dues and subscriptions	76,493	71,899
Grant expenditures	67,987	58,304
Advertising	34,352	32,686
Professional services	27,800	29,690
Education	2,955	3,697
Total Operating Expenses	26,230,373	24,659,888
Operating Income before Depreciation and Amortization	8,112,597	8,360,662
Depreciation and Amortization	4,432,222	4,417,699
Operating Income	3,680,375	3,942,963

See accompanying notes.

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Net Position - Enterprise Fund

	December 31, 2023	2022
Assets		
Current Assets, Unrestricted		
Cash	$ 17,354,085	$ 17,892,202
Accounts receivable, water billings, net of allowance 2023 $3,500,826; 2022 $2,988,313	4,622,837	4,557,294
Accounts receivable, trash and recycling billings, net of allowance 2023 $32,663; 2022 $38,964	2,482	5,608
Due from the City of Reading	(51,869)	154,040
Unbilled water usage	1,162,581	1,060,154
Inventory	371,785	334,406
Total Current Assets, Unrestricted	23,461,901	24,003,704
Current Assets, Restricted		
Trust accounts, cash and investments		
Clearing Account	9	8
Debt Service Account	19,840	7,500
Debt Service Reserve Account	2,655,698	2,553,761
Total Current Assets, Restricted	2,675,547	2,561,269
Capital Assets		
Capital assets not being depreciated, construction in progress	1,223,264	298,848
Capital assets being depreciated		
Leasehold improvements	83,795,945	82,661,102
Acquired systems	922,519	922,519
Equipment	13,700,417	13,481,181
Vehicles	3,189,248	3,189,248
Computers and software	933,646	939,118
	102,541,775	101,193,168
Accumulated depreciation	(48,113,534)	(44,060,709)
	54,428,241	57,132,459
Capital Assets, Net	55,651,505	57,431,307
Other Asset		
Prepaid expenses	845,295	868,113
Deferred Outflow of Resources, Refinancing Loss	4,751,795	4,924,291
Total Assets and Deferred Outflow of Resources	87,386,043	89,788,684

See accompanying notes. 10

Reading Area Water Authority
A Component Unit of the City of Reading

Statement of Revenues, Expenses, and Changes in Net Position - Enterprise Fund

	Years Ended December 31, 2023	2022
Operating Revenues		
Water billings	$ 33,603,238	$ 33,383,684
Tampered meter and other charges	308,571	334,857
Interest and penalty charges	503,250	456,642
Tapping and connection fees	252,744	159,235
Abandonment fees	19,401	8,552
Total Operating Revenues	34,687,204	34,342,970
Operating Expenses		
Lease payments, City of Reading	12,675,512	12,670,536
Salaries and payroll taxes	5,365,387	5,225,977
Employee benefits	1,583,746	1,471,525
Chemical supplies	2,388,334	1,658,599
Contracted services	986,286	936,570
Repairs and maintenance	772,843	776,928
Utilities	998,169	1,036,602
Supplies	696,376	565,324
Bank charges	281,590	469,976
Legal fees	471,085	603,244
Bad debt expense	552,364	281,628
Insurance	158,304	156,383
Engineering	209,875	167,494
Dues and subscriptions	110,665	76,493
Grant expenditures	71,061	67,987
Advertising	49,432	34,352
Professional services	29,800	27,800
Education	11,424	2,955
Total Operating Expenses	27,412,253	26,230,373
Operating Income before Depreciation and Amortization	7,274,951	8,112,597
Depreciation and Amortization	4,086,920	4,432,222
Operating Income	3,188,031	3,680,375

See accompanying notes.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2021 and 2020

	2021	2020
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	55,258,827	52,720,590
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	617,498,278	588,416,253
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	146,495,522	185,261,677
Total Assets	819,252,627	826,398,520
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	11,569,631	18,606,504

(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

	2021	2020
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	107,517,889	105,459,841
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	80,980,332	82,178,500
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	(17,099,072)	(17,144,990)
Income Before Capital Contributions	9,438,485	6,136,351
Capital Contributions	6,497,060	5,193,678
Increase in Net Position	15,935,545	11,330,029
Total Net Position, Beginning of Fiscal Year	156,507,789	145,177,760
Total Net Position, End of Fiscal Year	$ 172,443,334	$ 156,507,789

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2022 and 2021

	2022	2021
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	$ 36,150,461	$ 32,955,491
Accounts receivable, customers (net of allowance for doubtful accounts of $474,033 in 2022 and 2021)	7,377,787	6,110,790
Unbilled water and sewer service	9,995,199	10,669,704
Surcharges receivable, current portion	350,000	350,000
Other receivables	619,743	235,285
Material and supplies	3,808,950	3,914,453
Prepaid expenses	1,138,084	1,023,104
Total Current Assets	59,440,224	55,258,827
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	881,298,641	858,530,155
Less: accumulated depreciation	(251,821,548)	(241,031,877)
Property, Plant and Equipment, Net	629,477,093	617,498,278
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of $200,000 in 2022 and 2021	1,603,849	1,166,543
Prepaid bond insurance	871,552	920,538
Restricted assets:		
Special funds held by Trustee (Note 4 and 5)	120,369,951	140,795,056
Restricted cash held by the Authority (Note 6)	1,767,245	3,613,385
Total Non-Current Assets	124,612,597	146,495,522
Total Assets	813,529,914	819,252,627
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	5,145,157	-
Changes in assumptions related to pensions	12,005	29,403
Difference between expected and actual experience related to pensions	1,900,074	549,765
Contribution to pension plan subsequent to measurement date	51,452	51,812
Difference between expected and actual experience related to OPEB	4,756,335	16,345
Changes in assumptions related to OPEB	5,911,510	7,818,150
Deferred losses on bond refundings, net of amortization (Note 8)	2,879,725	3,104,156
Total Deferred Outflows of Resources	20,656,258	11,569,631

(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, 2022 and 2021

	2022	2021
Operating Revenues		
Water	$ 87,548,661	$ 88,548,010
Wastewater	17,638,554	17,024,421
Other operating revenues	4,290,022	1,945,458
Total Operating Revenues	109,477,237	107,517,889
Operating Expenses		
Source of supply	992,302	1,075,085
Treatment system	9,109,157	8,688,752
Distribution	20,556,330	21,126,537
Engineering	1,537,634	1,674,676
Wastewater system	10,444,798	9,424,097
Landfill	4,765	4,842
Depreciation and amortization	16,491,844	15,777,383
Commercial and general	21,067,926	21,858,960
Management fee	1,562,500	1,350,000
Total Operating Expenses	81,767,256	80,980,332
Operating Income Before Non-Operating Expenses	27,709,981	26,537,557
Non-Operating Revenues (Expenses)		
Investment income	1,983,251	2,891,362
Net increase (decrease) in the fair value of investments	(249,750)	40,103
Interest expense	(17,959,022)	(19,831,042)
Loss on disposals of property, plant and equipment	(365,140)	(199,495)
Total Non-Operating Expenses	(16,590,661)	(17,099,072)
Income Before Capital Contributions	11,119,320	9,438,485
Capital Contributions	9,261,867	6,497,060
Increase in Net Position	20,381,187	15,935,545
Total Net Position, Beginning of Fiscal Year	172,443,334	156,507,789
Total Net Position, End of Fiscal Year	$ 192,824,521	$ 172,443,334

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Net Position
March 31, 2023 and 2022

	2023	2022
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	$ 30,684,527	$ 36,150,461
Accounts receivable, customers (net of allowance for doubtful accounts of $474,033 in 2023 and 2022)	7,327,912	7,377,787
Unbilled water and sewer service	9,928,769	9,995,199
Surcharges receivable, current portion	350,000	350,000
Other receivables	381,570	619,743
Material and supplies	7,080,136	3,808,950
Prepaid expenses	682,919	1,138,084
Total Current Assets	56,435,833	59,440,224
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	908,356,457	881,298,641
Less: accumulated depreciation	(267,829,290)	(251,821,548)
Property, Plant and Equipment, Net	640,527,167	629,477,093
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of $200,000 in 2023 and 2022	1,347,243	1,603,849
Prepaid bond insurance	819,296	871,552
Restricted assets:		
Special funds held by Trustee (Note 4 and 5)	97,754,612	120,369,951
Restricted cash held by the Authority (Note 6)	2,628,293	1,767,245
Total Non-Current Assets	102,549,444	124,612,597
Total Assets	799,512,444	813,529,914
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	11,129,745	5,145,157
Changes in assumptions related to pensions	-	12,005
Difference between expected and actual experience related to pensions	1,108,993	1,900,074
Contribution to pension plan subsequent to measurement date	-	51,452
Difference between expected and actual experience related to OPEB	3,987,075	4,756,335
Changes in assumptions related to OPEB	4,004,870	5,911,510
Deferred losses on bond refundings, net of amortization (Note 8)	2,655,295	2,879,725
Total Deferred Outflows of Resources	22,885,978	20,656,258

(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, 2023 and 2022

	2023	2022
Operating Revenues		
Water	$ 89,737,982	$ 87,595,488
Wastewater	17,821,176	17,638,554
Other operating revenues	4,787,897	4,243,196
Total Operating Revenues	112,347,055	109,477,238
Operating Expenses		
Source of supply	1,037,374	992,302
Treatment system	11,670,279	9,109,157
Distribution	23,950,276	20,704,504
Engineering	1,644,530	1,537,634
Wastewater system	12,130,597	10,444,798
Landfill	4,765	4,765
Depreciation and amortization	16,531,917	16,491,844
Commercial and general	23,653,356	20,919,753
Management fee	1,750,000	1,562,500
Loss on disposals of property, plant and equipment	556,194	365,140
Total Operating Expenses	92,929,288	82,132,397
Operating Income before Non-Operating Expenses	19,417,767	27,344,841
Non-Operating Revenues (Expenses)		
Investment income	2,810,346	1,983,251
Net increase (decrease) in the fair value of investments	511,226	(249,750)
Interest expense	(16,880,321)	(17,959,022)
Total Non-Operating Revenues (Expenses)	(13,558,749)	(16,225,521)
Income before Capital Contributions	5,859,018	11,119,320
Capital Contributions	4,350,561	9,261,867
Increase in Net Position	10,209,579	20,381,187
Total Net Position, Beginning of Fiscal Year	192,824,521	172,443,334
Total Net Position, End of Fiscal Year	$ 203,034,100	$ 192,824,521

See accompanying notes to the financial statements.

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
2023	299.17	300.84	301.836	303.363	304.127	305.109	305.691	307.026	307.789	307.671	307.051	306.746	302.408	306.996
2024	308.417	310.326	312.332	313.548	314.069									

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #
	8	**9**	**16**	**34**	**39**	**40**
1912	**0**	**0**	**0**	**9**	**6**	**0**
1913	**0**	**0**	**0**	**10**	**6**	**0**
1914	**0**	**0**	**0**	**8**	**5**	**0**
1915	**0**	**0**	**0**	**9**	**6**	**0**
1916	**0**	**0**	**0**	**11**	**6**	**0**
1917	**0**	**0**	**0**	**16**	**9**	**0**
1918	**0**	**0**	**0**	**19**	**10**	**0**
1919	**0**	**0**	**0**	**20**	**11**	**0**
1920	**0**	**0**	**0**	**22**	**12**	**0**
1921	**0**	**0**	**0**	**22**	**13**	**0**
1922	**0**	**0**	**0**	**20**	**12**	**0**
1923	**0**	**0**	**0**	**21**	**12**	**0**
1924	**0**	**0**	**0**	**22**	**13**	**0**
1925	**18**	**0**	**20**	**21**	**13**	**0**
1926	**19**	**0**	**0**	**21**	**13**	**0**
1927	**18**	**0**	**0**	**21**	**13**	**0**
1928	**18**	**0**	**0**	**20**	**13**	**0**
1929	**18**	**0**	**0**	**20**	**14**	**0**
1930	**17**	**0**	**0**	**20**	**14**	**0**
1931	**16**	**0**	**0**	**20**	**14**	**0**
1932	**15**	**0**	**0**	**18**	**13**	**0**
1933	**15**	**0**	**0**	**18**	**11**	**0**
1934	**16**	**0**	**0**	**19**	**12**	**0**
1935	**16**	**0**	**0**	**19**	**13**	**0**
1936	**16**	**0**	**0**	**20**	**13**	**0**
1937	**18**	**0**	**0**	**21**	**14**	**0**
1938	**18**	**0**	**0**	**22**	**14**	**0**
1939	**18**	**0**	**20**	**22**	**14**	**0**

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #
	8	**9**	**16**	**34**	**39**	**40**
1940	**20**	**0**	**0**	**24**	**14**	**0**
1941	**0**	**0**	**0**	**0**	**15**	**0**
1942	**0**	**0**	**0**	**0**	**16**	**0**
1943	**0**	**0**	**0**	**0**	**16**	**0**
1944	**21**	**0**	**0**	**25**	**17**	**0**
1945	**22**	**0**	**0**	**26**	**17**	**0**
1946	**24**	**0**	**0**	**29**	**19**	**0**
1947	**28**	**0**	**32**	**35**	**22**	**0**
1948	**32**	**0**	**35**	**41**	**25**	**0**
1949	**35**	**0**	**36**	**42**	**27**	**52**
1950	**36**	**0**	**38**	**43**	**28**	**59**
1951	**38**	**0**	**40**	**45**	**29**	**61**
1952	**38**	**0**	**41**	**47**	**31**	**61**
1953	**39**	**0**	**42**	**48**	**33**	**65**
1954	**41**	**55**	**0**	**48**	**35**	**67**
1955	**43**	**56**	**0**	**53**	**36**	**70**
1956	**46**	**63**	**0**	**57**	**0**	**77**
1957	**49**	**69**	**50**	**60**	**41**	**78**
1958	**50**	**73**	**0**	**63**	**44**	**78**
1959	**52**	**74**	**54**	**65**	**46**	**78**
1960	**53**	**74**	**55**	**68**	**48**	**78**
1961	**53**	**71**	**56**	**69**	**50**	**78**
1962	**54**	**71**	**58**	**71**	**51**	**84**
1963	**55**	**71**	**59**	**72**	**53**	**87**
1964	**56**	**73**	**60**	**73**	**55**	**87**
1965	**57**	**74**	**62**	**74**	**58**	**93**
1966	**56**	**78**	**64**	**75**	**60**	**101**
1967	**61**	**81**	**67**	**76**	**63**	**101**
1968	**64**	**81**	**69**	**77**	**66**	**101**
1969	**69**	**84**	**73**	**80**	**72**	**106**

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #
	8	**9**	**16**	**34**	**39**	**40**
1970	**75**	**89**	**79**	**84**	**79**	**108**
1971	**84**	**93**	**89**	**94**	**89**	**108**
1972	**92**	**96**	**96**	**98**	**96**	**106**
1973	**100**	**100**	**100**	**100**	**100**	**100**
1974	**117**	**122**	**118**	**110**	**115**	**93**
1975	**127**	**155**	**134**	**146**	**123**	**93**
1976	**130**	**174**	**144**	**154**	**130**	**98**
1977	**137**	**184**	**152**	**162**	**139**	**101**
1978	**148**	**192**	**162**	**173**	**145**	**105**
1979	**163**	**205**	**175**	**185**	**160**	**108**
1980	**181**	**222**	**191**	**202**	**175**	**122**
1981	**191**	**245**	**208**	**219**	**184**	**127**
1982	**198**	**260**	**227**	**231**	**198**	**128**
1983	**206**	**271**	**242**	**239**	**207**	**141**
1984	**218**	**277**	**251**	**244**	**215**	**148**
1985	**225**	**282**	**262**	**254**	**221**	**135**
1986	**233**	**284**	**269**	**255**	**226**	**135**
1987	**239**	**299**	**276**	**263**	**230**	**137**
1988	**251**	**311**	**286**	**280**	**245**	**140**
1989	**265**	**330**	**301**	**295**	**258**	**150**
1990	**271**	**349**	**313**	**301**	**262**	**159**
1991	**274**	**355**	**322**	**307**	**272**	**162**
1992	**281**	**368**	**332**	**311**	**283**	**196**
1993	**294**	**386**	**342**	**321**	**292**	**195**
1994	**308**	**428**	**348**	**327**	**300**	**175**
1995	**316**	**442**	**357**	**332**	**307**	**200**
1996	**321**	**450**	**367**	**339**	**321**	**207**
1997	**331**	**473**	**380**	**347**	**323**	**197**
1998	**337**	**489**	**391**	**355**	**330**	**197**

	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman	Handy-Whitman
	Line #	Line #	Line #	Line #	Line #	Line #
	8	**9**	**16**	**34**	**39**	**40**
1999	**343**	**505**	**401**	**361**	**334**	**198**
2000	**362**	**530**	**413**	**377**	**348**	**205**
2001	**378**	**527**	**428**	**391**	**354**	**206**
2002	**389**	**529**	**443**	**404**	**360**	**207**
2003	**394**	**543**	**452**	**407**	**368**	**207**
2004	**421**	**572**	**466**	**432**	**388**	**207**
2005	**448**	**612**	**486**	**469**	**410**	**214**
2006	**466**	**624**	**504**	**499**	**454**	**248**
2007	**496**	**634**	**537**	**530**	**485**	**289**
2008	**538**	**663**	**586**	**588**	**514**	**373**
2009	**544**	**691**	**619**	**614**	**537**	**373**
2010	**560**	**704**	**637**	**624**	**555**	**376**
2011	**584**	**752**	**654**	**648**	**576**	**379**
2012	**604**	**788**	**680**	**687**	**598**	**379**
2013	**614**	**836**	**699**	**701**	**602**	**381**
2014	**631**	**896**	**725**	**731**	**608**	**386**
2015	**647**	**945**	**741**	**740**	**618**	**402**
2016	**661**	**1017**	**761**	**755**	**624**	**403**
2017	**675**	**1117**	**785**	**777**	**650**	**419**
2018	**704**	**1210**	**813**	**803**	**668**	**436**
2019	**716**	**1332**	**847**	**830**	**688**	**447**
2020	**735**	**1430**	**893**	**858**	**705**	**466**
2021	**818**	**1490**	**957**	**922**	**743**	**565**
2022	**901**	**1742**	**1066**	**1027**	**804**	**857**
2023	**948**	**1867**	**1151**	**1105**	**854**	**998**
2024	**974**	**1983**	**1207**	**1165**	**875**	**1074**
SPOT	**974**	**1983**	**1207**	**1165**	**875**	**1074**

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Valuation Date
12/31/2020

Returns Reference – Start Year
EARLIEST YEAR (Y

Returns Reference – End Year
2020

Returns Calculation - Mean
Arithmetic
Geometric

RPE | ERP | Size Premium | IRP | CoE | 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	$29,075,803	$1,966,078,882	11.06%	0.92	(0.75%)	

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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KROLL

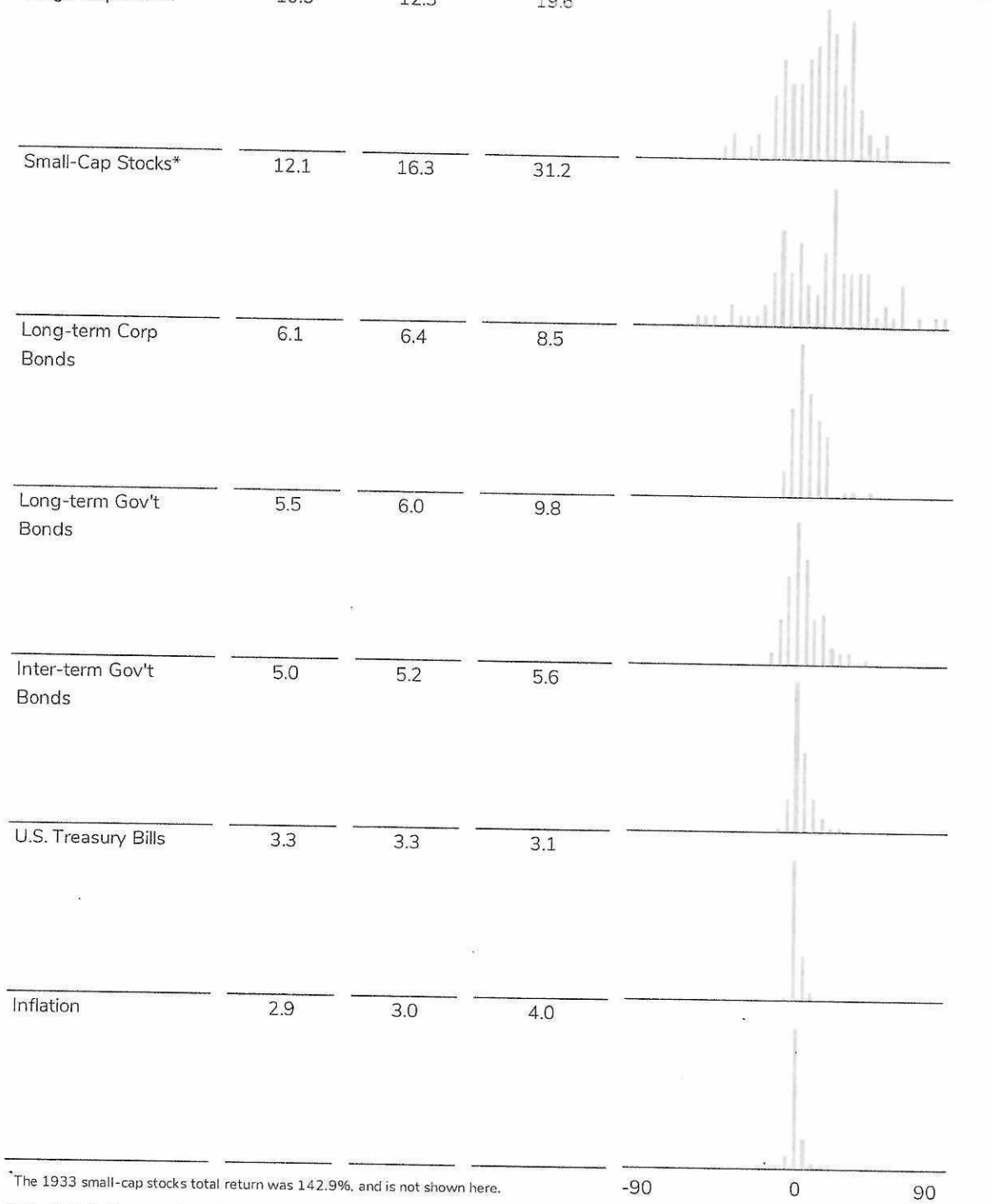
2022 SBBI® Yearbook

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

	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Serial Correlation
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 correspondently 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) increased 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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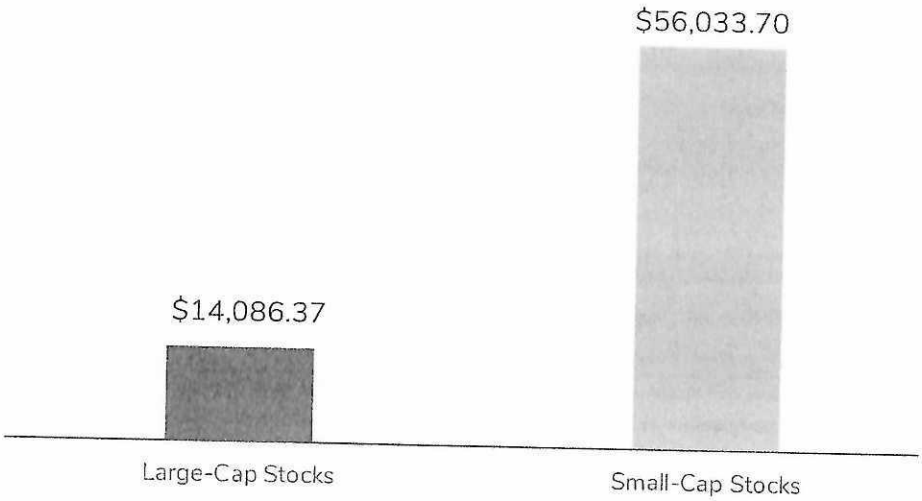
The differences in the performance of large-cap stocks and small-cap stocks can have important implications for investors. Exhibit 7.2 is a graphical depiction of the value of $1 invested at the end of 1925 in large-cap and small-cap stocks and held through December 31, 2021 (a total of 96 years).

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.

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Company Name
Gannett Fleming

Valuation Date
12/31/2020

Returns Reference – Start Year
EARLIEST YEAR (Y

Returns Reference – End Year
2020

Returns Calculation - Mean
Arithmetic
Geometric

RPE | ERP | Size Premium | IRP | CoE | 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	$29,075,803	$1,966,078,882	11.06%	0.92	(0.75%)	

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%
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9	412	$190,019	$451,800	16.69%	1.34	4.88%
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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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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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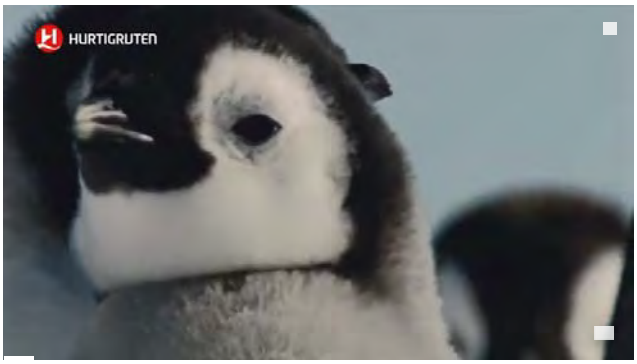

"We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals," SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

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
Table Of Contents

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			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
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

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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.

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NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Balance Sheets

	December 31, 2020	December 31, 2019
ASSETS		
Utility plant, at cost	$ 52,176,919	$ 50,866,999
Less accumulated depreciation and amortization	(17,108,971)	(16,242,563)
Net Utility Plant	35,067,948	34,624,436
Non-utility property, plant and equipment	2,340,344	2,229,441
Less: accumulated depreciation	(841,502)	(736,994)
Net Non-Utility Property, Plant and Equipment	1,498,842	1,492,447
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	51,811	52,968
Total Current Assets	2,919,799	2,710,949
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	4,263,900	4,238,900
Total Other Assets	6,551,434	6,064,758
Total Assets	$ 46,038,023	$ 44,892,590

See Notes to Consolidated Financial Statements

NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Balance Sheets *(continued)*

	December 31, 2020	December 31, 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	12,776,934	12,511,864
Total Stockholders' Equity	16,785,603	16,464,749
Long-term debt, net of current portion	9,148,153	9,349,951
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	117,927	76,874
Total Current Liabilities	1,918,519	1,477,748
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	1,668,180	1,614,180
Total Other Liabilities	18,185,748	17,601,142
Total Stockholder's Equity and Liabilities	$ 46,038,023	$ 44,893,590

See Notes to Consolidated Financial Statements

NEW ENGLAND SERVICE COMPANY, INC. AND SUBSIDIARIES

Consolidated Statements of Income

	Year Ended December 31, 2020	2019
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	7,994,088	7,642,073
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	6,781,526	6,642,787
Income from Operations	1,212,562	999,286
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	30,667	76,263
Income Before Income Taxes	1,243,229	1,075,549
Income tax expense	310,230	289,200
Net Income	$ 932,999	$ 786,349
PER SHARE AMOUNTS		
Weighted average shares outstanding	902,454	897,030
Net income	$ 1.03	$ 0.88
Dividends	$ 0.74	$ 0.70
Book value	$ 18.60	$ 18.35

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.

subsidiary water companies, serving approximately 200,000 customers in 52 towns and cities with a population of approximately 674,000 throughout Connecticut's seven counties.[2] A map showing AWC-CT's current service area is attached to the Joint Application as Exhibit I. AWC-CT has provided water and water services to Connecticut residents and customers continuously since 1857. AWC-CT is well known to PURA and well respected by the water industry in Connecticut, and nationally. AWC-CT had over $1.68 billion of utility plant assets as of December 31, 2020 and operating revenues of $189.6 million in 2020.

Q. Please describe New England Service Company.

A. NESC is a Connecticut stock corporation. NESC was formed in 1996 as a holding company to operate in both regulated and unregulated water utility markets. NESC has one regulated water distribution operating subsidiary in Connecticut. VWS, a utility established in 1884 as the Plainville Water Company, delivers water to over 6,800 customers or a population of approximately 18,000 in Plainville, Southington, and Farmington, Connecticut. A map showing VWS' current service area is attached to the Joint Application as Exhibit I.

In addition to owning VWS, NESC is also the sole stockholder of Colonial Water Company, a utility that provides water to about 1,530 customers in Dover and Plymouth, Massachusetts; Mountain Water Systems, a utility that provides water to about 490 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.

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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 stockholdcrs 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 I 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 or 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.

Appendix A-5.2

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
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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	26,458,744	25,210,076	24,139,469
Net utility plant	48,541,049	46,637,775	44,918,142
Nonutility property, net of accumulated depreciation	202,624	372,935	372,935
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	168,630	183,413	132,139
Total Current Assets	4,000,978	5,581,388	3,543,705
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	3,371,985	3,205,165	3,038,255
Total Other Assets	12,972,822	12,333,440	12,206,171
Total Assets	$65,717,473	$64,925,538	$61,040,953

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	21,930,762	21,326,808	20,524,284
Total Stockholders' Equity	23,730,762	23,126,808	22,324,284
Long-term debt, net	12,305,080	12,656,619	10,515,289
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	113,561	131,691	133,408
Total Current Liabilities	1,340,846	1,953,468	1,620,205
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	2,653,790	2,576,591	2,499,392
Total Other Liabilities	28,340,785	27,188,643	26,581,175
Total Stockholders' Equity and Liabilities	$65,717,473	$64,925,538	$61,040,953

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	7,835,144	7,718,692	7,480,222
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	5,922,294	5,909,087	5,569,731
Utility Operating Income	1,912,850	1,809,605	1,910,491
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	381,677	591,828	270,495
Income Before Interest Expense	2,294,527	2,401,433	2,180,986
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	498,253	475,709	455,648
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	$21,930,762	$21,326,808	$20,524,284
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

AMER. STATES WATER NYSE-AWR

RECENT PRICE 70.45 | P/E RATIO 25.2 (Trailing: 21.0 / Median: 30.0) | RELATIVE P/E RATIO 1.38 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 3 Lowered 12/1/23
SAFETY 1 Raised 4/5/24
TECHNICAL 3 Raised 3/29/24
BETA .70 (1.00 = Market)

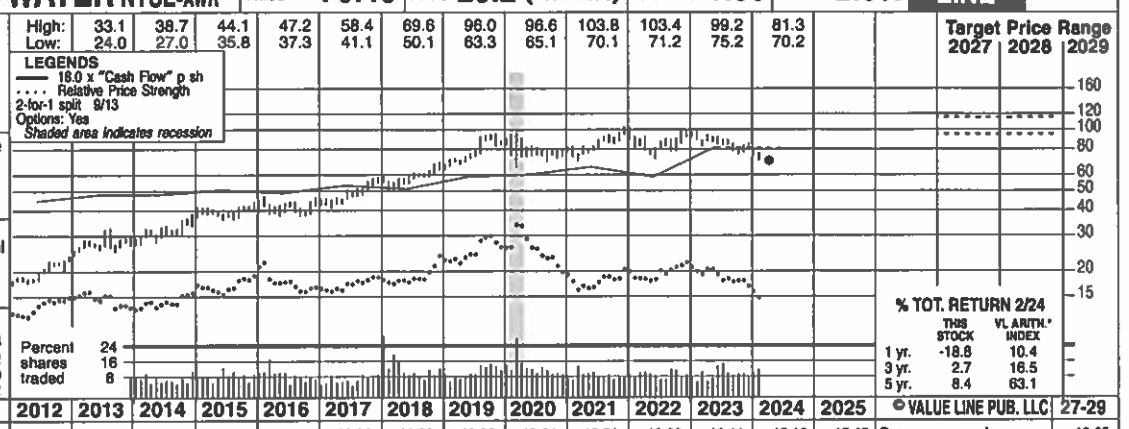
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$63-$127 $95 (35%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	115	(+65%)	15%
Low	95	(+35%)	10%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	141	158	152
to Sell	138	133	140
Hld's(000)	27816	28119	28792



% TOT. RETURN 2/24

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-18.8	10.4
3 yr.	2.7	16.5
5 yr.	8.4	63.1

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
High:	33.1	38.7	44.1	47.2	58.4	69.6	96.0	96.6	103.8	103.4	99.2	81.3								
Low:	24.0	27.0	35.8	37.3	41.1	50.1	63.3	65.1	70.1	71.2	75.2	70.2								
	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.86	13.24	13.51	13.30	16.11	*15.10*	*15.45*	Revenues per sh	*18.65*
	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.70	2.96	2.84	3.26	3.34	3.64	3.25	4.55	*4.20*	*4.50*	"Cash Flow" per sh	*5.30*
	.78	.81	1.11	1.12	1.41	1.61	1.57	1.61	1.62	1.88	1.72	2.28	2.33	2.55	2.11	3.37	*3.00*	*3.25*	Earnings per sh A	*3.90*
	.50	.51	.52	.55	.64	.76	.83	.87	.91	.99	1.06	1.16	1.28	1.40	1.53	1.66	*1.80*	*1.95*	Div'd Decl'd per sh B■	*2.50*
	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	3.55	3.08	3.44	4.12	3.54	3.91	4.50	5.10	*5.00*	*5.05*	Cap'l Spending per sh	*4.75*
	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.52	14.45	15.19	16.33	17.39	18.57	19.20	20.99	*22.25*	*23.65*	Book Value per sh D	*31.75*
	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.57	36.68	36.76	36.85	36.89	36.94	36.96	36.98	*37.10*	*37.20*	Common Shs Outst'g C	*37.50*
	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	34.4	34.3	33.2	41.0	25.7	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	*27.0*
	1.36	1.41	1.00	.97	.91	.97	1.06	1.24	1.34	1.29	1.84	1.83	1.76	1.79	2.37	1.44			Relative P/E Ratio	*1.50*
	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.5%	1.6%	1.7%	1.8%	1.9%			Avg Ann'l Div'd Yield	*2.4%*
							465.8	458.6	436.1	440.6	436.8	473.9	488.2	498.9	491.5	595.7	*560*	*575*	Revenues ($mill)	*700*
							61.1	60.5	59.7	69.4	63.9	84.3	86.4	94.3	78.4	124.9	*110*	*120*	Net Profit ($mill)	*145*
							38.4%	38.4%	36.8%	36.0%	22.0%	22.6%	24.6%	24.4%	23.2%	25.0%	*25.0%*	*25.0%*	Income Tax Rate	*25.0%*
							--	--	--	--	--	--	--	--	2.5%	--	*Nil*	*Nil*	AFUDC % to Net Profit	*Nil*
							39.1%	41.1%	39.4%	38.0%	40.5%	44.4%	47.2%	46.1%	39.9%	52.8%	*55.0%*	*54.0%*	Long-Term Debt Ratio	*52.5%*
							60.9%	58.9%	60.6%	62.0%	59.5%	55.6%	52.8%	53.9%	60.1%	47.2%	*45.0%*	*46.0%*	Common Equity Ratio	*47.5%*
							832.6	791.5	815.3	854.9	938.4	1082.5	1216.2	1272.6	1181.5	1643.2	*1725*	*1920*	Total Capital ($mill)	*2510*
							1003.5	1060.8	1150.9	1205.0	1296.3	1415.7	1512.0	1626.0	1753.8	1892.3	*2020*	*2150*	Net Plant ($mill)	*2525*
							8.6%	9.0%	8.6%	9.3%	7.9%	8.9%	8.0%	8.3%	7.6%	8.8%	*7.5%*	*7.5%*	Return on Total Cap'l	*7.5%*
							12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.8%	11.0%	16.1%	*13.5%*	*13.5%*	Return on Shr. Equity	*12.0%*
							12.0%	13.0%	12.1%	13.1%	11.4%	14.0%	13.5%	13.8%	11.0%	16.1%	*13.5%*	*13.5%*	Return on Com Equity	*12.0%*
							5.7%	6.0%	5.3%	6.2%	4.5%	6.9%	6.1%	6.2%	3.1%	8.2%	*4.5%*	*5.5%*	Retained to Com Eq	*4.5%*
							53%	54%	56%	52%	61%	51%	55%	55%	72%	49%	*60%*	*60%*	All Div'ds to Net Prof	*64%*

CAPITAL STRUCTURE as of 12/31/23
Total Debt $909.5 mill. Due in 5 Yrs $106.7 mill.
LT Debt $867.1 mill. LT Interest $40.0 mill.
(43% of Cap'l)

Leases, Uncapitalized: Annual rentals $2.2 mill.
Pension Assets-12/23 $203.0 mill.
Oblig. $205.3 mill.

Pfd Stock None

Common Stock 36,988,764 shs.
as of 2/10/24

MARKET CAP: $2.6 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	5.0	6.0	14.1
Accts Receivable	34.4	26.2	34.3
Other	98.7	119.1	157.6
Current Assets	138.1	151.3	206.0
Accts Payable	65.9	84.9	68.7
Debt Due	31.4	255.9	42.4
Other	58.3	55.7	55.5
Current Liab.	155.6	396.5	166.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	2.0%	3.5%	*4.5%*
"Cash Flow"	4.5%	6.0%	*5.5%*
Earnings	7.0%	9.0%	*6.5%*
Dividends	9.0%	9.0%	*8.5%*
Book Value	5.0%	6.5%	*11.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	117.1	128.4	136.8	116.6	498.9
2022	108.6	122.5	135.0	125.4	491.5
2023	161.4	157.4	151.7	125.2	595.7
2024	*120*	*138*	*162*	*140*	*560*
2025	*123*	*142*	*165*	*145*	*575*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	.52	.72	.76	.55	2.55
2022	.38	.54	.69	.50	2.11
2023	.93	1.04	.85	.55	3.37
2024	*.60*	*.80*	*.85*	*.75*	*3.00*
2025	*.65*	*.88*	*.92*	*.80*	*3.25*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.305	.305	.335	.335	1.28
2021	.335	.335	.365	.365	1.40
2022	.365	.365	.3975	.3975	1.53
2023	.3975	.3975	.43	.43	1.66
2024	.43				

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Co., it supplies water to 264,093 customers in 10 California counties. Service areas include the metropolitan areas of Los Angeles and Orange Counties. The company also provides electricity to 24,777 customers in Big Bear Lake and San Bernardino Cnty. Provides water & wastewater services to U.S. military bases through its ASUS subsidiary. Sold Chaparral City Wtr. of AZ. (6/11). Employs 815. BlackRock, Inc. owns 18.6% of out. shares; State St., 16.6%; off. & dir., 0.8% (4/23 Proxy). Chair.: Anne M. Holloway. Pres. & CEO: Robert Sprowls. Inc: CA. Address: 630 East Foothill Blvd., San Dimas, CA 91773. Tel.: 909-394-3600. Int.: www.aswater.com.

Shares of American States Water have performed poorly of late. Since our early January report, the price of the equity has fallen 15% in value, By comparison, the S&P 500 Index has increased by around 10%. The negative sentiment may be the result California's regulators being viewed negatively by investors (another water utility in the state, SJW Group, has also seen its stock decline). We think these concerns may be overblown, however.

California's regulatory procedures can lead to uneven earnings. Utilities in the state are required to petition for rates relief triennially. Despite filing three years in advance, final decisions can be delayed, as was the case last time for AWR's Golden State subsidiary. When the implementation of increased rates are deferred, the utility has to absorb expenses caused by inflation. The good news is that once a decision is rendered, the new rates are applied retroactively. This is why American States posted poor earnings in 2022 followed by a nearly 60% spike last year.

Despite possible regulatory headwinds, AWR's bottom line ought to be respectable this year and improve in 2025. The company's share earnings will likely fall in 2024 due to the difficult comparison. Assuming inflation remains near its current 3% level, earnings per share could recover to $3.25 next year. Helping to boost profits will be the company's ASUS nonregulated subsidiary. This business has been successful in procuring 50-year contracts to help the United States military privatize the water systems on its operating bases. Returns on investments here are not capped, as is the case with utilities.

This out-of-favor, neutrally ranked equity may appeal to long-term conservative investors. Over the next 18 months, the stock has very attractive appreciation potential. Looking further out to 2027-2029, AWR's total return prospects are bright as well, especially on a risk-adjusted basis. The company has solid finances, a very low Beta, and a 1 (Highest) Safety rank. AWR has the top score (100) for Price Stability and its dividend growth is expected to be in the range of 8% to 9% annually, too.

James A. Flood *April 5, 2024*

(A) Primary earnings. Excludes nonrecurring gains/(losses):; '08, (14¢); '10, (2¢); '11, 10¢. Next earnings report due mid-May.
(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 12/31/23; $1.1 million/$0.03 a share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	85
Earnings Predictability	85

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To subscribe call 1-800-VALUELINE

AMERICAN WATER NYSE-AWK

RECENT PRICE 117.14 | P/E RATIO 22.6 (Trailing: 23.9) (Median: 29.0) | RELATIVE P/E RATIO 1.23 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 3 Raised 3/15/24
SAFETY 3 New 7/25/08
TECHNICAL 3 Raised 2/2/24
BETA .95 (1.00 = Market)

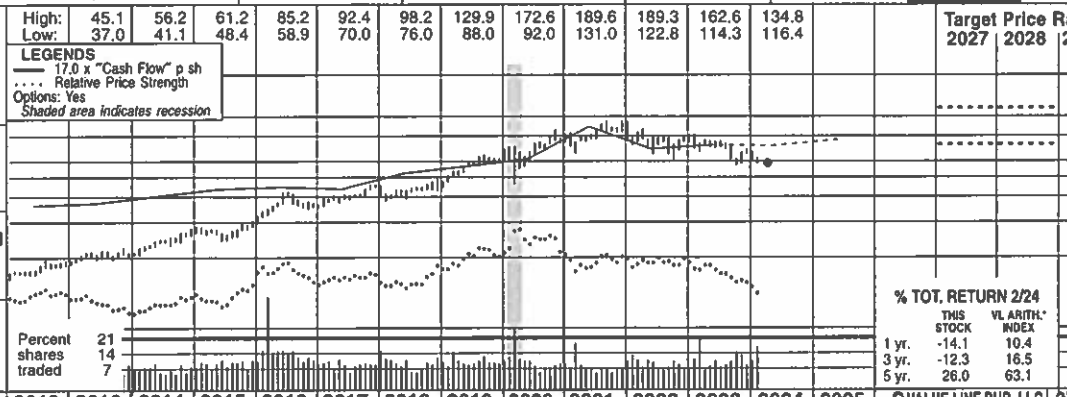
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$100-$198 $149 (25%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	220	(+90%)	19%
Low	145	(+25%)	8%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	436	441	491
to Sell	418	460	468
Hld's(000)	166259	177196	175761



2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.54	18.81	19.04	19.97	20.83	21.58	20.85	21.74	*22.90*	*24.40*	Revenues per sh	*27.50*
2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.26	5.14	6.15	6.65	7.24	10.46	8.08	8.46	*9.10*	*9.70*	"Cash Flow" per sh	*12.00*
1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.62	2.38	3.15	3.43	3.91	6.95	4.51	4.90	*5.25*	*5.65*	Earnings per sh A	*7.00*
.40	.82	.86	.90	1.21	.84	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.36	2.57	2.78	*2.99*	*3.20*	Div'd Decl'd per sh B■	*4.10*
6.31	4.50	4.38	5.27	5.25	5.50	5.33	6.51	7.36	8.04	8.78	9.15	10.05	9.71	12.63	13.22	*15.25*	*15.30*	Cap'l Spending per sh	*15.25*
25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.24	30.13	32.42	33.83	35.58	40.18	42.30	50.31	*52.95*	*55.60*	Book Value per sh D	*62.75*
160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.10	178.44	180.68	180.81	181.30	181.61	181.86	194.73	*195.50*	*196.00*	Common Shs Outst'g C	*202.00*
18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	27.7	33.8	27.3	32.9	35.3	23.6	33.6	28.6	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*26.0*
1.14	1.04	.93	1.05	1.06	1.12	1.05	1.03	1.45	1.70	1.47	1.75	1.81	1.28	1.94	1.60			Relative P/E Ratio	*1.45*
1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.0%	2.0%	2.1%	1.7%	1.6%	1.4%	1.7%	2.0%			Avg Ann'l Div'd Yield	*2.2%*
						3011.3	3159.0	3302.0	3357.0	3440.0	3610.0	3777.0	3920.0	3792.0	4234.0	*4480*	*4780*	Revenues ($mill)	*5550*
						429.8	476.0	468.0	426.0	567.0	621.0	709.0	1263.0	820.0	944.0	*1025*	*1105*	Net Profit ($mill)	*1415*
						39.4%	39.1%	39.2%	53.3%	28.2%	25.5%	23.3%	23.0%	18.7%	21.1%	*21.5%*	*21.5%*	Income Tax Rate	*22.0%*
						--	--	--	--	--	--	--	--	5.1%	2.9%	*3.5%*	*3.5%*	AFUDC % to Net Profit	*4.0%*
						52.4%	53.7%	52.4%	54.7%	56.3%	58.5%	59.1%	58.6%	58.7%	54.5%	*56.0%*	*57.5%*	Long-Term Debt Ratio	*40.0%*
						47.4%	46.2%	47.5%	45.3%	43.6%	41.4%	40.9%	41.4%	41.3%	45.5%	*44.0%*	*42.5%*	Common Equity Ratio	*60.0%*
						10364	10911	10967	11875	13433	14760	15787	17639	18619	21512	*23675*	*25750*	Total Capital ($mill)	*31700*
						12900	13933	14992	16246	17409	18232	19710	21084	23223	25438	*27500*	*29800*	Net Plant ($mill)	*35800*
						5.5%	5.7%	5.6%	4.9%	5.4%	5.4%	5.7%	8.2%	5.5%	5.4%	*5.5%*	*5.5%*	Return on Total Cap'l	*6.5%*
						8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	17.3%	10.7%	9.6%	*10.0%*	*10.0%*	Return on Shr. Equity	*11.0%*
						8.7%	9.4%	9.0%	7.9%	9.7%	10.1%	11.0%	17.3%	10.7%	9.6%	*10.0%*	*10.0%*	Return on Com Equity	*11.0%*
						4.3%	4.7%	4.0%	2.5%	4.2%	4.4%	5.0%	11.4%	4.6%	4.2%	*4.5%*	*4.5%*	Retained to Com Eq	*4.5%*
						50%	50%	56%	68%	56%	57%	55%	34%	57%	56%	*57%*	*57%*	All Div'ds to Net Prof	*59%*

CAPITAL STRUCTURE as of 12/31/23
Total Debt $12369 mil. Due in 5 Yrs $4140 mil.
LT Debt $11715 mil. LT Interest $449 mil. (54% of Cap'l)

Leases, Uncapitalized: Annual rentals $10.0 mil.
Pension Assets 12/23 $1622.0 mill
Oblig. $1431.0 mill.
Pfd Stock $2.0 mill. Pfd Div'd $.1 mill

Common Stock 194,755,320 shares as of 2/26/24

MARKET CAP: $22.8 billion (Large Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	136	117	364
Accts Receivable	271	334	339
Other	1147	799	686
Current Assets	1554	1250	1389
Accts Payable	235	254	294
Debt Due	641	1456	179
Other	1265	1101	1678
Current Liab.	2141	2811	2151

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	3.0%	2.5%	*4.0%*
"Cash Flow"	8.0%	10.5%	*3.0%*
Earnings	11.0%	15.0%	*3.0%*
Dividends	10.0%	9.5%	*8.5%*
Book Value	6.0%	7.5%	*6.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	888	999	1082	951	3920
2022	842	937	1082	931	3792
2023	938	1097	1167	1032	4234
2024	*1000*	*1160*	*1260*	*1060*	*4480*
2025	*1075*	*1230*	*1340*	*1135*	*4780*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	.73	1.14	1.53	3.55	6.95
2022	.87	1.20	1.63	.81	4.51
2023	.91	1.45	1.66	.88	4.90
2024	*1.00*	*1.50*	*1.80*	*.95*	*5.25*
2025	*1.10*	*1.60*	*1.95*	*1.00*	*5.65*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.50	.55	.55	.55	2.15
2021	.55	.6025	.6025	.6025	2.36
2022	.6025	.655	.655	.655	2.57
2023	.655	.7075	.7075	.7075	2.28
2024	.7075				

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 93% of 2023 revenues. New Jersey and Pennsylvania are its largest markets accounting for 24.6% of regulated revenues; Missouri, 10.5%. Has 6,500 employees. Vanguard owns 11.7% of outstanding shares; BlackRock, 8.6%; State St., 5.4%; officers & directors, less than 1.0% (3/23 Proxy). President & Chief Executive Officer: M. Susan Hardwick. . Address: 1 Water Street, Camden, NJ 08102. Telephone: 856-346-8200. Internet: www.amwater.com.

American Water Works ought to raise its dividend by a healthy amount later this month. Typically, the water utility announces its annual increase in the quarterly distribution in late April. We estimate that the hike will be 7.5%, to approximately $0.76 a share. What's more, we look for a 7% increase next year.

Earnings prospects are bright for both this year and next. Due mostly to the company's good cost-control program, acquisition strategy (more below), prudent capital spending, and overall constructive relationship with regulators, American Water has managed to post close to double-digit earnings and dividend gains over the past five- and 10-year periods. (See Annual Rates box in left hand side of the page.) While we think that this pace may slow to closer to 7% in the near term, share earnings of $5.25 and $5.65 are likely for 2024 and 2025, respectively.

The construction budget is massive, but manageable. In a March presentation, leadership estimated that it would spend $14.5 billion to $15.0 billion from 2024-2028 on upgrading and modernizing its existing pipelines and wastewater treatment centers. This is $2 billion more than the previous projection. Currently, debt accounts for just 54% of total capital, but this ratio may to increase to a still reasonable 60% by late decade.

Acquisitions ought to remain a catalyst to the company's bottom-line growth. As the largest publicly traded domestic water utility, American Water will probably spend about $400 million each year to buy small independently run municipal water districts. Through these mergers, the company is able to realize significant cost savings via synergies.

These neutrally ranked shares might interest long-term accounts looking for dividend growth. Since our last report three months ago, the price of the stock has declined 10%, while the broader markets are up 10%. Thus, for the first time in years, AWK has worthwhile total return potential over the next three- to five-year period. The equity is also expected to perform well over the next 18-months. Risk-averse investors will also like the predictability of the cash flow generated by the company.

James A. Flood *April 5, 2024*

(A) Diluted earnings. Excludes nonrecur. 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 late mid-May.
(B) Dividends paid in March, June, September, and December. ■ Div. reinvestment available.
(C) In millions. (D) Includes intangibles. On 12/31/23: $1.229 billion, $6.31/share.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	70
Earnings Predictability	60

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE 45.70 | P/E RATIO 19.7 (Trailing: 48.6 Median: 29.0) | RELATIVE P/E RATIO 1.08 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 4 Raised 3/15/24
SAFETY 2 Raised 4/5/24
TECHNICAL 3 Raised 4/5/24
BETA .75 (1.00 = Market)

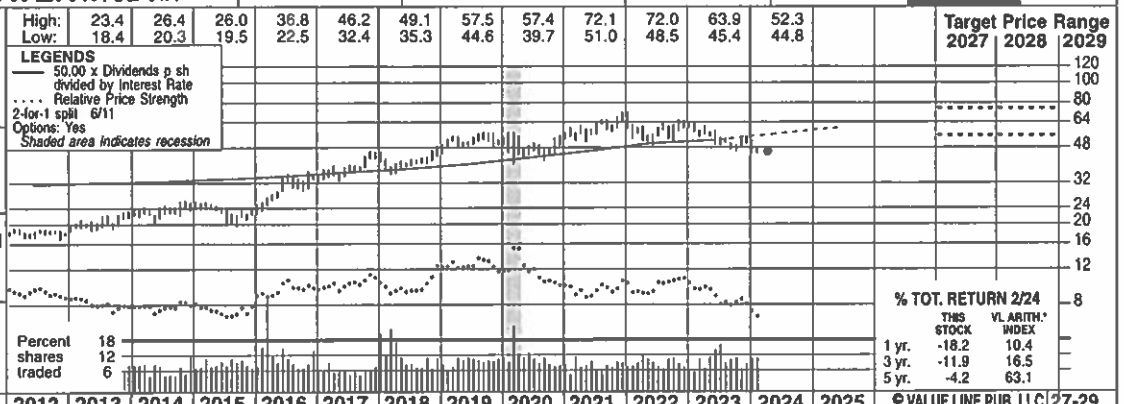
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$39-$78 $59 (30%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+65%)	15%
Low	55	(+20%)	7%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	139	125	128
to Sell	129	127	131
Hld's(000)	46985	48886	49232



2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
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	15.22	13.77	*16.10*	*17.45*	Revenues per sh	*19.80*
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	3.79	3.03	*3.80*	*4.05*	"Cash Flow" per sh	*4.35*
.95	.98	.91	.86	1.02	1.02	1.19	.94	1.01	1.40	1.36	1.31	1.97	1.96	1.77	.91	*2.35*	*2.55*	Earnings per sh [A]	*2.75*
.59	.59	.60	.62	.63	.64	.65	.67	.69	.72	.75	.79	.85	.92	1.00	1.04	*1.12*	*1.20*	Div'd Decl'd per sh [B] ■	*1.40*
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	5.90	6.65	*6.15*	*6.25*	Cap'l Spending per sh	*6.45*
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	23.70	24.72	*27.00*	*28.30*	Book Value per sh [C]	*30.90*
41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	47.97	48.01	48.07	48.53	50.33	53.72	55.60	57.72	*55.00*	*53.00*	Common Shs Outst'g [D]	*50.00*
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	33.0	59.4	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
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	1.65	1.91	3.32			Relative P/E Ratio	*1.30*
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%	1.9%			Avg Ann'l Div'd Yield	*2.1%*
						597.5	588.4	609.4	666.9	698.2	714.6	794.3	790.9	846.4	794.6	*885*	*925*	Revenues ($mill) [E]	*990*
						56.7	45.0	48.7	67.2	65.6	63.1	96.8	101.1	96.0	51.9	*129*	*135*	Net Profit ($mill)	*138*
						33.0%	36.0%	35.5%	30.1%	24.5%	19.1%	11.1%	20.1%	3.3%	3.3%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						2.7%	4.3%	6.1%	3.5%	3.1%	5.8%	3.3%	1.7%	1.7%	1.7%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
						40.1%	44.4%	44.6%	42.7%	49.3%	50.2%	45.9%	47.3%	44.4%	42.5%	*39.5%*	*39.0%*	Long-Term Debt Ratio	*37.0%*
						59.9%	55.6%	55.4%	57.3%	50.7%	49.8%	54.1%	52.7%	55.6%	57.5%	*60.5%*	*61.0%*	Common Equity Ratio	*63.0%*
						1045.9	1154.4	1191.2	1209.3	1440.2	1566.7	1702.4	2233.4	2370.1	2479.5	*2460*	*2450*	Total Capital ($mill)	*2445*
						1590.4	1701.8	1859.3	2048.0	2232.7	2406.4	2650.6	2846.9	3058.9	3773.3	*3825*	*3900*	Net Plant ($mill)	*4000*
						6.3%	5.2%	5.5%	7.1%	5.9%	5.5%	7.0%	5.5%	5.0%	3.1%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
						9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	8.6%	7.3%	3.6%	*8.5%*	*9.0%*	Return on Shr. Equity	*9.0%*
						9.1%	7.0%	7.4%	9.7%	9.0%	8.1%	10.5%	8.6%	7.3%	3.6%	*8.5%*	*9.0%*	Return on Com Equity	*9.0%*
						4.1%	2.0%	2.4%	4.7%	4.0%	3.2%	6.0%	4.6%	3.2%	NMF	*4.5%*	*5.0%*	Retained to Com Eq	*4.5%*
						55%	71%	68%	51%	55%	60%	43%	47%	56%	114%	*48%*	*47%*	All Div'ds to Net Prof	*51%*

CAPITAL STRUCTURE as of 12/31/23
Total Debt $1233.5 mill. Due In 5 Yrs $357.0 mill.
LT Debt $1052.8 mill. LT Interest $40.0 mill.
(Total interest coverage: 2.4x) (42% of Cap'l)

Pension Assets-12/23 $716.3 mill.
Oblig. $710.8 mill.

Pfd Stock None

Common Stock 57,724,000 shs.

MARKET CAP: $2.6 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	78.4	62.1	39.6
Other	222.1	233.4	256.7
Current Assets	300.5	295.5	296.3
Accts Payable	144.4	141.0	157.3
Debt Due	40.2	73.3	180.7
Other	72.0	80.4	92.3
Current Liab.	256.6	294.7	430.3

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 497,700 customers in 100 communities in the state of California. Accounts for about 90% 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, '23: residential, 67%; business, 20%; industrial, 3%; public authorities, 5%; other 5%. Off. and dir. own 1% of common stock (4/23 proxy). Has 1,184 employees. Pres. and CEO: Martin A. Kropelnicki. Inc.: DE. Addr.: 1720 North First St., San Jose, CA 95112-4598. Tel.: 408-367-8200. Internet: www.calwatergroup.com.

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	1.5%	1.0%	*5.0%*
"Cash Flow"	5.0%	5.0%	*3.5%*
Earnings	5.0%	4.0%	*10.0%*
Dividends	4.5%	6.5%	*6.0%*
Book Value	7.5%	10.0%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) [E] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2021	147.7	213.1	256.7	173.4	790.9
2022	173.0	206.2	266.3	200.9	846.4
2023	131.1	194.0	255.0	214.5	794.6
2024	*180*	*210*	*275*	*220*	*885*
2025	*195*	*220*	*285*	*225*	*925*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2021	d.06	.75	1.20	.07	1.96
2022	.02	.36	1.03	.35	1.77
2023	d.40	.17	.60	.52	.91
2024	*.20*	*.60*	*1.00*	*.55*	*2.35*
2025	*.25*	*.65*	*1.05*	*.60*	*2.55*

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.2125	.2125	.2125	.2125	.85
2021	.230	.230	.230	.230	.92
2022	.250	.250	.250	.250	1.00
2023	.260	.260	.260	.260	1.04
2024	.280				

California Water Service Group recently received a favorable decision from the California Public Utilities Commission on its previously pending rate case and infrastructure plan. Specifically, the approval, which came in early March, allows the company to increase revenues by more than $30 million for both 2024 and 2025, along with retroactively recouping revenues from 2023. An inflation adjustment was also factored into the approval. Moreover, California Water has been authorized to invest more than $1 billion on critical infrastructure projects over the next few years. In previous years, the regulated water utility has completed the vast majority of projects approved by regulators within the capital budget. Going forward, we expect much of the same, as management seeks to aggressively upgrade and invest in its aging water infrastructure systems and treatment facilities.

Top- and bottom-line expansion is likely on tap for 2024 and 2025. Based on our model, we look for revenues to increase 11% and 5% this year and next, to $885 million and $925 million, respectively. Meanwhile, profitability should stabilize from here. Consumer water consumption, which has been somewhat soft of late, should improve, while burdensome income tax expenses and operating costs are poised to ease up a bit. On balance, we think a sharp bottom-line rebound is probable this year, followed by a notably more modest advance in 2025.

The board of directors recently raised the quarterly dividend payment 8%, to $0.28 per share. The increase largely stemmed from a notably improved profit outlook and resilient business model. Historically, California Water has a strong track record of annual dividend hikes, which we believe ought to remain intact.

California Water stock is ranked to trail the broader market averages over the coming six to 12 months (Timeliness: 4). Capital appreciation potential over the 3- to 5-year time frame does not particularly stand out, either. That said, the current yield outpaces the *Value Line* median by nearly 40 basis points and, thus may intrigue conservative, income-oriented subscribers.

Nicholas Patrikis *April 5, 2024*

(A) Basic EPS. Excl. nonrecurring gain (loss): '11, 4c. Next earnings report due late May.
(B) Dividends historically paid in late Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. intangible assets. In '23 : $37.0 mill., $0.64/sh.
(D) In millions, adjusted for split.
(E) Excludes non-regulated revenues.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	75
Earnings Predictability	55

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ESSENTIAL UTIL. NYSE-WTRG

RECENT PRICE 36.35 | P/E RATIO 18.6 (Trailing: 19.5 Median: 26.0) | RELATIVE P/E RATIO 1.02 | DIV'D YLD 3.5% | VALUE LINE

TIMELINESS 4 Lowered 12/22/23
SAFETY 2 Raised 4/5/24
TECHNICAL 3 Raised 2/9/24
BETA 1.00 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$30-$61 $46 (25%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	75	(+105%)	23%
Low	50	(+40%)	12%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	246	254	322
to Sell	295	275	236
Hld's(000)	195095	204460	207792

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
High:	28.1	28.2	31.1	35.8	39.6	39.4	47.3	54.5	53.9	53.7	49.3	38.9								
Low:	20.6	22.4	24.4	28.0	29.4	32.1	32.7	30.4	41.1	38.5	32.1	33.9								
	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	8.68	7.52	*8.55*	*9.05*	Revenues per sh	*10.75*
	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	2.98	3.08	*3.35*	*3.60*	"Cash Flow" per sh	*4.35*
	.58	.62	.72	.83	.87	1.16	1.20	1.14	1.32	1.35	1.08	1.04	1.12	1.67	1.77	1.86	*2.00*	*2.15*	Earnings per sh	*2.65*
	.41	.44	.47	.50	.54	.58	.63	.69	.74	.79	.85	.91	.97	1.04	1.11	1.19	*1.27*	*1.35*	Div'd Decl'd per sh	*1.75*
	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	4.03	4.39	*5.10*	*5.10*	Cap'l Spending per sh	*5.00*
	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	20.39	21.57	*22.90*	*23.55*	Book Value per sh	*27.25*
	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.39	177.71	178.09	220.76	245.39	252.87	263.74	273.30	*276.00*	*279.00*	Common Shs Outst'g	*268.00*
	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	26.6	21.6	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
	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	1.53	1.54	1.21			Relative P/E Ratio	*1.35*
	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.3%	2.4%	2.4%	2.2%	2.2%	2.2%	2.4%	3.0%			Avg Ann'l Div'd Yield	*2.8%*
							779.9	814.2	819.9	809.5	838.1	889.7	1462.7	1878.1	2288.0	2053.8	*2360*	*2520*	Revenues ($mill)	*3100*
							213.9	201.8	234.2	239.7	192.0	224.5	284.8	431.6	465.2	498.2	*550*	*600*	Net Profit ($mill)	*765*
							10.5%	6.9%	8.2%	6.6%	--	--	--	--	--	--	*5.0%*	*10.0%*	Income Tax Rate	*20.0%*
							2.4%	3.1%	3.8%	6.3%	6.8%	7.2%	4.5%	4.8%	1.3%	2.2%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.0%*
							48.5%	50.3%	48.4%	50.6%	54.4%	43.1%	54.0%	52.7%	54.2%	53.7%	*54.0%*	*54.5%*	Long-Term Debt Ratio	*55.0%*
							51.5%	49.7%	51.6%	49.4%	45.6%	56.9%	46.0%	47.3%	45.8%	46.3%	*46.0%*	*45.5%*	Common Equity Ratio	*45.0%*
							3216.0	3469.5	3587.7	3965.4	4407.8	6824.2	10192	10964	11748	12722	*13725*	*14475*	Total Capital ($mill)	*17350*
							4402.0	4688.9	5001.6	5399.9	5930.3	6345.8	9512.9	10252	11131	12097	*13000*	*14025*	Net Plant ($mill)	*17100*
							7.8%	6.9%	7.6%	7.1%	5.5%	4.2%	3.7%	4.8%	5.0%	5.0%	*5.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
							12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	8.3%	8.7%	8.5%	*8.5%*	*9.0%*	Return on Shr. Equity	*9.5%*
							12.9%	11.7%	12.7%	12.2%	9.6%	5.8%	6.1%	8.3%	8.7%	8.5%	*8.5%*	*9.0%*	Return on Com Equity	*9.5%*
							6.1%	4.7%	5.6%	5.1%	2.1%	.9%	1.1%	3.3%	3.3%	3.1%	*3.0%*	*3.5%*	Retained to Com Eq	*3.5%*
							52%	60%	56%	59%	79%	84%	82%	60%	62%	64%	*64%*	*63%*	All Div'ds to Net Prof	*66%*

% TOT. RETURN 2/24

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-16.0	10.4
3 yr.	-10.5	16.5
5 yr.	8.9	63.1

CAPITAL STRUCTURE as of 12/31/23
Total Debt $7053.6 mill. Due in 5 Yrs $1201 mill.
LT Debt $6826.1mill. LT Interest $263.0 mill.
(54% of Cap'l)

Pension Assets-12/23 $312.3 mill.
Oblig. $313.7 mill.

Pfd Stock None
Common Stock 273,298,409 shares
as of 2/23/24

MARKET CAP: $9.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	10.6	11.4	4.6
Receivables	141.0	206.3	144.3
Inventory (AvgCst)	109.6	46.6	47.5
Other	176.6	393.9	295.6
Current Assets	437.8	658.2	492.0
Accts Payable	192.9	238.8	221.2
Debt Due	197.1	427.9	227.5
Other	285.1	355.2	349.0
Current Liab.	675.1	1021.9	797.7

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	6.5%	11.0%	*5.5%*
"Cash Flow"	6.5%	8.0%	*6.5%*
Earnings	6.5%	7.0%	*7.0%*
Dividends	7.5%	7.0%	*8.0%*
Book Value	10.0%	14.0%	*4.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2021	583.5	397.0	361.9	535.7	1878.1
2022	699.3	448.7	434.6	705.4	2288.0
2023	726.5	436.7	411.1	479.5	2053.8
2024	*750*	*460*	*460*	*690*	*2360*
2025	*790*	*500*	*500*	*730*	*2520*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2021	.72	.32	.19	.44	1.67
2022	.76	.31	.26	.44	1.77
2023	.72	.34	.30	.50	1.86
2024	*.73*	*.37*	*.35*	*.55*	*2.00*
2025	*.78*	*.40*	*.37*	*.60*	*2.15*

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.2343	.2343	.2507	.2507	.97
2021	.2507	.2507	.2682	.2682	1.04
2022	.2682	.2682	.287	.287	1.11
2023	.287	.287	.3071	.3071	1.19
2024	.3071				

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 2023, Aqua Amer. provided water and wastewater services in the states of PA, OH, TX, IL, NC, NJ, IN, VA NS WS. Acquired AquaSource, 7/13; N. Maine Util., 7/15; and others. Water respn. for 56% of revenues in 2023; residential, 31%; commercial, 9%; industrial, wastewater & other, 16%. Gas 42%; other, 2.0%. Employs 3,258. Off. & dir. own less than 1% of the common stock; BlackRock, 11.3%; Vanguard, 10.2%; Can. Pen. Plan 7.9% (3/24 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 wrapped up a solid 2023. Fourth-quarter share earnings of $0.50 were slightly higher than expected and the water and gas utility was able to post a full-year gain of 5.1%. This was a good showing considering that significantly warmer weather during the winter months dampened demand for natural gas used to heat homes.

Bottom-line advances ought to remain strong. Continued benefits from the ongoing implementation of cost-cutting measures combined with rate relief in several states ought to propel Essential's earnings per share 7.5%, to $2.00, in 2024. Margins in the water segment should also widen further due to the acquisition program (more below), which will likely offset rising interest costs. We are introducing our 2025 share-earnings estimate of $2.15, representing another increase of 7.5%.

The company's Financial Strength rating has been raised a notch to an A. Even though its capital expenditures are projected to total $7.2 billion over the next five-year period, Essential's balance sheet ought to remain more than sound. As older bonds mature, however, refinancing them may well be more expensive. The company also plans on using its continuous at-the-market issuance of equity as a major source of capital. (If shareholders buy additional WTRG shares through the dividend reinvestment program, they qualify for a 5% discount.)

Consolidation in the water business will be a positive for the company. There are thousands of small, inefficient municipal water districts in the United States. Essential merged seven systems into its rate base last year. The company is able to achieve substantial savings and increase margins when it integrates these new assets into its operations.

These good-yielding shares are ranked to underperform the broader market averages in the coming year. The stock's prospects are attractive for both the next 18-month period and out to the 2027-2029 time frame, though. Conservative investors may note that the equity's Safety rank has just been raised to a 2 (Above Average), making potential returns appear much better on a risk-adjusted basis.

James A. Flood *April 5, 2024*

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	60
Earnings Predictability	65

(A) Diluted earnings. Excludes nonrecurring gains: '12, 18¢. Excludes gain from discontinued operations: '12, 7¢; '13, 9¢; '14, 11¢. Next earnings report mid-May.
(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: 12/31/23, $2.341 bill./$8.89 a share.

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MIDDLESEX WATER NDQ-MSEX

RECENT PRICE 50.47 | P/E RATIO 24.4 (Trailing: 28.7 Median: 28.0) | RELATIVE P/E RATIO 1.33 | DIV'D YLD 2.6% | VALUE LINE

TIMELINESS 5 Lowered 11/24/23
SAFETY 2 New 10/21/11
TECHNICAL 3 Raised 4/5/24
BETA .75 (1.00 = Market)

18-Month Target Price Range

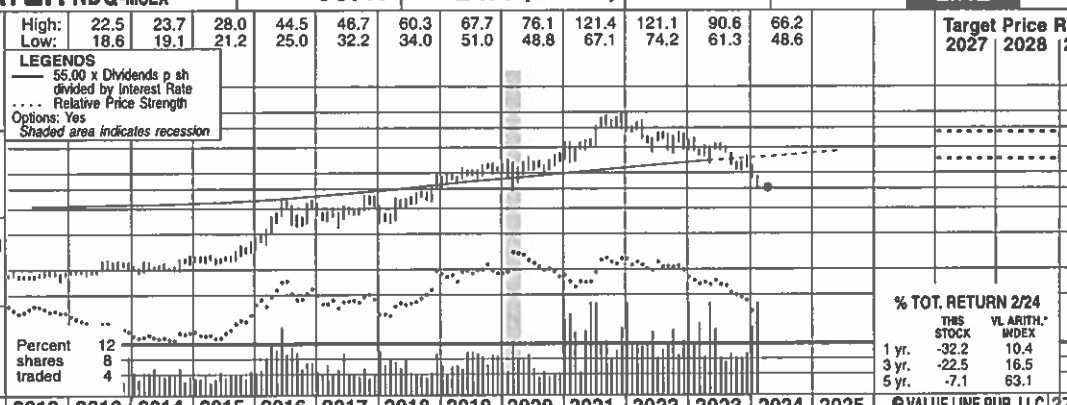
Low-High	Midpoint (% to Mid)
$45-$102	$74 (45%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	95	(+90%)	19%
Low	70	(+40%)	11%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	75	79	96
to Sell	99	86	76
Hld's(000)	12584	13355	13700



2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.16	8.00	8.42	7.72	8.10	8.17	9.21	9.33	10.05	10.30	Revenues per sh	11.40
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	3.70	3.41	3.40	3.60	"Cash Flow" per sh	4.10
.89	.72	.96	.84	.90	1.03	1.13	1.22	1.38	1.38	1.96	2.01	2.18	2.07	2.39	1.76	2.35	2.50	Earnings per sh A	3.00
.70	.71	.72	.73	.74	.75	.76	.78	.81	.86	.91	.98	1.04	1.11	1.18	1.26	1.32	1.40	Div'd Decl'd per sh B■	1.60
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	5.18	5.06	5.45	5.65	Cap'l Spending per sh	6.00
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	22.65	23.74	23.60	23.70	Book Value per sh	23.70
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	17.64	17.82	17.90	17.95	Common Shs Outst'g C	18.00
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	38.6	42.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	28.0
1.19	1.40	1.13	1.36	1.32	1.11	.97	.96	1.34	1.43	1.20	1.58	1.55	2.39	2.23	2.39			Relative P/E Ratio	1.30
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%	1.7%			Avg Ann'l Div'd Yield	1.9%
117.1	126.0	132.9	130.8	138.1	134.6	141.6	143.1	162.4	166.3	180	185	Revenues ($mill)	205
18.4	20.0	22.7	22.8	32.5	33.9	38.4	36.5	42.4	31.5	42.0	45.0	Net Profit ($mill)	54.0
35.0%	34.5%	34.0%	32.7%	2.8%	--	--	--	7.1%	3.2%	21.0%	21.0%	Income Tax Rate	21.0%
1.7%	1.9%	2.7%	3.1%	1.4%	3.4%	3.9%	--	3.9%	3.9%	2.5%	2.5%	AFUDC % to Net Profit	2.5%
40.5%	39.4%	37.9%	37.5%	37.8%	41.5%	44.0%	45.3%	41.9%	45.7%	42.5%	41.0%	Long-Term Debt Ratio	40.5%
58.8%	59.8%	61.5%	61.8%	61.6%	58.2%	55.7%	54.4%	57.7%	54.0%	57.0%	58.5%	Common Equity Ratio	59.5%
335.8	345.4	355.4	370.7	404.1	556.7	621.5	676.3	692.7	783.2	740	725	Total Capital ($mill)	720
465.4	481.9	517.8	557.2	618.5	705.7	796.6	865.4	920.6	998.3	1000	1015	Net Plant ($mill)	1035
6.3%	6.6%	7.1%	6.9%	8.9%	6.7%	6.8%	6.0%	6.8%	4.8%	6.0%	6.5%	Return on Total Cap'l	8.0%
9.2%	9.6%	10.3%	9.8%	12.9%	10.4%	11.0%	9.9%	10.5%	7.4%	10.0%	10.5%	Return on Shr. Equity	12.5%
9.3%	9.6%	10.3%	9.9%	13.0%	10.4%	11.1%	9.9%	10.6%	7.4%	10.0%	10.5%	Return on Com Equity	12.5%
3.1%	3.5%	4.3%	3.8%	7.0%	5.4%	5.8%	4.6%	5.4%	2.1%	4.5%	4.5%	Retained to Com Eq	6.0%
67%	63%	58%	62%	46%	48%	48%	53%	49%	72%	56%	56%	All Div'ds to Net Prof	53%

CAPITAL STRUCTURE as of 12/31/23
Total Debt $365.9 mill. Due In 5 Yrs $43.7 mill.
LT Debt $358.2 mill. LT Interest $7.5 mill.
(Total interest coverage: 8.3x)
(46% of Cap'l)

Pension Assets-12/23 $84.8 mill.
Oblig. $87.8 mill.
Pfd Stock $2.4 mill. Pfd Div'd: $.1 mill.

Common Stock 17,821,000 shs.

MARKET CAP: $900 million (Small Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	3.5	3.8	2.4
Other	30.9	33.5	106.1
Current Assets	34.4	37.3	108.5
Accts Payable	21.1	24.8	27.6
Debt Due	6.7	17.5	7.7
Other	28.8	75.6	68.5
Current Liab.	56.6	117.9	103.8

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	2.5%	1.5%	4.0%
"Cash Flow"	8.0%	7.5%	3.0%
Earnings	8.5%	5.5%	6.5%
Dividends	5.0%	6.5%	5.0%
Book Value	7.0%	9.5%	1.0%

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	32.5	36.7	39.9	34.0	143.1
2022	36.2	39.7	47.7	38.8	162.4
2023	38.2	42.8	46.7	38.6	166.3
2024	42.0	43.0	52.0	43.0	180
2025	43.0	44.0	53.0	45.0	185

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	.39	.62	.65	.41	2.07
2022	.68	.50	.80	.40	2.39
2023	.33	.55	.56	.32	1.76
2024	.45	.60	.70	.60	2.35
2025	.50	.65	.75	.60	2.50

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.2562	.2562	.2562	.2725	1.04
2021	.2725	.2725	.2725	.29	1.11
2022	.29	.29	.29	.3125	1.18
2023	.3125	.3125	.3125	.325	1.26
2024	.325				

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 2023, the Middlesex System accounted for 66% of operating revenues. At 12/31/23, the company had 355 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 1.9% of the com. stock; BlackRock Inst. Trust Co., 14.6% (4/23 proxy). Add.: 485 C Route 1 South, Suite 400, Iselin, NJ 08830. Tele.: 732-634-1500. Int.: www.middlesexwater.com.

Middlesex Water reported lackluster results to finish up 2023. The regulated water utility's top line came in flat year over year in the fourth quarter, at $38.6 million, while the bottom line contracted 20%, to $0.32 per share. Lower weather-related customer demand contributed to the soft showing, which was slightly offset by cumulative rate increases throughout the year in connection with the previously completed base rate filing. Meantime, higher operation and maintenance expenses, namely variable production and labor costs, weighed on profits.

But revenues and earnings are poised to snap back this year. First, unfavorable variable input and production costs should subside a bit, in addition to a pick-up in customer water demand. Moreover, management's most recent rate increase filing (May 2023) has been settled, which should support revenue expansion. On balance, we look for revenues and earnings of $180 million and $2.35 per share this year. Our preliminary 2025 top- and bottom-line estimates of $185 million and $2.50 per share call for slightly more modest growth. **Nevertheless, the stock price has pulled back further of late.** Over the past three months, the equity has fallen another 25% in value, setting a new 52-week low along the way.

The dividend yield is more attractive at recent levels. Recall that Middlesex raised the quarterly distribution 4%, to $0.325 per share a few months prior. Based on the company's long-term track record, annual increases to the quarterly payout are probably in the cards going forward. At this time, the stock's yield is roughly 50 basis points higher than the broader market average and, thus may pique the interest of income-seeking accounts. Capital appreciation potential three to five years out is also above average at the recently depressed quotation.

Subscribers with a short-term view should turn the page, however. Based on recent price and earnings momentum, MSEX shares are ranked 5 (Lowest) for relative year-ahead price performance. The equity recently traded around levels not seen since the pandemic, and riskier assets appear to still be in favor among the investment community.

Nicholas Patrikis *April 5, 2024*

(A) Diluted earnings. Quarterly figures may not sum due to rounding. Next earnings report due early May.
(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	85
Price Growth Persistence	85
Earnings Predictability	85

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SJW GROUP NYSE-SJW

RECENT PRICE 55.52 | P/E RATIO 19.5 (Trailing: 20.8 / Median: 26.0) | RELATIVE P/E RATIO 1.07 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 4 Lowered 3/8/24
SAFETY 3 New 4/22/11
TECHNICAL 3 Raised 4/5/24
BETA .85 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$50-$106 $78 (40%)

2027-29 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(+60%)	15%
Low	65	(+15%)	7%

Institutional Decisions

	2Q2023	3Q2023	4Q2023
to Buy	120	128	113
to Sell	91	85	106
Hld's(000)	26624	24180	24551

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
High:	30.1	33.7	35.7	56.9	69.3	68.4	74.5	75.0	73.7	83.9	83.7	66.2						
Low:	24.5	25.5	27.5	28.6	45.4	51.3	53.9	45.6	58.0	55.7	57.0	54.4						

LEGENDS
42.00 x Dividends p sh divided by Interest Rate
Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2027 2028 2029

% TOT. RETURN 2/24

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-26.3	10.4
3 yr.	-6.3	16.5
5 yr.	-0.6	63.1

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	© VALUE LINE PUB. LLC	27-29
	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	16.61	18.97	14.00	14.78	19.77	19.01	20.15	20.93	*22.40*	*24.00*	Revenues per sh	*25.00*
	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	4.76	5.24	3.29	3.13	5.28	5.13	5.79	6.03	*4.60*	*4.85*	"Cash Flow" per sh	*5.10*
	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	2.57	2.86	1.82	.82	2.14	2.03	2.43	2.68	*3.00*	*3.20*	Earnings per sh A	*3.45*
	.65	.66	.68	.69	.71	.73	.75	.78	.81	1.04	1.12	1.20	1.28	1.36	1.44	1.52	*1.60*	*1.68*	Div'd Decl'd per sh BD■	*1.85*
	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	6.95	7.26	5.08	6.25	7.44	8.32	7.85	9.01	*8.25*	*8.50*	Cap'l Spending per sh	*8.75*
	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	20.61	22.57	31.31	31.27	32.12	34.28	36.06	38.52	*41.15*	*43.35*	Book Value per sh	*44.15*
	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.46	20.52	28.40	28.46	28.56	30.18	30.80	32.02	*31.00*	*30.00*	Common Shs Outst'g C	*30.00*
	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	15.7	18.8	32.7	78.8	30.0	32.9	27.3	26.4	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*23.0*
	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.82	.95	1.77	4.20	1.54	1.78	1.58	1.47			Relative P/E Ratio	*1.30*
	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.0%	1.9%	1.9%	1.9%	2.0%	2.0%	2.2%	2.1%			Avg Ann'l Div'd Yield	*2.3%*
							319.7	305.1	339.7	389.2	397.7	420.5	564.5	573.7	620.7	670.4	*695*	*720*	Revenues ($mill)	*750*
							51.8	37.9	52.8	59.2	38.8	23.4	61.5	60.5	73.8	85.0	*93.0*	*96.0*	Net Profit ($mill)	*105*
							32.5%	38.1%	38.8%	36.7%	20.6%	26.4%	12.0%	12.2%	10.3%	6.5%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
							--	--	--	--	--	--	--	--	6.4%	6.4%	*1.5%*	*1.5%*	AFUDC % to Net Profit	*1.5%*
							51.6%	49.8%	50.7%	48.2%	32.7%	59.1%	58.4%	59.1%	57.3%	55.3%	*52.5%*	*50.0%*	Long-Term Debt Ratio	*43.0%*
							48.4%	50.2%	49.3%	51.8%	67.3%	40.9%	41.6%	40.9%	42.7%	44.7%	*47.5%*	*50.0%*	Common Equity Ratio	*57.0%*
							744.5	764.6	855.0	894.3	1320.7	2173.6	2204.7	2527.5	2602.8	2760.1	*2675*	*2600*	Total Capital ($mill)	*2325*
							963.0	1036.8	1146.4	1239.3	1328.8	2206.5	2334.9	2497.5	2630.3	3155.6	*3200*	*3275*	Net Plant ($mill)	*2925*
							8.3%	6.3%	7.4%	7.9%	3.9%	1.8%	4.0%	3.5%	4.0%	4.3%	*4.0%*	*4.0%*	Return on Total Cap'l	*5.0%*
							14.4%	9.9%	12.5%	12.8%	4.4%	2.6%	6.7%	5.8%	6.6%	6.9%	*7.5%*	*7.5%*	Return on Shr. Equity	*8.0%*
							14.4%	9.9%	12.5%	12.8%	4.4%	2.6%	6.7%	5.8%	6.6%	6.9%	*7.5%*	*7.5%*	Return on Com Equity	*8.0%*
							10.2%	5.7%	8.6%	8.2%	1.8%	NMF	2.7%	2.0%	2.7%	3.0%	*4.0%*	*3.5%*	Retained to Com Eq	*3.5%*
							29%	42%	31%	36%	60%	NMF	59%	66%	59%	56%	*53%*	*53%*	All Div'ds to Net Prof	*54%*

CAPITAL STRUCTURE as of 12/31/23
Total Debt $1575.7 mill. Due in 5 Yrs $44.3 mill.
LT Debt $1526.7 mill. LT Interest $50.0 mill.
(LT Interest Coverage: 8.2x)
(55% of Cap'l)

Pension Assets-12/23 $285.5 mill
Oblig. $297.8 mill.
Pfd Stock None.
Common Stock 32,023,000 shs.

MARKET CAP: $1.8 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2021	2022	12/31/23
Cash Assets	10.9	12.3	9.7
Accts Receivable	53.7	58.2	67.9
Other	69.5	84.2	120.8
Current Assets	134.1	154.7	198.4
Accts Payable	30.4	29.6	46.1
Debt Due	39.1	4.4	49.0
Other	133.8	230.7	247.9
Current Liab.	203.3	264.7	343.0

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '21-'23 to '27-'29
Revenues	4.0%	4.0%	*4.0%*
"Cash Flow"	7.0%	5.0%	*-1.5%*
Earnings	7.5%	-.5%	*6.5%*
Dividends	7.5%	8.0%	*4.5%*
Book Value	9.5%	8.0%	*3.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	114.8	152.2	166.9	139.8	573.7
2022	124.3	149.0	176.0	171.4	620.7
2023	137.3	156.9	204.8	171.4	670.4
2024	*140*	*165*	*215*	*175*	*695*
2025	*145*	*170*	*225*	*180*	*720*

Calendar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2021	.09	.69	.64	.60	2.03
2022	.12	.38	.82	1.09	2.43
2023	.37	.58	1.13	.59	2.68
2024	*.45*	*.60*	*1.20*	*.75*	*3.00*
2025	*.50*	*.65*	*1.25*	*.80*	*3.20*

Calendar	QUARTERLY DIVIDENDS PAID BD■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2020	.32	.32	.32	.32	1.28
2021	.34	.34	.34	.34	1.36
2022	.36	.36	.36	.36	1.44
2023	.38	.38	.38	.38	1.52
2024	.40				

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 808 employees. Officers and directors own less than 1.0% of outstanding shares (3/23 proxy). Chairman & CEO: Eric Thornburg. Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.

Shares of SJW Group have taken a step back in price over the past three months. In fact, following a roughly 15% decline in value since our early January review, the stock recently traded near a 52-week low. Investor sentiment around conservative, safe haven securities appears to be waning, as the market's appetite for riskier assets remains on the rebound. Shares of SJW have slipped one notch on our Timeliness Ranking Scale, to 4 (Below Average) and, thus, are not presently a suitable selection for investors with a short-term horizon.

Fourth-quarter financial results were a mixed bag. Revenues of $171 million mirrored the previous-year tally, with rate case filings and customer growth offsetting a decline in consumer water usage. On the earnings front, an uptick in operating expenses, namely water production costs and administrative fees, resulted in a 46% year-over-year contraction, to $0.59 per share. Nevertheless, we think better days lie ahead. In line with management's latest outlooks, our model calls for modest top- and bottom-line expansion in 2024 and 2025.

Long-term business prospects are promising. The pending approval of recent rate case filings ought to keep the top line moving in the right direction. To that end, aggressive spending on infrastructure projects and improvements ($1.5 billion over the next few years) should also drive revenue growth via applying higher customer rates. In addition, the potential for much-improved economic conditions suggests that water consumption levels ought to accelerate in the coming years. Finally, the company will likely pursue strategic bolt-on acquisitions, as well.

Capital continues to make its way to shareholders via dividend distributions. Notably, the board of directors recently upped the quarterly payment 5%, to $0.40 per share. Going forward, annual increases to the payout are likely in the cards. Moreover, the current yield sits comfortably above the *Value Line* median.

Subscribers with an 18-month holding period can find something to like here. At this juncture, SJW Group shares hold attractive price appreciation potential over the intermediate term.

Nicholas Patrikis *April 5, 2024*

(A) Diluted earnings. Excludes nonrecurring losses: '08, $1.22; '10, $0.46. GAAP accounting as of 2013. Next earnings report due early May. 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.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	50

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Artesian Res Corp NASDAQ:ARTNA

Last Price	Day Change	Trailing P/E	Relative P/E Last FY	Dividend Yield	3 to 5-Year Target Price Range	Performance	Safety	Financial Strength
$35.74	$0.59 (1.66%)		1.87	3.36%	--			

As of 12:47 PM May 31, 2024. Delayed at least 15 minutes.

Industry Rank: Water Utility -

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CHARTING

1d 5d 3m 1y 5y Show data

QUOTES

Last Price	Day's Change	Volume
$35.69	**$0.54 1.54%**	**29,236**

Bid (size)	Ask (size)	
$35.45 (1)	**$35.71 (1)**	**Below** 10-day avg.

As of 12:34 PM May 31, 2024. Delayed at least 15 minutes.

Previous close	35.15
Open	35.16
Trailing P/E	
Market cap	330.55M
Shares outstanding	9.41M
Beta	0.8
Next earnings date	5/8/2020

52 Week Low & High

$33.34 5/28/2024 6/7/2023 **$50.43**

$35.69

Hist. Prices

INDUSTRY AN

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SEC FILINGS

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Filing	Filing Date	Category
8-K	May 22, 2024	Quarterly
4	May 10, 2024	Insider Activity
4	May 10, 2024	Insider Activity
4	May 10, 2024	Insider Activity
4	May 10, 2024	Insider Activity
4	May 10, 2024	Insider Activity
10-Q	May 9, 2024	Quarterly
8-K	May 8, 2024	Quarterly
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity

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Company Name	Ticker	Safety™
3M Company	MMM	2
Amazon com	AMZN	2
American Express Company	AXP	2
Amgen Inc	AMGN	1
Apple Inc	AAPL	1
Boeing Co	BA	3
Caterpillar Inc	CAT	2
Chevron Corporation	CVX	2
Cisco Systems Inc	CSCO	1
Coca Cola Company	KO	1

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INSIDER TRANSACTIONS

Options Buys & Sells

Buys Sells

All insiders

Date	Insider	Trans.
Dec 20	Taylor Nicholl…	Sell

INSTITUTIONAL OWNERSHIP

Number of Transactions

Buyers Sellers

Show top holders
Closing price

Percent Shares Held by Institutions

FINANCIAL STATEMENTS

Income Statement & Balance Sheet	2023	2 Year Trend
Gross Profit	53	
Total Operating Expenses	70	
Operating Income	**29**	

York Water Co. (The) NASDAQ:YORW

Last Price	Day Change	Trailing P/E	Relative P/E Last FY	Dividend Yield	3 to 5-Year Target Price Range	Performance	Safety	Financial Strength
$36.76	$0.63 (1.74%)		1.58	2.33%	--			

As of 12:42 PM May 31, 2024. Delayed at least 15 minutes.

Industry Rank: Water Utility -

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1 of 4 Close All Next

CHARTING

1d 5d 3m 1y 5y Show data

QUOTES

Last Price	Day's Change	Volume
$36.81	**$0.68 1.88%**	**13,566**

Bid (size)	Ask (size)	
$36.75 (2)	**$36.81 (1)**	**Above** 10-day avg.

As of 12:30 PM May 31, 2024. Delayed at least 15 minutes.

Previous close	36.13
Open	36.16
Trailing P/E	
Market cap	518.28M
Shares outstanding	14.34M
Beta	0.8
Next earnings date	3/14/2012

52 Week Low & High

$33.32 4/16/2024 — 6/8/2023 **$45.61**

$36.81

Hist. Prices

INDUSTRY AN

Please sign in

SEC FILINGS

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Filing	Filing Date	Category
4	May 21, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity
4	May 8, 2024	Insider Activity

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DOW 30

View complimentary Value Line reports on Dow 30 stocks

Company Name	Ticker	Safety™
3M Company	MMM	2
Amazon com	AMZN	2
American Express Company	AXP	2
Amgen Inc	AMGN	1
Apple Inc	AAPL	1
Boeing Co	BA	3
Caterpillar Inc	CAT	2
Chevron Corporation	CVX	2
Cisco Systems Inc	CSCO	1
Coca Cola Company	KO	1

View all »

INSIDER TRANSACTIONS

Options Buys & Sells

Buys Sells

All insiders

Date	Insider	Trans.
May 20	Rasmussen Stev…	Buy

INSTITUTIONAL OWNERSHIP

Number of Transactions

Buyers Sellers

Show top holders
Closing price

Percent Shares Held by Institutions

FINANCIAL STATEMENTS

Income Statement & Balance Sheet	2023	2 Year Trend
Gross Profit	54	
Total Operating Expenses	42	
Operating Income	**30**	

	Company Name	AMERICAN STATES WATER COMPANY	AMERICAN WATER WORKS COMPANY, INC.	ARTESIAN RESOURCES CORPORATION	CALIFORNIA WATER SERVICE GROUP	ESSENTIAL UTILITIES, INC.	MIDDLESEX WATER COMPANY	SJW GROUP	THE YORK WATER COMPANY
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
2022	Sales-Net[y22]	491.528	3792	98.897	846.431	2288.032	162.434	620.698	60.061
2023	Sales-Net[y23]	595.699	4234	98.861	794.632	2053.824	166.274	670.363	71.031
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
2022	Cash & Short Term Investment[y22]	5.997	85	1.309	62.1	11.398	3.828	12.344	0.001
2023	Cash & Short Term Investment[y23]	14.073	330	2.505	39.591	4.612	2.39	9.723	0.001
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	18.664	300.458	437.795	34.355	134.085	11.262
2022	Current Assets-Total[y22]	151.294	1250	27.804	295.535	658.159	37.306	158.386	14.234
2023	Current Assets-Total[y23]	205.978	1389	30.617	296.285	491.979	108.536	198.389	15.584
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	641	28.33	41.994	286.709	19.731	102.102	7.5
2022	Debt in Current Liabilities[y22]	257.791	1456	22.222	74.375	465.866	72.962	163.938	0
2023	Debt in Current Liabilities[y23]	44.209	664	2.253	181.634	248.256	51.09	220.475	0
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	47.206	271.937	675.063	56.619	203.271	20.086
2022	Current Liabilities-Total[y22]	396.522	2811	44.07	294.65	1021.869	117.859	268.322	16.981
2023	Current Liabilities-Total[y23]	166.623	2151	22.414	430.339	797.927	103.829	342.974	18.143
2018	noncash wkcap	18.062	-394	-4.122	-9.629	-26.709	-11.41	18.015	-0.802
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	-311.908	361.404	16.288
2021	noncash wkcap	10.936	-62	-0.304	-7.865	38.874	-6.066	22.008	-1.325
2022	noncash wkcap	6.566	-190	4.647	13.16	90.758	-11.419	41.658	-2.748
2023	noncash wkcap	69.491	-428	7.951	7.989	-62.304	53.407	66.167	-2.56
2019	Change Non cashWrk Cap	-5.745	388	1.374	-8.613	-7.606	0.51	-3.999	1.528
2020	Change Non cashWrk Cap	-8.14	95	5.31	27.881	20.055	-301.008	347.388	15.562
2021	Change Non cashWrk Cap	6.759	-151	-2.866	-17.504	53.134	305.842	-339.396	-17.613
2022	Change Non cashWrk Cap	-4.37	-128	4.951	21.025	51.884	-5.353	19.65	-1.423
2023	Change Non cashWrk Cap	62.925	-238	3.304	-5.171	-153.062	64.826	24.509	0.188
2019		-1.21%	10.75%	1.64%	-1.21%	-0.85%	0.38%	-0.95%	2.96%
2020	WK cap/sale	-1.67%	2.52%	6.02%	3.51%	1.37%	-212.59%	61.54%	28.90%
2021	WK cap/sale	1.35%	-3.84%	-3.15%	-2.21%	2.83%	213.66%	-59.16%	-31.95%
2022	WK cap/sale	-0.89%	-3.38%	5.01%	2.48%	2.27%	-3.30%	3.17%	-2.37%
2023	WK cap/sale	10.56%	-5.62%	3.34%	-0.65%	-7.45%	38.99%	3.66%	0.26%
	Average	1.63%	0.08%	2.57%	0.38%	-0.37%	7.43%	1.65%	-0.44%
							Median		1.01%

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:

"East Coventry Township Engineer's Assessment," dated April 2024, and related files prepared by Carroll Engineering Corporation;

Asset Purchase Agreement;

Wastewater System's Customer List;

Wastewater System's Act 537 Plan;

Wastewater System's 2022 Chapter 94 Report; and

Township's Agreement with North Coventry Municipal Authority and North Coventry Township.