

**VALLEY TOWNSHIP
WATER SYSTEM ASSETS**

FAIR MARKET VALUE APPRAISAL

AT

MARCH 31, 2020

Prepared by:

GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC



Valley Forge, Pennsylvania



Excellence Delivered As Promised

July 15, 2020

[Via email to manager@valleytownship.org](mailto:manager@valleytownship.org)

Ms. Carol R. Lewis
Township Manager
Valley Township
890 West Lincoln Highway
P.O. Box 467
Coatesville, PA 19320

Re: Fair Market Value Appraisal

Dear Ms. Lewis:

In accordance with your request, we have prepared a fair market value appraisal of the Valley Township's water system assets ("Water System") as of March 31, 2020.

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."

Based on our analysis, as described in the attached appraisal report, the estimate of the fair market value of the Water System as of March 31, 2020 is \$10,532,000 (rounded).

Our appraisal was developed consistent with the Uniform Standards of Professional Appraisal Practices. Our fair market value appraisal of the Water System was based on the Cost, Market and Income Approaches to valuation. We used seven methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The attached narrative appraisal presents our findings and conclusions regarding the fair market value of the Water System's assets of March 31, 2020. The report describes the valuation methodologies employed and the Exhibits that present the valuation results.

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Ms. Carol R. Lewis
Coatesville, PA 19320

July 15, 2020

The results of the analyses and calculations completed for each applicable approach are detailed throughout the report and the Exhibits and are summarized as follows:

<u>Valuation Approach</u>	<u>Indicated Value</u>
Cost Approach	\$10,238,573
Income Approach	9,528,715
Market Approach	11,826,043

We thank Valley Township for this opportunity to provide valuation services in connection with the fair market value appraisal of the Water System's assets.

Respectfully Submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC



HAROLD WALKER, III
Manager, Financial Studies

TABLE OF CONTENTS

INTRODUCTION	1
Introduction and Summary	1
Description of the Assignment.....	1
Standard and Premise of Value.....	1
Intended Use of the Valuation	2
Client and Users.....	2
Extraordinary Assumptions	2
Hypothetical Conditions	2
Limiting Conditions	2
Site Inspection.....	3
Sources of Information	3
Description of Valley Township.....	4
Description of the Water System	4
Demographics and Growth for the Water System	7
HISTORY AND NATURE OF THE BUSINESS.....	8
Economic Outlook	8
Industry Review	10
QUANTITATIVE AND QUALITATIVE ANALYSIS	13
Comparison Review.....	13
Financial Review	15
Financial Benchmark Analysis	15
Risk Analysis	16
Property Plant & Equipment Analysis.....	18
Property Plant & Equipment Analysis for Contributions	18
Capital Expenditures Analysis.....	19
Growth Rate Analyses	19
Profit Margin Analyses.....	20
VALUATION.....	20
The Cost Approach	20
The Original Cost Method	23
The Replacement Cost Method.....	24
Benchmark Metrics.....	26
The Income Approach.....	27
The Capitalization of Earnings Method	31
The DCF Method	32
The Market Approach.....	35
The Market Multiples Method	35
The Selected Transactions Method.....	38
Conclusion	42
APPENDIX A - QUALIFICATIONS	43
APPENDIX B - KNOWN IMPACT OF COVID-19	47
COMPLIANCE & APPRAISAL CERTIFICATION	53
EXHIBITS	54

INTRODUCTION

Introduction and Summary. The following narrative report presents our findings and conclusions regarding the fair market value of the water system assets of the Valley Township as of March 31, 2020. The report describes the valuation methodologies employed and the Exhibits that present the valuation results. Based upon the analyses, we believe the fair market value of the Valley Township's water system assets is \$10.5 million. This conclusion is based upon the values suggested by the Cost, Income and Market approaches. During our analysis we found indications of value that ranged from \$9.5 million to \$11.8 million. However, most of the appropriate indicated values approximated \$10.5 million.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by the Valley Township ("Township") to estimate the fair market value of the Valley Township's water system assets ("Water System") as of March 31, 2020.

Standard and Premise of Value. The fair market value appraisal of the Water System complies with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches. Fair market value is defined as "the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."¹

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

¹ The International Glossary of Business Valuation Standards

Appendix A-5.2 (Gannett Fleming)

will continue running normally using all of its assets to produce income and will continue operating beyond the valuation date.

We valued the Water 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 Water System's assets was not relevant to the determination of the value of said assets.

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 Sewer System and conduct a fair market value appraisal of the Water System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches.

Client and Users. The client is the Valley Township. The intended users of the valuation are the Valley Township, Pennsylvania American Water Company, Inc. and the Pennsylvania Public Utility Commission.

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 Valley 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.

Appendix A-5.2 (Gannett Fleming)

Site Inspection. We viewed or observed the Water System’s facilities on June 17, 2020. We also relied on engineering assessment of the Water System’s facilities report, “Valley Township Water Facilities Engineering Assessment and Original Cost” and related files prepared by Pennoni Associates Inc., to confirm the condition of the Water System’s property and equipment.

Sources of Information. The following sources of information were reviewed during the assignment:

Engineer’s assessment report “Valley Township Water Facilities Engineering Assessment and Original Cost” and related files prepared by Pennoni Associates Inc.;

Township provided electronic files (PDF and Excel);

Water System’s Customer data;

Water System’s Fee Schedule;

Valley Township’s bulk service agreements;

Asset Purchase Agreement;

Water System’s 2018 Permit Compliance Report and Summary

Valley Township’s 5-Year Capital Plan

Valley Township’s Statement of Revenues & Expenditures for Water System (2017-2019);

Valley Township’s Audited Financials (2016);

Valley Township’s Budget for Water System (2020);

Blue Chip Financial Forecasts;

US Census Bureau, various data files;

Value Line Investment Survey; and

S&P Capital IQ.

Appendix A-5.2 (Gannett Fleming)

Description of Valley Township. The Township is located in western Chester County in southeastern Pennsylvania. It is immediately west of the City of Coatesville and approximately 6 miles west of the Borough of Downingtown. The Township is bounded by several townships, including East Fallowfield to the south, Sadsbury to the west, West Caln to the north, and West Brandywine to the east. The Township is the 55th largest land mass of Chester County's 73 municipalities and was the 27th most populous with 7,632 people (2015) and 2,771 housing units (2015). The Township consists of 5.9 square miles and lies approximately 45 miles northwest of Philadelphia, Pennsylvania. According to U.S. Census figures, The Township's population grew 32.8% from 2000 to 2010, while population in Pennsylvania grew 3.4% and 15.1% in Chester County.

Description of the Water System. The Township owns and operates the Water System which consists of the Mineral Springs Water Treatment Plant ("WTP"), three wells, one 150,000 gallon elevated tank, approximately 22 miles of distribution mains, associated infrastructure and appurtenances, and related land and land rights. The Water System#ells approximately 65 million gallons per year of drinking water to approximately 1,670 existing residential, commercial, and institutional customers in the Township. The Water System is supplied by three wells and bulk water purchased from Pennsylvania-American Water Company ("PAWC").

Water pumped from the three wells is treated at WTP and then#onveyed from the WTP directly into the distribution system and into a 150,000-gallon elevated storage tank. The three wells, the WTP and the elevated storage tank were originally installed in 1988. The Delaware River Basin Commission ("DRBC") and PA Department of Environmental Protection ("DEP") approved a permit in 1988 for the withdrawal of up to 4,500,000 gallons of groundwater per month. The permit has been extended a number of times over the years with the latest renewal for an

Appendix A-5.2 (Gannett Fleming)

additional ten years approved in 2018. The original permit extensions were granted with a condition that an agreement be reached with the City of Coatesville Authority (“CCA”) for installation of a back-up interconnection for the system. The CCA has since transferred ownership of its water supply facilities to PAWC. Currently, bulk water purchased from PAWC is supplied at the Airport Road Interconnect, Hillview Interconnect, Old Lincoln Highway Interconnect, and Red Road Interconnect.

The WTP components include: two booster pumps, pump controls; treatment; chlorine contact tank; three well meters, and one finished water meter. The treatment includes sodium hypochlorite for disinfection, bulk caustic soda for pH adjustment, three chemical feed pumps, and continuous chlorine analyzer. The WTP is generally in good condition. All finished water piping and valves were replaced in 2008 and the meters and portions of the raw water piping have been replaced since 2008. A SCADA system was installed and the control panel was replaced in 2016. Additionally, one of the booster pumps was replaced in 2017.

The three wells (V-1, V-2 and V-4) were drilled in 1987. The well pumps and motors have been replaced several times since their original installation. Rehabilitation work on Well V-1 and V-2 was conducted in 2012. The 90-foot, 150,000-gallon elevated storage tank was constructed in 1988. The elevated storage tank was rehabilitated and repainted in 2009.

The Water System serves 1,669 customers through about 115,133 LF of ductile iron pipe mains that range in size from 6” to 14”. The majority of the mains were installed in the 2000s and the earliest installation is 1988. The Water System has 1,669 services, meters and 60 hydrants.

The Township utilizes one enterprise fund to account for the Water System’s operations along with other enterprise fund operations. The Township’s audited financial statements reflect

Appendix A-5.2 (Gannett Fleming)

the use of the modified cash basis of accounting and provide limited information for the Water System. 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. The modified cash basis is not allowed under Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).

The Township's audited financial statements only report a line item each for total revenues and total expenditures for the Water System, do not report plant, assets, capitalization nor capital expenditures for the Water System and therefore, provide limited information for the Water System. The Township's annual statement of revenues & expenditures provide more details on the Water System's annual statement of revenues and expenditures than the audited financial statements. Accordingly, we reviewed the Township's statement of revenues & expenditures for the Wastewater System for the years 2017 through 2019 and show those details on Exhibit 1.² This information reveals the expenditures for the Water System do not include depreciation charges nor interest charges.

According to the Township's annual statement of revenues and expenditures, for the year ended December 31, 2019 show (Exhibit 1) the Water System had reported revenues of \$0.699 million and expenses of \$0.620 million. At the same point in time, there is no information regarding plant, assets, capitalization nor capital expenditures. As stated, the Township's audited financial statements provide limited information for the Water System.

The Water System is exempt from Pennsylvania Public Utility Commission ("PUC") regulation as a municipal utility. The Water System's rate requirements are established by the

² The information shown on Exhibit 1 for 2016 is based on the audited financial statements due to lack of annual statement of revenues and expenditures for that year.

Appendix A-5.2 (Gannett Fleming)

needed funds to run the system. Most municipalities, including Water System, use a Government Accounting Standards Board (“GASB”) process of accounting or the PA Department of Community and Economic Development (“DCED”) versus Financial Accounting Standards Board (“FASB”) method of accounting used by investor owned utilities (“IOU”). Municipalities are not typically concerned with the return on and the return of their investments of their utility systems since they deem they are providing a public service to their taxpayers. Municipalities typically expense (i.e., maintenance expense) minor collection, 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 Water System’s financial statements should be fully relied upon without recognizing their limitations.

As shown on Exhibit 2, the Water System provides service to 1,669 customers. The Water System is estimated to add 182 connections through 2023. The Water Systems is not dependent on industrial customers.

Demographics and Growth for the Water System. As shown on Exhibit 3, Table 3.1, according to U.S. Census figures, the U.S. population grew 9.7% from 2000 to 2010, and the population in Pennsylvania grew 3.4%. During this same period, Chester County’s population grew 15.1% and the Township’s population grew 32.8% (Exhibit 3, Table 3.2). The Township’s population growth was ranked 97 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.

Appendix A-5.2 (Gannett Fleming)

The Delaware Valley Regional Planning Commission (“DVRPC”) publishes population projections and employment projections for the 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 about 329% the growth rate projected for the Nine DVRPC Counties during each five-year period from 2015 through 2045. The Township’s project population growth places them in the upper 92 percent or 92nd 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 403% the growth rate projected growth rate projected for the Nine DVRPC Counties during each five-year period from 2015 through 2045.

Currently, there are approximately 7,493 people (Exhibit 2) in the Water System’s service area. There are 3,140 housing units in the Water System’s service area, and the ratio of people in households to households is 2.39 persons per household. The Water System’s service area density is 4.5 people per customer based on an estimated population of 7,493 and 1,669 customers. The Water System’s service area density is higher than the 3.5 per customer density of water and wastewater systems (see Table 2 in this report) indicating lower market penetration.

HISTORY AND NATURE OF THE BUSINESS

Economic Outlook. The valuation date (March 31, 2020) is the specific date at which the value of the Water 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

Appendix A-5.2 (Gannett Fleming)

value may occur subsequent to the valuation date.

An outbreak of a new strain of coronavirus was first reported in Wuhan, China in late 2019 and quickly spread around the world. A coronavirus is a kind of common virus that causes an infection in sinuses, or upper throat. The World Health Organization (“WHO”) declared the spread of the infection a pandemic. The WHO named the virus SARS-CoV-2, and the disease COVID-19.

We do not believe the appraised value of the long-lived Water System assets will be materially impacted by the COVID-19 or its related short-term events. In all likelihood, both the mandatory and voluntary testing, preventative measures and social distancing should impact the spread of the disease and constrain its impact to months while the Water System assets will provide service for decades.

Moreover, the Water System’s customer base is not heavily dependent on customers from sectors of the economy providing tourism and travel, employment services, mining/oil and gas (energy), and leisure and hospitality which are likely to be the most impacted by COVID-19’s related short-term events. Therefore, even on a short-term basis, the Water System’s revenues and cash flows should not be materially impacted on a relative basis.

Nevertheless, we have included subsequent information in Appendix B (Known Impact of COVID-19) regarding COVID-19’s known impact for informational purposes only and does not affect the determination of value as of the specified valuation date of March 31, 2020.

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 March 31, 2020. In particular, we focused on the forecasts and economic

Appendix A-5.2 (Gannett Fleming)

commentary presented in Blue Chip Financial Forecasts in the March 1, 2020 edition. Some of these economic forecasts are presented in Table 1.

<u>Economic Indicators</u>			
	<u>Latest Qtr</u>	<u>Consensus Forecasts</u>	
	<u>4Q 2019</u>	<u>1Q 2020</u>	<u>2Q 2020</u>
<u>Key Assumptions</u>			
Real GDP	2.1	1.4	1.8
GDP Price Index	1.4	1.8	1.9
Consumer Price Index	2.4	1.8	1.9
<u>Interest Rates</u>			
3-mo. Treasury Bills	1.61	1.6	1.5
10 Year Notes	1.79	1.7	1.7
30 Year Notes	2.26	2.1	2.2
Aaa Corporate Bond Yield	3.13	2.9	3.0
Baa Corporate Bond Yield	3.83	3.8	3.9
State & Local Bonds	3.13	2.6	2.8
Home Mortgage Rate	3.70	3.5	3.6

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 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.

Appendix A-5.2 (Gannett Fleming)

Private companies or IOUs are active in the construction and improvement of water supply facilities and infrastructure. There are currently 10,942 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 supplies are managed or owned by IOUs. IOUs consist of companies with common stock that is either actively traded or inactively traded, as well as companies that are closely held, or not publicly traded. Currently (March 31, 2020), there are only about nine investor owned water utility companies with publicly traded stock in the U.S.

A comparative industry to the water utility industry is the wastewater utility industry. 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 2,195 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.

Appendix A-5.2 (Gannett Fleming)

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 wastewater utility and water utility industries. Because many wastewater utility and water 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 wastewater and water systems. Generally, they enter a new market by acquiring one or several wastewater or water 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 wastewater and water 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 SDWA if such acquisitions are contiguous to the potential purchaser.

In summary, the result of increased capital spending, to meet the SDWA requirements³ and to replace the aging infrastructure of many systems, has moved the wastewater and water

³ The SDWA, or Safe Drinking Water Act, is the principal federal law in the United States intended to ensure safe drinking water for the public. Pursuant to the act, the EPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers who implement these standards. The CWA, or Clean Water Act, is the primary federal law in the United States governing water pollution. The CWA's objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands.

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 sewer and water systems. However, as a small to medium sized water system, the Water System faces the cost of compliance with significantly limited financial resources when compared to larger IOU water utilities.

QUANTITATIVE AND QUALITATIVE ANALYSIS

Comparison Review. The comparison review considers the financial and operating statistics for the Water System, and a group of companies (“Comparable Group”) that operate in the same basic or similar industry as the Water System. Since no marketplace exists for the common stock of the Water System, an alternative to estimate the value of the Water System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Water 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 March 31, 2020 market value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than \$200.0 million; (4) a March 31, 2020 total enterprise, the sum of market value, preferred stock and total debt, greater than \$450.0 million; (5) were not the subject of a known acquisition at March 31, 2020; (6) with a Standard Industrial Classification (SIC) of 4941 (i.e., Water Supply Facilities and Infrastructure) and (7) with a North American Industry Classification System (NAICS) of 221310 (i.e., Water Supply and Irrigation Systems).

The eight companies (“Comparable Group”) that met the criteria for selection are listed in Table 2.

<u>Acquisition Date Size Statistics</u>				
	<u>Revenues</u> (Mill. \$)	<u>Customers</u>	<u>Population</u>	<u>Customer Density</u>
Valley Township Water System Assets	<u>\$0.699</u>	<u>1,669</u>	<u>7,493</u>	<u>4.5</u>
<u>Comparable Group</u>				
American States Water Co	\$473.869	285,128	1,000,000	3.5
American Water Works Co Inc	3,610.000	3,434,000	15,000,000	4.4
Artesian Resources -CL A	83.595	92,640	300,000	3.2
California Water Service Gp	714.557	520,600	2,000,000	3.8
Essential Utilities, Inc.	889.692	1,026,704	3,000,000	2.9
Middlesex Water Co	134.598	120,000	400,000	3.3
SJW Corp	420.482	386,607	1,604,442	4.2
York Water Co	<u>51.578</u>	<u>71,411</u>	<u>201,000</u>	<u>2.8</u>
Median	<u>\$447.176</u>	<u>335,868</u>	<u>1,302,221</u>	<u>3.5</u>

Table 2

We believe that similar economic, industry and business risks have affected the Comparable Group as those faced by the Water System. However, consideration must be given to the fact that no two companies are exactly alike. Table 2 presents comparative statistics regarding total revenues, customers, population of the area served, and customer density (population ÷ customers). On average, the Comparable Group are larger than the Water System. The relative size difference between the group and the Water System suggests that the risk of the Water System is greater than the Comparable Group. We will discuss the difference in risk resulting from size later in this report.

Appendix A-5.2 (Gannett Fleming)

Financial Review. We conducted a financial review that considered the financial and operating statistics for the Water System and the Comparable Group for the three-year period, 2017 to 2019. It is our opinion that the economic, industry and business risks affecting the Comparable Group selected are similar to those faced by the Water 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 Water System's rates have not considered a fair rate of return nor taxes. That is, the Water 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. Therefore, the results of the Water System's historical financial performance shown on Exhibits 4 and 6 should be viewed with this knowledge.

Financial Benchmark Analysis. To gain insight into the risk differences between the Water System and the Comparable Group, we reviewed financial ratios and coverages. Unfortunately, there is not sufficient information for the Water System to do so due to the lack of interest charges and deprecation charges being recorded in their financial information. Therefore, a Financial Benchmark Analysis cannot be done.

Appendix A-5.2 (Gannett Fleming)

Risk Analysis. From an operations standpoint, the Water System and the Comparable Group are indistinguishable. Both are required to meet SDWA and CWA requirements and are also required to provide safe and reliable services to their customers.

A basic premise of finance is the tradeoff between risk and return. That is, the higher the perceived risk, the higher the required return. Conversely, the lower the perceived risk, the lower the required return.

As mentioned previously, size is a determinant of risk. Based on size, the Water System's risk is higher than the Comparable Group given Water System's relatively small size. Table 2 details the size difference between the Water System and the Comparable Group. As shown on Table 2, the Water 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 Water System. Because the larger Comparable Group has a more diverse geographic operation than the Water 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 Water 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 3,113 publicly traded common stocks based on size of market value (market price multiples by the number of shares) and placed them into four different portfolios (quartiles). The common

Appendix A-5.2 (Gannett Fleming)

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 March 31, 2020 ranged from \$345 million to \$21,637 million as shown on Table 5.2 of Exhibit 5. Based on their market value, the Comparable Group's median market quartile was 3. Water System's market value would place them in quartile 4 based upon Water System's financial statements and since the largest company in quartile 4 on Table 5.1 had a market value of \$728 million.

The change in risk adjusted common stock return rate between quartile 3 and quartile 4 (column J) is 78 basis points. The results of the illustration shown on Exhibit 5 suggests the Water System's common equity cost rate could be about 78 basis points higher than the Comparable Group. The history of common stock returns indicates small company stocks are riskier than large company stocks because as one moves from the larger to smaller quartiles, the standard deviation (a measure of risk) of returns increases. Historically, common stock investors have been compensated for taking on this additional risk by the higher returns provided by small company stocks.

In general, it is reasonable to expect small companies to be more risky than large ones. Exhibit 5 shows small company stocks have been riskier over a long period of time than larger company stocks. This makes sense 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.

Appendix A-5.2 (Gannett Fleming)

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 Water 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 17, page 2). As shown on Exhibit 17, 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 Water System can best be characterized as a water distribution system with some treatment capacity system. The Water System does not have the number of large treatment facilities that the Comparable Group has. The Water System's gross property, plant and equipment is in relatively good condition given its age (Exhibit 6, Table 6.1) with 73% of their gross property, plant and equipment remaining undepreciated while 77% of the Comparable Group's gross property, plant and equipment remained undepreciated.

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 Water System'), 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 21% (100% - 79%) 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.⁴ This is evidenced by the 21% 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 2019.

We did not analyze the Water System's property, plant and equipment for "cost free" capital, or customer contributions, because the original source of funding for any part of the assets of a selling utility is irrelevant to the valuation process under 66 Pa. C.S. Section 1329.

Capital Expenditures Analysis. The level of capital expenditures required for business purposes is an indicator of risk. Over the last four years, the Comparable Group had annual capital expenditures of about 9% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2015-18, capital expenditures were not reported for the Water System. Therefore, a comparison of capital expenditures cannot be done.

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

⁴ 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.

Appendix A-5.2 (Gannett Fleming)

the Water System's revenues have been growing less than the Comparable Group (Exhibit 6, page 4, Table 6.4) over the last three years, while operating income plus depreciation and operating income have been growing faster. Prospectively, the Water System's growth rates should lag 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 Water 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 Water System's core profitability. The Water System's EBITDA profit margins are less than the Comparable Group's as are the EBIT profit margins indicating more risk (Exhibit 6, page 5, Table 6.5).

VALUATION

The purpose of this valuation is to comply with 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Water System') and conduct a fair market value appraisal of the Water System's assets as of March 31, 2020 in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches. Consequently, three basic valuation approaches were considered in this analysis: the cost approach, the income approach and the market approach.

The Cost Approach. In general terms, the cost approach measures value by determining the amount of money required to replace the future service capability of an asset. The cost approach is based on the premise that an informed purchaser will not pay more for a property than

Appendix A-5.2 (Gannett Fleming)

the cost of constructing an equally desirable substitute property, minus applicable depreciation, and assuming no undue delay.

The cost approach can include the use of the: original cost method; trended original cost method; reproduction cost method; and replacement cost method. From these cost bases, the calculated accrued depreciation (accumulated depreciation) is subtracted.

The original cost method begins with determining the original cost new (“OCN”) measure of the cost of the assets when first constructed. The OCN is based on (1) a review and summary of the utility’s accounting records, contractors’ invoices and bid tabulations to determine the most appropriate data sources of each type of asset; (2) and the “pricing out” of assets using unit costs for each vintage year that property was placed in service.

Under the trended cost method, the trended original cost (“TOC”) measures the reproduction cost by multiplying the OCN by specific cost indices. The TOC is based on (1) a review and summary of the OCN at each location to determine those elements that would be replaced-in-kind, those that would be replaced with current methods and technologies and those that would not be replaced; (2) the selection of cost indexes and the calculation of trended original cost for those elements that would be replaced-in-kind; and (3) the estimation of the cost to purchase or construct those elements that would be replaced with current methods and technologies. The TOC is a procedure for estimating reproduction cost new of property and is sometimes used as a substitute for reproduction cost method and may be considered a form of the reproduction cost method, though not as precise.

The reproduction cost method begins with determining the reproduction cost new (“RPCN”) by determining the current cost of constructing identical new property. The replacement cost method begins with estimating the replacement cost new (“RCN”) based on

Appendix A-5.2 (Gannett Fleming)

approximating the current cost of replacing service of existing property with similar new property having the nearest equivalent utility to the property being valued (as defined by the *International Glossary of Business Valuation Terms*).

The RPCN and the RCN methods include the research and verification of the inventory of a company's tangible personal property. Upon verification of the inventory, current material costs, current construction costs, engineering costs, administration costs, interest during construction, and entrepreneurial profit⁵ 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.

⁵ The administration costs and entrepreneurial profit are those of the contractors and engineers. The cost of overhead of the entity having the assets constructed can also be included. Generally overhead costs are allocated as part of an asset's cost, and usually represent at least 5% to 15% of infrastructure asset total costs.

Appendix A-5.2 (Gannett Fleming)

Accrued depreciation is a calculated amount that would be in the book reserve account at a point in time using the current depreciation parameters (i.e., average service life). The average service lives of depreciable assets are based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized “survivor curves” known as the Iowa type curves. The accrued depreciation ratio from a survivor curve is a concept that is used to estimate the consumed service capacity of plant at a point in time. The survivor curve is used to find the applicable accrued depreciation factors of the assets to result in the total accumulated depreciation.

The Original Cost Method. For this report, the Township provided us a copy of the Engineer’s assessment report “Valley Township Water Facilities Engineering Assessment and Original Cost” and related files prepared by Pennoni Associates Inc., to confirm the condition of the Water System’s property and equipment. We utilized the Engineering Assessment and calculated the Original Cost and Related Accrued Depreciation of the Water System as of March 31, 2020 (“OCNLD Study”) shown on Exhibit 7.

Page 1 of Exhibit 7 summarizes the original cost and related accrued depreciation by account for the Water System as of March 31, 2020. 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 Water 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 Water System by account and vintage year is shown on Exhibit 10.

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

Appendix A-5.2 (Gannett Fleming)

method. The estimated survivor curves are those used by other Pennsylvania water 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 Water System's utility plant in service as of March 31, 2020 was not less than \$6.8 million (\$6,843,616 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$1.9 million (\$1,859,957 rounded) as of March 31, 2020. After factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Water System's utility plant in service as of March 31, 2020 was determined to be \$5.0 million ($\$6,843,616 - \$1,859,957 = \$4,983,659$).

The Replacement Cost Method. We utilized the OCN to calculate the trended original cost (TOC) measures, or the replacement cost of the depreciable assets (RCN), by multiplying the OCN by specific transition factors.⁶ The result of this analysis is shown in the Replacement Cost and Related Accrued Depreciation of the Water System as of March 31, 2020 ("RCNLD Study") shown on Exhibit 9.

Page 1 of Exhibit 9 summarizes the replacement cost new and related accrued depreciation by account for the Water System as of March 31, 2020. 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 Water System (see Exhibit 10) was calculated by trending

⁶ 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.

Appendix A-5.2 (Gannett Fleming)

the original cost measures by multiplying the OCN by Handy-Whitman indices and obsolescence factors. A summarizing analysis of the replacement cost new of the Water System by account and vintage year and related transition factors is shown on Exhibit 10.⁷

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 Water System's utility plant in service as of March 31, 2020 was not less than \$14.7 million (\$14,735,442 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$4.5 million (\$4,496,869 rounded) as of March 31, 2020. After factoring in the RCNLD Study's accrued depreciation reserve, the RCNLD of Water System's utility plant in service as of March 31, 2020 was determined to be \$10.2 million ($\$14,735,442 - \$4,496,869 = \$10,238,573$).

The results of the OCNLD and RCNLD Cost Approaches show a range of value for the Water System of \$5.0 million to \$10.2 million and collectively, indicated value of \$10.2 million (\$10,238,573 rounded) for the Water System based on the results of the RCNLD.

⁷ All land and land rights were valued at original cost.

Appendix A-5.2 (Gannett Fleming)

Benchmark Metrics. Besides providing an indication of value based upon a cost method, the OCN and OCNLD can also provide a meaningful metric to evaluate the reasonableness of other indications of value produced by other valuation methods. 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 1.73-times (Exhibit 17, page 2) their OCNLD or net property, plant and equipment. Similarly, the Comparable Group's Enterprise Value is currently 1.33-times (Exhibit 17, page 2) their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" understate the multiple applicable to the Water 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.⁸ Subtracting customer contributions ("CIAC") from the Comparable Group's property, plant and equipment (Exhibit 17, page 3) based on differences between investor provided capital and OCN results in CIAC adjusted multiples of 1.95-times OCNLD and 1.50-times OCN for the Comparable Group.

Multiplying the Water System's OCN of \$6.8 million by the Comparable Group's 1.33-times OCN multiple or the 1.50-times contributions adjusted OCN multiple indicates a range of market value of \$9.0 million to \$10.2 million for the Water System, similar to the RCNLD of \$10.2 million. Further, multiplying the Water System's OCNLD of \$5.0 million by the Comparable Group's 1.73-times OCNLD multiple or the 1.95-times contributions adjusted OCNLD multiple indicates a range of market value of \$8.7 million to \$9.8 million for the Water System, similar to

⁸ 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.

Appendix A-5.2 (Gannett Fleming)

the RCNLD of \$10.2 million.⁹ The aforementioned range of market values for the Water System are not a substitute for an appraisal. However, the referenced range of market values for the Water System can be a meaningful metric to evaluate the reasonableness of other indication of value produced by other valuation methods.

Comparing the results of the OCNLD method and RCNLD method to the benchmark metrics indicates that the value indicated by the OCNLD method of \$5.0 million is inconsistent with the benchmark metrics. Therefore, the results of \$10.2 million RCNLD method form the basis for our Cost Approach conclusion of \$10.2 million (\$10,238,573 rounded) and is used as the Cost Approach as part of our fair market value determination for the Water System.

The Income Approach. Capitalizing or discounting a future income stream to a present value provides an indication of the value of a business. The capitalization or discount rate reflects future growth, business risk, economic factors, financial risk and industry risk of the assets. The theory behind the income approach is that the value of a business is the future economic benefit that ownership will provide.

The two most common methods of the income approach to valuation are the capitalization of earning or cash flow method and the discounted cash flow method (“DCF”). The capitalization of earning method converts a single base economic income number to a value by dividing it by a 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.

⁹ Similarly, multiplying the Water System’s number of customers of 1,669 by the Comparable Group’s \$9,216-times customer multiple indicates a market value of \$15.4 million, similar to the RCNLD of \$10.2 million.

Appendix A-5.2 (Gannett Fleming)

The DCF method uses estimates of future free cash flow and discounts them to arrive at a present value or price of the cash flows. Generally, the DCF analysis begins with an estimate of the Debt Free Net Cash Flow over the next five to twenty 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, plus or minus projected changes in net cash working capital, less 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 opportunity cost rate related to the risk of the cash flows. For the Water System, the appropriate discount rate is the current municipal revenue bond yield on March 31, 2020 of 3.70%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on March 31, 2020 and ranges from 5.95% to 7.16%.¹⁰ 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 Water System as it is currently owned (i.e., non-IOU) and operated. However, change in ownership of the Water System to another large regional municipal authority (“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

¹⁰ 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.”

nature that would accompany new ownership including future rates, future expenses, future capital expenditures, taxes, and regulation.

For a MUNI, the appropriate discount rate is the current municipal revenue bond, 3.70%, because debt is the only major source of capital available to finance an acquisition (Exhibit 20, 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.¹¹ For valuation purposes, an embedded cost of debt, or the historical cost of all debt issuances outstanding is not used because this capital is already invested in assets. Whereas the marginal cost of debt, 3.70%, at the valuation date is used in accordance with accepted valuation practices and used for market valuation purposes.

As discussed previously, for an IOU, the appropriate discount rate is the net of tax overall cost of capital (weighted average cost of capital), 5.95% to 7.16% (Exhibit 20, pages 2-9). 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 24.4% debt and 75.6% equity, a market cost of debt of 3.69% and a range of market cost of equity of 7.01% to 8.61%.¹² 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.¹³

11 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).

12 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>.

13 We did not use the 6.55% 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

Appendix A-5.2 (Gannett Fleming)

We began the Income Approach for the Water 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 Water 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. That is, the GASB's and DCED's motivations are to make sure government entities are accountable for the money they receive from the public or taxpayers, while the FASB's focus is to help investors and creditors make decisions. These differences in accounting objectives between GASB, DCED and FASB can present a problem when it comes to comparing the financial statements of entities that are either publicly or privately owned, such as the Water System and the Comparable Group.

Exhibit 1 presents the Water 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 Water 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 Water System's post-2020 financial information for pro forma expenses and returns to be reflective of a MUNI or IOU ownership.

rate and therefore, its use would provide a meaningless result. Where the 6.55% DSIC related cost was determined based the Comparable Group's book value capital structure of 46.6% debt and 53.4% equity, a cost of debt of 3.69% and a DSIC cost of equity of 9.95%. However, we note the 6.55% Comparable Group's DSIC related net of tax overall cost of capital falls within the 5.95% to 7.16% range of discount rates used in our Income Approach.

Appendix A-5.2 (Gannett Fleming)

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 earning method for the Water 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, plus or minus projected changes in net cash working capital, less projected capital expenditures. Specifically, our capitalization of earnings method capitalizes Water System's current (2020) budgeted 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 March 31, 2020 of 3.70% (Exhibit 12, line 24) as a capitalization rate.

We computed the Water System's indicated value based on the capitalization of earnings method by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow. We considered ranges of growth in the capitalization of earnings method. Based on the current level of rates we concluded a no growth scenario is the most probable for the Water System based on current ownership and operations.

Exhibit 12 shows the results of the capitalization of earnings method. For the Water System, the capitalization of earnings method using a 3.70% capitalization rate (no growth) indicates a value of \$1.3 million (without rate increases). For the Water System, we believe the no growth scenario is the most probable result based on current ownership and operations and therefore, the capitalization of earnings method suggests a value of \$1.3 million (without rate increases) based on budgeted 2020 results.

Appendix A-5.2 (Gannett Fleming)

The DCF Method. For the Water 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 Water System’s operations over the next 24 years. We use two different assumptions for the Water System’s future operations in the DCF methods: MUNI ownership shown on Exhibits 13 and 15; and IOU ownership shown on Exhibits 14 and 16.

Under the MUNI ownership the discount rate is the current 3.70% 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 5.95% to 7.16%. For the Capitalization DCF, the capitalization rate reflects a scenario of no additional growth (i.e., discount rate = capitalization rate) and a scenario of minimal growth of 0.2% (i.e., discount rate – 0.2% growth = capitalization rate) under MUNI ownership and 0.2% (i.e., discount rate – 0.2% growth = capitalization rate) under IOU ownership based on inflation, changes in Debt Free Net Cash Flows and the projected population growth.

We computed the Market Multiple DCF terminal values by multiplying the Water System’s projected EBIT and EBITDA by the Comparable Group’s adjusted multiples of 25.9-times and 18.4-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.

Appendix A-5.2 (Gannett Fleming)

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 Water System of \$6.8 million to \$7.0 million. The results of the Market Multiple DCF shown on Exhibit 13 show a value of \$7.0 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$7.0 million for the Water System based on the 0.2% growth assumption.

Exhibit 14 shows the results of the DCF method under the IOU ownership scenario. The results of the Capitalization DCF shown on Exhibit 14 show a range of value for Water System of \$4.3 million to \$5.2 million. The results of the Market Multiple DCF shown on Exhibit 14 show a range of value of \$5.7 million to \$6.8 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$5.5 million for the Water System.¹⁴

The DCF method based on the MUNI ownership scenario indicates a value of \$7.0 million and the DCF method based on the IOU ownership scenario indicates a value of \$5.5 million. Collectively, the DCF method indicates a value of \$6.2 million based on OCNLD.

Change in ownership of the Water 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

¹⁴ If we used the 6.55% 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 Water System of \$4.7 million. Further, the results of the Market Multiple DCF would show a value of \$6.2 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicate a value of \$5.5 million for the Water System. The DCF method based on the MUNI ownership scenario indicates a value of \$7.0 million and the DCF method based on the IOU ownership scenario indicates a value of \$5.5 million. Collectively, the DCF method indicates a value of \$6.2 million when DSIC is considered based on OCNLD.

Appendix A-5.2 (Gannett Fleming)

the PUC would result in an unknown determination of rate base and the related depreciation and authorized/achieved earning levels. In the current instance, we know the Market Approach and the Cost Approach (RCNLD) indicate values considerably higher than the OCNLD value.

Therefore, Exhibits 13 and 14 are recalculated on Exhibits 15 and 16 to reflect revenues and cash flows derived from an earnings base between OCNLD and RCNLD. 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 Water System of \$10.3 million to \$10.6 million. The results of the Market Multiple DCF shown on Exhibit 15 show a value of \$10.6 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$10.6 million for the Water System based on the 0.2% growth assumption.

Exhibit 16 shows the results of the DCF method under the IOU ownership. The results of the Capitalization DCF shown on Exhibit 16 show a range of value for Water System of \$6.6 million to \$8.1 million. The results of the Market Multiple DCF shown on Exhibit 16 show a range of value of \$8.8 million to \$10.5 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$8.5 million for the Water System.¹⁵

The DCF method based on the MUNI ownership scenario indicates a value of \$10.6 million and the DCF method based on the IOU ownership scenario indicates a value of \$8.5 million. Collectively, the DCF method indicates a value of \$9.5 million based on the Income Approach.

¹⁵ If we used the 6.55% 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 Water System of \$7.3 million. Further, the results of the Market Multiple DCF would show a value of \$9.6 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicate a value of \$8.5 million for the Water System. The DCF method based on the MUNI ownership scenario indicates a value of \$10.6 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of \$8.5 million. Collectively, the DCF method indicates a value of \$9.5 million when DSIC is considered.

Appendix A-5.2 (Gannett Fleming)

The Market Approach. There are two methods of doing the Market Approach to valuation: the market multiples method; and the selected transaction method. We developed both the market multiples method and the selected transaction method in our valuation analysis.

The Market Multiples Method. The market multiples method valuation begins by reviewing market price data of corporations engaged in the same or a similar line of business as the Water 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 the Water System. Since no marketplace exists for the common stock of the Water System, an alternative to estimate the value of the Water System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Water System. The specific market price data reviewed includes the market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents (i.e., Enterprise Value). Where the market value of common equity is the product of multiplying the closing stock price by the number of common shares outstanding. The Enterprise Value provides an indication of the value of the entire business. The Enterprise Value multiples (“Market Multiples”) are shown on Exhibit 17. For the Comparable Group, the Market Multiples were calculated as of March 31, 2020 based on the latest twelve months of financial data available at the appraisal date.

We used the Comparable Group’s Enterprise Value at March 31, 2020 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 Water System.

Appendix A-5.2 (Gannett Fleming)

The Comparable Group's Market Multiples reflect their capitalization rate of each financial and operating statistic. For example, a Market Multiple of EBIT of 16.14 times equates to a capitalization of EBIT of 6.20% ($1 \div 16.14 = 6.20\%$). Each capitalization rate is unique to the entity and the statistic being evaluated and reflects the growth and investment risk of the entity.

We believe that similar economic, industry and business risks have affected the Comparable Group as those faced by the Water System. However, consideration must be given to the fact that no two companies are exactly alike. On average, the Comparable Group are larger than the Water System. The relative size difference between the Comparable Group and Water System suggests that the risk to investors of the Water System is higher than the Comparable Group. Further, based upon our quantitative and qualitative analysis, we concluded that the Water System has more risk than the Comparable Group.

Accordingly, the Comparable Group's Market Multiples are not directly applicable to the Water System. We assumed the higher risk due to the Water 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 Water System being 15% more risky than the Comparable Group and produces a 85% (100% - 15%) base risk adjustment to the Comparable Group's Market Multiples. We applied the 85% base risk adjustment to all financial multiples. For example, the Comparable Group's ICAP multiple was multiplied by 85% to produce a lower multiple applicable to the Water 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 Water System (Exhibit 17, 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 17, page 3) financed

Appendix A-5.2 (Gannett Fleming)

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 Water System and growth.

The net risk adjustments to the Comparable Group’s Market Multiples are shown on page 1 of Exhibit 17. The adjustments to the Comparable Group’s Market Multiples are: 85% of ICAP (more risk/less growth), 96% of GPPE (more risk/lower growth and contributions), 96% of NPPE (more risk/lower growth and contributions), 85% of Revenue (more risk/lower growth); 85% of EBIT and 85% EBITDA (more risk/lower growth); and 95% of Customers and Population (growth and contributions).

Page 1 of Exhibit 17 shows the market multiples method indicated values based on: Revenue, EBIT and EBITDA (collectivity called “Income Statement Items”); ICAP, GPPE and NPPE (collectivity called “Capital Items”); and Customers and Population (collectivity called “Demographics Items”). For most municipal utilities, the indicated values based on Income Statement Items are far below the indicated values that are based on Capital Items and those based on Demographics Items. We attribute this to the dollars of Revenue, EBIT and EBITDA do not reflect any provision for taxes while the multiples for the Comparable Group do.¹⁶ 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 Water System. This is accomplished by multiplying the Water System’s financial and operating data by the Comparable Group’s median

¹⁶ The Revenue, EBIT and EBITDA for the Water Systems also do not include a fair rate of return.

Appendix A-5.2 (Gannett Fleming)

Market Multiples (Exhibit 17, page 1). The results of the market multiples method (Exhibit 17, page 1) show a range of value for the Water System of \$8.5 million to \$16.8 million and collectively, indicate value of \$12.7 million based on the meaningful Market Multiples.

The Selected Transactions Method. The selected transactions method entails analyzing certain public information relating to selected transactions involving the purchase or sales of businesses involved in the same or similar business line. The number of selected transactions available for review is limited because most acquisitions in the water and wastewater industry involve small acquisitions for which no public information exists. Additionally, not all transactions are comparable since some purchase prices may only involve the acquisition of the common stock, purchase prices may be net of cash and others may only involve assets. In any of these instances, the derived multiples (e.g., purchase price as a multiple of: Revenues; EBITDA; EBIT; etc.) would understate (overstate) the multiples involving a purchase price for an entire business enterprise (common stock) or business assets.

The selected transactions method provides a valuation of a business, or assets, at the time the acquisition of that business was completed, rather than the appraisal date market value (March 31, 2020). The change in the Comparable Group's market multiples of NPPE and ICAP, shown in Figure 1, shows the change in market valuation over a recent 72 month period. In Figure 1 the Comparable Group's market multiples of NPPE and ICAP were indexed to March 31, 2020 valuation multiples so that the March 31, 2020 valuation multiples have an index value of 100.

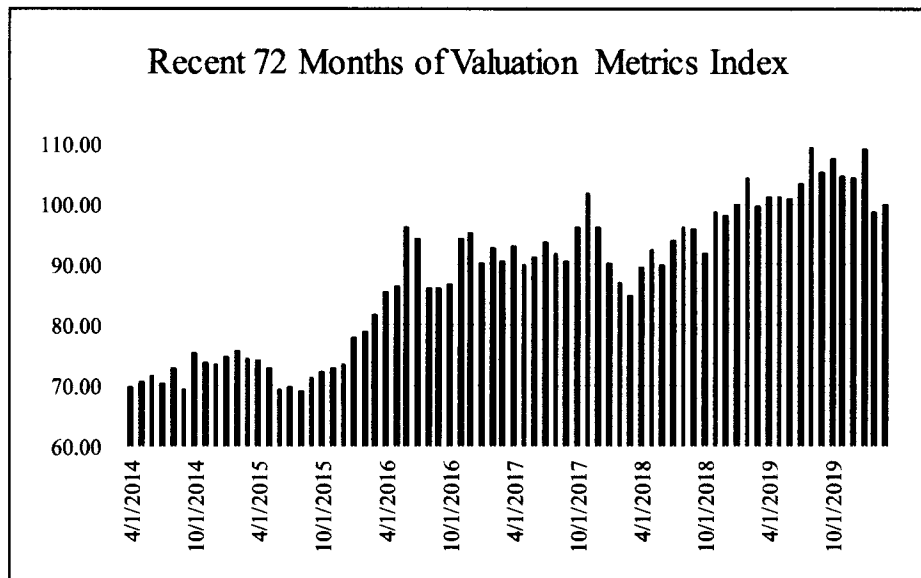


Figure 1

The index of the Comparable Group’s appraisal date (March 31, 2020) valuation multiples is 1% higher than 2020’s lowest levels and 9% below the 2020’s highest levels and 1% higher than 2019’s lowest levels and 10% below 2019’s highest levels. The index of the Comparable Group’s March 31, 2020 valuation multiples are 15% higher than 2018’s lowest levels and 1% above 2018’s highest levels, are 15% higher than 2017’s lowest levels and 2% below 2017’s highest levels, are 4% to 22% higher than 2016’s, and are 24% to 31% higher than 2015’s multiples’ index.

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 18.

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

Appendix A-5.2 (Gannett Fleming)

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 18, the selected transactions method indicated values based on the Income Statement Items are far different than the Water 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.¹⁷ 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 given and the metrics used are time period sensitive. For example, bids made in 2016 only reflects metrics from 2015 since the results of 2016 could not be known at the time of the bids. The selected transaction method ex-ante information (metrics) is shown on page 2 of Exhibit 18. Complete information only exists for a few of the transactions, with only Customers and Population having ample data for all transactions as is evident from the information shown (Exhibit 18, 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 18.

In the selected transactions method, the significant selected transactions multiples of the selling utilities are used to develop an indicated value of the Water System. This is accomplished by multiplying the Water System's financial and operating data by the selling utilities' transactions multiples (Exhibit 18, pages 2 and 3). The results of the selected transactions method (Exhibit 18, page 1) show a range of value for the Water System of \$9.1 million to \$16.1 million when all

¹⁷ Further, Revenue, EBIT and EBITDA for the Water Systems also do not include a fair rate of return.

Appendix A-5.2 (Gannett Fleming)

transactions are considered and a range of value of \$9.1 million to \$9.6 million when collection/distribution assets are solely considered.¹⁸ Collectively, the indicate value for the Water System is \$11.0 million after giving additional weight to the collection/distribution assets selected transactions multiples.

In 2018 two IOUs, Connecticut Water Service, Inc and SJW Group, announced a planned merger with Connecticut Water being acquired by SJW through a stock purchase. SJW Group's purchase of Connecticut Water was approved in late 2019. Although this acquisition is not directly applicable to the Water System, it does provide a range of indicated value for the Water System (Exhibit 18, page 4) which we relied on as a check. In this selected transaction, the significant selected transactions multiples of the selling utilities (Connecticut Water) are used to develop an indicated value of the Water System. This is accomplished by multiplying the Water System's financial and operating data by the selling utilities' transactions multiples. The results of the Connecticut Water selected transactions show a range of value for the Water System of \$12.0 million when the reported significant selected transactions multiples are considered and a value of \$13.8 million when the reported significant selected transactions multiples have been adjusted for "cost free" capital. Since the Connecticut Water transaction is a stock transaction, we believe it may understate the value of an asset purchase. However, we also note that Connecticut Water is a fully integrated company which is publicly traded while the Water System is not.

The results of the market multiples method shown on Exhibit 17 indicate value of \$12.7 million. The results of the selected transactions method shown on Exhibit 18 indicate value of \$11.0 million. Based on the aforesaid results, the Market Approach to valuation indicates a value

¹⁸ The Water System can best be characterized as a water distribution system with some treatment capacity system.

Appendix A-5.2 (Gannett Fleming)

of \$11.8 million for the Water System based on the results of the market multiples method and the selected transactions method.

Conclusion. We summarize our findings for the Water System on Exhibit 19. Our findings for the Water 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 capitalization of earnings method, market multiple discounted cash flow method and the capitalization discounted cash flow method form the basis for our Income Approach. Our Market Approach is supported by the market multiples method and selected transactions method. The results from the original cost method form the basis for our replacement cost method, and both methods form the basis for our Cost Approach.

We considered the results of each approach as an indicator of value individually, or as independent indicators of value. Therefore, all three approaches to valuation were given consideration in arriving at our estimate of the fair market value conclusion. Based on these facts, our conclusion regarding the fair market value is \$10.5 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 19. The results of our analyses, shown on Exhibit 19, indicate a range of value for the Water System of \$9.5 million to \$11.8 million and collectively indicate a fair market value of \$10,532,000 for the Water System.

Appendix A-5.2 (Gannett Fleming)

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 is also a licensed Municipal Advisor Representative (Series 50) by Municipal Securities Rulemaking Board (MSRB) and Financial Industry Regulatory Authority (FINRA).

BUSINESS EXPERIENCE

In 1996, Mr. Walker joined Gannett Fleming Valuation and Rate Consultants, LLC. In his capacity as Manager, Financial Studies and for the past twenty 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

Appendix A-5.2 (Gannett Fleming)

Gannett Fleming clients on GASB 34 and how it may affect them. The GASB 34 related services include inventory of assets, valuation of assets, salvage estimation, annual depreciation rate determination, estimation of depreciation reserve, asset service life determination, asset condition assessment, condition assessment documentation, maintenance estimate for asset preservation, establishment of condition level index, geographic information system (GIS) and data management services, management discussion and analysis (MD&A) reporting, required supplemental information (RSI) reporting, auditor interface, and GASB 34 compliance review.

In 2004, Mr. Walker was elected to serve on the Board of Directors of SURFA. Previously, he served as an ex-officio directors as an advisor to SURFA's existing President. In 2000, Mr. Walker was elected President of SURFA for the 2001-2002 term. Prior to that, he was elected to serve on the Board of Directors of SURFA during the period 1997-1998 and 1999-2000. Currently, he also serves on the Pennsylvania Municipal Authorities Association, Electric Deregulation Committee.

Prior to joining Gannett Fleming Valuation and Rate Consultants, LLC., Mr. Walker was employed by AUS Consultants - Utility Services. He held various positions during his eleven years with AUS, concluding his employment there as a Vice President. His duties included providing and supervising financial and economic studies on behalf of investor owned and municipally owned water, wastewater, electric, natural gas distribution and transmission, oil pipeline and telephone utilities as well as resource recovery companies.

Mr. Walker was also the Publisher of C.A. Turner Utility Reports from 1988 to 1996. 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. His column was the Financial News column and focused mainly on the natural gas industry.

EXPERT TESTIMONY

Mr. Walker has submitted testimony or been deposed on various topics before regulatory commissions and courts in 25 states including: Arizona, California, Colorado, Connecticut, Delaware, Hawaii, 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, 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

Appendix A-5.2 (Gannett Fleming)

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.

Appendix A-5.2 (Gannett Fleming)

APPENDIX B - KNOWN IMPACT OF COVID-19

APPENDIX B

Known Impact of COVID-19

On March 11, 2020 the World Health Organization (“WHO”) declared a quickly spreading coronavirus infection a pandemic (“COVID-19”). A coronavirus is a kind of common virus that causes an infection in sinuses, or upper throat. An outbreak of a new strain of coronavirus was first reported in Wuhan, China in late 2019 and quickly spread around the world. The WHO named the virus SARS-CoV-2, and the disease COVID-19. A pandemic is a disease outbreak that spreads widely across countries or continents. Categorizing a disease as a pandemic does not signify lethality nor economic calamity. Rather, labeling a disease as a pandemic indicates its spread over a wide geographic area and affecting a high proportion of the population.

The valuation date (March 31, 2020) is the specific date at which the value of the Water 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 subsequent to the valuation date but have no bearing on an appraised value.

Nevertheless, we have included subsequent information since the valuation date in this appendix (Appendix B) regarding COVID-19’s known impact for informational purposes only and this information does not affect the determination of value as of our valuation date of March 31, 2020.

The United States Environmental Protection Agency (“EPA”) is providing information on drinking water and wastewater to provide clarity to the public regarding COVID-19. According to EPA, the COVID-19 virus has not been detected in drinking-water supplies. Based on current

Appendix A-5.2 (Gannett Fleming)

evidence, the risk to water supplies is low.¹⁹ EPA sent a “letter to Governors in all 50 states, territories, tribes and Washington, DC, requesting that water and wastewater workers, as well as the manufacturers and suppliers who provide vital services and materials to the water sector, are considered essential workers and businesses by state authorities when enacting restrictions to curb the spread of COVID-19.”²⁰

In response to COVID-19 the Federal Reserve has provided monetary and fiscal stimulus to increase liquidity in the form of new fiscal stimulus programs and rate cuts. “For context, new fiscal stimulus and total fiscal deficits in the US are roughly double the levels seen in 2008-2009, and the US fiscal deficit we project for 2020 of 15%-18% is only matched by deficits seen at the height of WWII in 1942-1943.”²¹ The combined result of these actions by the Federal Reserve and investors’ flight to quality have resulted in artificial and historically low risk-free rates as measured by the 30-year treasury bond yield. However, public utility bond yields have not fluctuated (decreased) nearly to the degree which yields of 30-year treasury bonds have as is evident by the widening of the yield spread or default spread shown in **Table 3** below.

¹⁹ <https://www.epa.gov/coronavirus>, 5/27/20.

²⁰ <https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater>, 5/27/20

²¹ <https://www.jpmorgan.com/jpmpdf/1320748588999.pdf>, 5/29/20.

Appendix A-5.2 (Gannett Fleming)

		Bond Yields			Yield Spread		
		30-Year Treasury Bond	A Rated Public Utility Bond	Baa Rated Public Utility Bond	A Rated Yield LESS 30-Year Bond	Baa Rated Yield LESS 30-Year Bond	
Monthly	Sep-2019	2.16	3.37	3.71	1.21	1.55	
Monthly	Oct-2019	2.19	3.39	3.72	1.20	1.53	
Monthly	Nov-2019	2.28	3.43	3.76	1.15	1.48	
Monthly	Dec-2019	2.30	3.40	3.73	1.10	1.43	
Daily	1/30/20	2.04	3.13	3.45	1.09	1.41	
Daily	2/27/20	1.79	3.03	3.34	1.24	1.55	
*	Daily	3/31/20	1.35	3.69	4.39	2.34	3.04
Daily	4/27/20	1.25	2.98	3.56	1.73	2.31	
Daily	5/28/20	1.47	3.18	3.54	1.71	2.07	
Daily	6/30/20	1.41	3.00	3.38	1.59	1.97	

*** - Valuation date of current appraisal**

Table 3

Since the all-time market high for the S&P 500 Index, February 19, 2020, the COVID-19 pandemic and the related large-scale economic shutdown has caused widespread stock market turbulence and has generally resulted in decreased financial asset prices for some sectors of the economy. Nevertheless, asset prices reflected in water utility and wastewater utility market valuations have remained relatively steady as demonstrated by the Comparison Group's market multiples shown in **Table 4** below.²²

²² The first six spot dates and the related multiples shown in the market multiples Table were taken from recent Gannett Fleming appraisals filed with the PA PUC.

Appendix A-5.2 (Gannett Fleming)

Water Utility Comparison Group Enterprise Value as a Multiple of								
	Invest. Capital	Gross PP&E	Net PP&E	Rev.	EBITDA	EBIT	Customers	Population
	(x)	(x)	(x)	(x)	(x)	(x)	(\$)	(\$)
12/31/2017	2.04	1.20	1.57	6.00	15.07	21.23	\$7,348	\$1,994
4/30/2018	1.94	1.17	1.54	6.11	14.48	20.78	\$7,131	\$1,843
11/30/2018	1.90	1.17	1.55	7.06	16.34	23.99	\$7,538	\$2,120
2/28/2019	2.03	1.20	1.59	7.34	16.48	24.10	\$8,042	\$2,303
6/30/2019	2.25	1.40	1.83	7.88	18.03	26.89	\$8,368	\$2,463
12/31/2019	2.00	1.35	1.76	8.30	20.08	29.37	\$9,631	\$2,879
* 3/31/2020	1.95	1.33	1.73	8.02	21.60	30.43	\$9,216	\$2,677
4/30/2020	1.79	1.17	1.53	7.89	20.48	28.83	\$8,987	\$2,613
5/28/2020	1.83	1.39	1.74	8.06	21.25	31.21	\$9,492	\$2,779
6/30/2020	1.87	1.40	1.76	8.11	21.12	32.47	\$9,930	\$2,818

*** - Valuation date of current appraisal**

Comment:

Valuation date of 12/31/2017 from East Bradford Township A-2018-3001582
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2018-3001582

Valuation date of 04/30/2018 from Exeter Township – A-2018-3004933
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2018-3004933

Valuation date of 11/30/2018 from Cheltenham Township – A-2019-3008491
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3008491

Valuation date of 02/28/2019 from East Norriton – A-2019-3009052
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3009052

Valuation date of 06/30/2019 from Borough of Kane Authority – A-2019-3014248
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3014248

Valuation date of 12/31/2019 from DELCORA – A-2019-3015173
http://www.puc.state.pa.us/about_puc/consolidated_case_view.aspx?Docket=A-2019-3015173

Table 4

Even though most of the US will likely be affected by COVID-19's related economic effects, we believe those effects will vary greatly from place-to-place dependent on the nature of the business sectors which comprise each local economy and their concentration within the local

Appendix A-5.2 (Gannett Fleming)

economy. We do not believe the appraised value of the long-lived Water System assets will be materially impacted by the COVID-19 or its related short-term events. In all likelihood, both the mandatory and voluntary testing, preventative measures and social distancing should impact the spread of the disease and constrain its impact to months while the Water System assets will provide service for decades.

Moreover, the Water System's customer base is not heavily dependent on customers from sectors of the economy providing tourism and travel, employment services, mining/oil and gas (energy), and leisure and hospitality which are likely to be the most impacted by COVID-19's related short-term events. Therefore, even on a short-term basis, the Water System's revenues and cash flows should not be materially impacted on a relative basis.

Appendix A-5.2 (Gannett Fleming)

COMPLIANCE & APPRAISAL CERTIFICATION

Appendix A-5.2 (Gannett Fleming)
Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State the identity of the client and any intended users, by name or type:**

The client is the Valley Township. The intended users of the valuation are the Valley Township, Pennsylvania American Water Company, Inc. and the Pennsylvania Public Utility Commission.

- **State the intended use of the appraisal**

The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of Valley Township's Water System assets 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.**

Valley Township owns and operates the Water System which consists of the Mineral Springs Water Treatment Plant ("WTP"), three wells, one 150,000 gallon elevated tank, approximately 22 miles of distribution mains, associated infrastructure and appurtenances, and related land and land rights. The Water System sells approximately 65 million gallons per year of drinking water to approximately 1,670 existing residential, commercial, and institutional customers in the Township. The Water System is supplied by three wells and bulk water purchased from Pennsylvania-American Water Company ("PAWC").

Water pumped from the three wells is treated at WTP and then conveyed from the WTP directly into the distribution system and into a 150,000-gallon elevated storage tank. The three wells, the WTP and the elevated storage tank were originally installed in 1988. The Delaware River Basin Commission ("DRBC") and PA Department of Environmental Protection ("DEP") approved a permit in 1988 for the withdrawal of up to 4,500,000 gallons of groundwater per month. The permit has been extended a number of times over the years with the latest renewal for an additional ten years approved in 2018. The original permit extensions were granted with a condition that an agreement be reached with the City of Coatesville Authority ("CCA") for installation of a back-up interconnection for the system. The CCA has since transferred ownership of its water supply facilities to PAWC. Currently, bulk water purchased from PAWC is supplied at the Airport Road Interconnect, Hillview Interconnect, Old Lincoln Highway Interconnect, and Red Road Interconnect.

Appendix A-5.2 (Gannett Fleming)
**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021**

Fulfillment of Requirements for a Personal Property Appraisal and Report

The WTP components include: two booster pumps, pump controls; treatment; chlorine contact tank; three well meters, and one finished water meter. The treatment includes sodium hypochlorite for disinfection, bulk caustic soda for pH adjustment, three chemical feed pumps, and continuous chlorine analyzer. The WTP is generally in good condition. All finished water piping and valves were replaced in 2008 and the meters and portions of the raw water piping have been replaced since 2008. A SCADA system was installed and the control panel was replaced in 2016. Additionally, one of the booster pumps was replaced in 2017.

The three wells (V-1, V-2 and V-4) were drilled in 1987. The well pumps and motors have been replaced several times since their original installation. Rehabilitation work on Well V-1 and V-2 was conducted in 2012. The 90-foot, 150,000-gallon elevated storage tank was constructed in 1988. The elevated storage tank was rehabilitated and repainted in 2009.

The Water System serves 1,669 customers through about 115,133 LF of ductile iron pipe mains that range in size from 6” to 14”. The majority of the mains were installed in the 2000s and the earliest installation is 1988. The Water System has 1,669 services, meters and 60 hydrants. Valley Township’s water system assets include water distribution, transmission, wells, storage and treatment assets, and related land and land rights.

Valley Township’s water system land and land rights include land used for water distribution and transmission, about 22 miles of mains, three wells, a storage tank, treatment plant and multiple easements and rights-of-way necessary to operate the Water System.

- **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

Appendix A-5.2 (Gannett Fleming)
Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **State the effective date of the appraisal and the date of the report**

The effective date of the appraisal is as of March 31, 2020 and the appraisal report date is July 2020.

- **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**

Conduct a fair market value appraisal of the Valley Township's Water System assets in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches.

The premise of value is going concern and the assets are valued as a group under the premise that they collectively comprise an ongoing operating business enterprise.

We accepted all information and data provided by the Valley Township as it pertains to this assignment "as is" after a limited review. That is, we neither audited nor verify any data, original cost data, financial records or operating data provided for this assignment.

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 Pennoni Associates Inc. from its original cost new inventory. The original cost method determined the original cost new measure of the cost of the assets when first constructed. The original cost new inventory was trended using the Handy Whitman Index of Public Utility Construction Costs for the water industry to produce the reproduction cost new and converted to replacement cost new after obsolescence was factored. The calculated accrued depreciation was determined for the original cost new and for the replacement cost new. The calculated accrued depreciation was based on the assets' attained ages, and the service life of the assets. The cost basis of depreciable assets was reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed. All land and land rights were valued at original cost.

Income Approach - The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of earning method converted a single base economic income number to a value by

Appendix A-5.2 (Gannett Fleming)
**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021**

Fulfillment of Requirements for a Personal Property Appraisal and Report

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 Water 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 Water 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 the Water System financial and operating statistic to produce an indicated value for the Water System.

Reconciliation of the Valuation Approaches - The fair market value conclusion was based on reconciliation of each of the three approaches to value and the intended purpose of the appraisal.

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

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

Not applicable.

- **Clearly and accurately disclose all assumptions, extraordinary assumptions, hypothetical conditions, and limiting conditions used in the assignment**

Not applicable.

Appendix A-5.2 (Gannett Fleming)
Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2020-2021

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**

Valley Township's water system land and land rights include land used for water distribution and transmission, about 22 miles of mains, three wells, a storage tank, treatment plant and multiple easements and rights-of-way necessary to operate the Water System.

The Valley Township Water System's land and land rights were assumed to be used for the operation of the Water 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 Water System for the appraisal, were valued at original cost, and not at highest and best use of the real estate.

- **State and explain any permitted departures from specific requirements of STANDARD 1 and the reason for excluding any of the usual valuation approaches. The appraisal then becomes a limited appraisal - a limited appraisal report must contain a prominent section that clearly identifies the extent of the appraisal process performed and the departures taken**

No departures for Standard 1 were made.

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

See attached for signed certification.

Appendix A-5.2 (Gannett Fleming)
APPRAISAL CERTIFICATION
Valley Township, Pennsylvania
Valley Township
Water System Assets
Fair Market Value Appraisal Report
As of March 31, 2020

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 Valley Township Water System 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 (2020-2021)

Appendix A-5.2 (Gannett Fleming)
APPRAISAL CERTIFICATION
Valley Township, Pennsylvania
Valley Township
Water System Assets
Fair Market Value Appraisal Report
As of March 31, 2020

- 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: 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

Appendix A-5.2 (Gannett Fleming)

EXHIBITS

Valley Township Water System Assets
Selected Audited Financial Information

	12-Months Ended December 31:			
	2016	2017	2018	2019
Gross property, plant & equipment	NA	NA	NA	NA
Accumulated depreciation	NA	NA	NA	NA
Net property, plant & equipment	NA	NA	NA	NA
Assets	NA	NA	NA	NA
Debt Current	NA	NA	NA	NA
Debt	NA	NA	NA	NA
Equity	NA	NA	NA	NA
Total Capital	NA	NA	NA	NA
OPERATING REVENUES				
Charges for services	NA	683,151	725,146	679,252
Other operating income	NA	6,294	163	19,298
TOTAL OPERATING REVENUES	682,994	689,445	725,309	698,550
Expenses	665,030	637,853	683,721	619,845
Depreciation	0	0	0	0
TOTAL OPERATING EXPENSES	665,030	637,853	683,721	619,845
CAPX	NA	NA	NA	NA
Interest	NA	NA	NA	NA
Principal	NA	NA	NA	NA

Source of Information: Audited Financial Statements, Statement of Revenues & Expenditures, and Budgets (2016-2019)

Valley Township Water System Assets
Population, Housing Units, Customer Count, and
New Connections

	<u>Valley Township</u> <u>2019</u>		<u>Population</u> <u>To Customers</u>
Population	7,493		<u>4.5</u>
Housing Units	<u>3,140</u>	Distribution	
Average Size	<u>2.39</u>		

	<u>Current</u>
<u>Customers</u>	
Residential	1,644
Commercial	24
Institutional	1
Total	<u><u>1,669</u></u>

	<u>Projected New Connections</u>				
	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
New Connections	2	51	49	41	41

Population and Housing Units (2019)

	Population in	Total	Vacancy Rate	Population
<u>Total Population</u>	<u>Households</u>	<u>Housing</u> <u>Units</u>		<u>per Housing</u> <u>Unit</u>
7,493	7,449	3,140	6.6%	2.39

State	Population		Percentage Change
	2000	2010	
Alabama	4,447,351	4,779,736	7.5%
Alaska	626,931	710,231	13.3%
Arizona	5,130,632	6,392,017	24.6%
Arkansas	2,673,400	2,915,918	9.1%
California	33,871,653	37,253,956	10.0%
Colorado	4,302,015	5,029,196	16.9%
Connecticut	3,405,602	3,574,097	4.9%
Delaware	783,600	897,934	14.6%
District of Columbia	572,059	601,723	5.2%
Florida	15,982,824	18,801,310	17.6%
Georgia	8,186,816	9,687,653	18.3%
Hawaii	1,211,537	1,360,301	12.3%
Idaho	1,293,956	1,567,582	21.1%
Illinois	12,419,647	12,830,632	3.3%
Indiana	6,080,517	6,483,802	6.6%
Iowa	2,926,382	3,046,355	4.1%
Kansas	2,688,824	2,853,118	6.1%
Kentucky	4,042,285	4,339,367	7.3%
Louisiana	4,468,958	4,533,372	1.4%
Maine	1,274,923	1,328,361	4.2%
Maryland	5,296,507	5,773,552	9.0%
Massachusetts	6,349,105	6,547,629	3.1%
Michigan	9,938,480	9,883,640	-0.6%
Minnesota	4,919,492	5,303,925	7.8%
Mississippi	2,844,656	2,967,297	4.3%
Missouri	5,596,683	5,988,927	7.0%
Montana	902,195	989,415	9.7%
Nebraska	1,711,265	1,826,341	6.7%
Nevada	1,998,257	2,700,551	35.1%
New Hampshire	1,235,786	1,316,470	6.5%
New Jersey	8,414,347	8,791,894	4.5%
New Mexico	1,819,046	2,059,179	13.2%
New York	18,976,821	19,378,102	2.1%
North Carolina	8,046,485	9,535,483	18.5%
North Dakota	642,200	672,591	4.7%
Ohio	11,353,145	11,536,504	1.6%
Oklahoma	3,450,652	3,751,351	8.7%
Oregon	3,421,436	3,831,074	12.0%
Pennsylvania	12,281,054	12,702,379	3.4%
Rhode Island	1,048,319	1,052,567	0.4%
South Carolina	4,011,816	4,625,364	15.3%
South Dakota	754,844	814,180	7.9%
Tennessee	5,689,267	6,346,105	11.5%
Texas	20,851,790	25,145,561	20.6%
Utah	2,233,198	2,763,885	23.8%
Vermont	608,827	625,741	2.8%
Virginia	7,079,030	8,001,024	13.0%
Washington	5,894,141	6,724,540	14.1%
West Virginia	1,808,350	1,852,994	2.5%
Wisconsin	5,363,715	5,686,986	6.0%
Wyoming	493,782	563,626	14.1%
Total - States & D.C.	281,424,603	308,745,538	9.7%

Source: U.S. Census Bureau, Population Division

Geographic Area	Population		Percentage Change	Municipal Growth Rank
	2000	2010		
Pennsylvania	12,281,054	12,702,379	3.4%	-
Chester County	433,501	498,886	15.1%	-
Valley township	5,116	6,794	32.8%	97 out of 2,572

Source: U.S. Census Bureau, Census 2000 & 2010 Redistricting Data (Public Law 94-171) Summary File.

TABLE 3.3 Forecasted Population by County and Municipality, 2015-2045

	Population						Percentage Change							
	Estimate 2015	Forecast 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2015 to 2045
Bucks County	627,367	640,495	654,792	669,299	681,273	691,111	699,498	2.1%	2.2%	2.2%	1.8%	1.4%	1.2%	11.5%
Chester County	515,939	543,702	571,641	599,932	624,832	645,562	662,283	5.4%	5.1%	4.9%	4.2%	3.3%	2.6%	28.4%
Delaware County	563,894	568,337	572,758	577,248	581,136	584,329	587,037	0.8%	0.8%	0.8%	0.7%	0.5%	0.5%	4.1%
Montgomery County	819,264	840,934	863,327	884,387	903,114	918,918	932,820	2.6%	2.7%	2.4%	2.1%	1.7%	1.5%	13.9%
Philadelphia County	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	1.7%	1.4%	1.7%	1.4%	1.0%	0.8%	8.2%
Subtotal - Five Pennsylvania Counties	4,093,907	4,188,255	4,279,334	4,374,837	4,457,645	4,523,322	4,577,771	2.3%	2.2%	2.2%	1.9%	1.5%	1.2%	11.8%
Burlington County	450,226	459,344	468,428	475,978	482,560	488,026	492,709	2.0%	2.0%	1.6%	1.4%	1.1%	1.0%	9.4%
Camden County	510,923	514,006	517,073	520,189	522,886	525,101	526,997	0.6%	0.6%	0.6%	0.5%	0.4%	0.4%	3.1%
Gloucester County	291,479	307,766	323,969	340,425	354,677	366,383	376,308	5.6%	5.3%	5.1%	4.2%	3.3%	2.7%	29.1%
Mercer County	371,398	377,328	383,227	389,219	394,407	398,669	402,283	1.6%	1.6%	1.6%	1.3%	1.1%	0.9%	8.3%
Subtotal - Four New Jersey Counties	1,624,026	1,658,444	1,692,697	1,725,811	1,754,530	1,778,179	1,798,297	2.1%	2.1%	2.0%	1.7%	1.3%	1.1%	10.7%
Total - Nine DVRPC Counties	5,717,933	5,846,699	5,972,031	6,100,648	6,212,175	6,301,501	6,376,068	2.3%	2.1%	2.2%	1.8%	1.4%	1.2%	11.5%
Valley Township	7,632	8,187	8,740	9,301	9,787	10,186	10,524	7.3%	6.8%	6.4%	5.2%	4.1%	3.3%	37.9%

Source: Delaware Valley Regional Planning Commission, June 2016.

TABLE 3.4 Forecasted Employment by County and Municipality, 2015-2045

	Employment						Percentage Change							
	Estimate 2015	Forecast 2020	Forecast 2025	Forecast 2030	Forecast 2035	Forecast 2040	Forecast 2045	2015 to 2020	2020 to 2025	2025 to 2030	2030 to 2035	2035 to 2040	2040 to 2045	2015 to 2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	2.1%	2.3%	2.3%	1.9%	1.5%	1.2%	11.9%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	5.4%	5.1%	4.9%	4.2%	3.3%	2.6%	28.4%
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	0.8%	0.8%	0.8%	0.7%	0.5%	0.5%	4.1%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	2.7%	2.7%	2.5%	2.1%	1.9%	1.4%	14.1%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	1.7%	1.4%	1.7%	1.4%	1.0%	0.8%	8.3%
Subtotal - Five Pennsylvania Counties	2,255,680	2,310,874	2,364,147	2,419,171	2,467,523	2,506,728	2,538,789	2.4%	2.3%	2.3%	2.0%	1.6%	1.3%	12.6%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	2.1%	2.0%	1.7%	1.1%	1.1%	0.9%	9.3%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	0.6%	0.6%	0.6%	0.5%	0.4%	0.4%	3.1%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	5.6%	5.3%	5.1%	4.2%	3.3%	2.7%	29.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	1.6%	1.6%	1.6%	1.3%	1.1%	0.9%	8.3%
Subtotal - Four New Jersey Counties	912,557	930,545	948,431	965,698	979,816	991,943	1,002,261	2.0%	1.9%	1.8%	1.5%	1.2%	1.0%	9.8%
Total - Nine DVRPC Counties	3,168,237	3,241,419	3,312,578	3,384,869	3,447,339	3,498,671	3,541,050	2.3%	2.2%	2.2%	1.8%	1.5%	1.2%	11.8%
Valley Township	2,085	2,249	2,440	2,633	2,787	2,915	3,074	7.9%	8.5%	7.9%	5.8%	4.6%	5.5%	47.4%

Source: Delaware Valley Regional Planning Commission, September 2016. Base employment data from the National Establishments Time Series (NETS) database, 2010 and 2013.

Comparison of Credit Market Financial Risk Metrics
For Valley Township Water System Assets
And the Comparable Group
2017 - 2019 (1)

	Valley Township Water System Assets			Comparable Group		
	2019	2018	2017	2019	2018	2017
Debt Service Coverage	NA	NA	NA	2.0	3.7	2.7
Pre-Tax Interest Coverage - Including AFC(2)(x)	NA	NA	NA	3.6	3.6	4.4
Post-Tax Interest Coverage - Including AFC(2)(x)	NA	NA	NA	2.9	3.0	3.5
GCF / Interest Coverage(3)(x)	NA	NA	NA	4.7	4.9	5.9
GCF / Tot. Debt(4)(%)	NA	NA	NA	15.8	18.7	23.2
GCF / Construction(5)(%)	NA	NA	NA	63.0	63.2	81.8

- 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: 2017-19 Annual Reports and Budgets
S&P Capital IQ
EXHIBIT 1

Valley Township Water System Assets
 Illustrating the Impact of Size on Risk and Return
 Through Common Stock Returns

TABLE 5.1 Change in Return and Risk for Size-Quartiles Portfolio of the NYSE/AMEX/NASDAQ Common Stocks (1)

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>
	Market	Average	Standard	Change in	Largest	Quartile	Comparison	Beta	Beta Adjusted	
<u>Market</u>	<u>Quartile</u>	Quartile	Deviation	Quartile	Market Value	Beta	Group	Ratio	Quartile	Change in
<u>Quartile</u>	<u>Name</u>	1926-18	of	Premium	in the Quartile		Beta		Size	Quartile
		(%)	(%)	(%)	(Mill \$)				Premium	Premium
									(%)	(%)
(Largest Stocks)										
1	Large-Cap	0.00	19.9	--	1,073,390	1.00	0.65	65%	0.00	
2	Mid-Cap	0.89	24.3	0.89	13,456	1.12	0.65	58%	0.52	0.52
3	Low-Cap	1.60	28.5	0.71	2,993	1.22	0.65	53%	0.85	0.34
4	Mico-Cap	3.40	38.5	1.80	728	1.35	0.65	48%	1.64	0.78
(Smallest Stocks)										

Notes: (1) 2019 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook

TABLE 5.2 Recent Market Values and Ibbotson Associates Market Quartiles for the Comparable Group

	3/31/2020	Market	
	Market	Quartile	Market
	Value	Name	Quartile
	(Mill \$)		
<u>Comparable Group</u>			
American States Water Co	3,013	Mid-Cap	2
American Water Works Co Inc	21,637	Large-Cap	1
California Water Service Gp	345	Mico-Cap	4
Essential Utilities, Inc.	2,442	Low-Cap	3
Middlesex Water Co	9,972	Mid-Cap	2
Middlesex Water Co	1,048	Low-Cap	3
SJW Corp	1,646	Low-Cap	3
York Water Co	566	Mico-Cap	4
Median	2,044	Low-Cap	3

Valley Township Water 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 \$)			
Valley Township Water System Assets	\$6.844	\$4.984	<u>73%</u>
Comparable Group			
American States Water Co	\$1,980.305	\$1,437.042	73%
American Water Works Company	24,044.000	18,335.000	76%
Artesian Resources Corp	672.391	535.013	80%
California Water Service Group	3,540.033	2,409.873	68%
Essential Utilities, Inc.	8,214.803	6,358.657	77%
Middlesex Water Co	893.664	722.044	81%
SJW Group	3,192.780	2,230.343	70%
York Water Company (The)	399.269	313.993	<u>79%</u>
Median			<u>77%</u>

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 3/31/2020)				
Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	2019 Percentage of Known "Cost Free" Capital	
(Millions of \$)				
Comparable Group				
American States Water Co	\$1,437.042	\$1,101.458	77%	23%
American Water Works Co Inc	18,335.000	15,678.000	86%	19%
Artesian Resources -CL A	535.013	314.114	59%	39%
California Water Service Gp	2,409.873	1,778.008	74%	27%
Essential Utilities, Inc.	6,358.657	6,978.773	110%	25%
Middlesex Water Co	722.044	589.563	82%	25%
SJW Corp	2,230.343	2,313.062	104%	26%
York Water Co	313.993	237.467	76%	28%
Median			<u>79%</u>	<u>26%</u>

Valley Township Water 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				Capital Expenditures			
	2019	2018	2017	2016	2019	2018	2017	2016
	(Millions of \$)				(Millions of \$)			
Valley Township Water System Assets	NA	NA	NA	NA	NA	NA	NA	NA
<u>Comparable Group</u>								
American States Water Co	\$1,437.042	\$1,304.683	\$1,213.264	\$1,159.766	\$151.940	\$126.561	\$113.126	\$129.867
American Water Works Co Inc	18,335.000	17,409.000	16,246.000	14,992.000	1,654.000	1,586.000	1,434.000	1,311.000
Artesian Resources -CL A	535.013	502.527	464.384	429.383	40.677	49.053	41.094	28.251
California Water Service Gp	2,409.873	2,220.873	2,036.971	1,847.460	273.770	271.707	259.194	228.938
Essential Utilities, Inc.	6,358.657	5,930.326	5,399.860	5,001.615	550.273	495.737	478.089	382.996
Middlesex Water Co	722.044	628.476	566.718	526.907	89.125	72.094	50.301	47.375
SJW Corp	2,230.343	1,365.771	1,278.025	1,180.481	164.325	135.973	141.213	129.134
York Water Co	313.993	299.871	289.524	271.652	20.537	16.882	25.074	13.208
	Capital Expenditures / PP&E-Total Net							
	2019	2018	2017	2016				
Valley Township Water System Assets	NA	NA	NA	NA				
<u>Comparable Group</u>								
American States Water Co	11%	10%	9%	11%				
American Water Works Co Inc	9%	9%	9%	9%				
Artesian Resources -CL A	8%	10%	9%	7%				
California Water Service Gp	11%	12%	13%	12%				
Essential Utilities, Inc.	9%	8%	9%	8%				
Middlesex Water Co	12%	11%	9%	9%				
SJW Corp	7%	10%	11%	11%				
York Water Co	7%	6%	9%	5%				
Median	9%	10%	9%	9%				

Valley Township Water System Assets
 Property Plant & Equipment Analysis
 Capital Expenditures Analysis
 Growth Rate Analyses
Profit Margin Analyses

Revenues				EBITDA			
2019	2018	2017	2016	2019	2018	2017	2016

(Millions of \$)

(Millions of \$)

Valley Township Water System Assets	\$0.699	\$0.725	\$0.689	\$0.683	\$0.079	\$0.042	\$0.052	\$0.018
<u>Comparable Group</u>								
American States Water Co	\$473.869	\$436.816	\$440.603	\$436.087	\$164.085	\$144.803	\$159.380	\$154.263
American Water Works Co Inc	3,610.000	3,440.000	3,357.000	3,302.000	1,306.476	1,154.957	1,102.741	917.849
Artesian Resources -CL A	83.595	80.411	82.235	79.089	433.284	387.423	380.137	340.460
California Water Service Gp	714.557	698.196	676.113	609.370	30.401	25.800	26.382	25.061
Essential Utilities, Inc.	889.692	838.091	809.525	819.875	147.867	140.577	127.710	122.709
Middlesex Water Co	134.598	138.077	130.775	132.906	38.056	33.947	35.841	28.720
SJW Corp	420.482	397.699	389.225	339.706	86.302	83.532	68.003	63.335
York Water Co	51.578	48.437	48.589	47.584	25.743	24.780	24.359	21.800

EBIT			
2019	2018	2017	2016

(Millions of \$)

Valley Township Water System Assets	\$0.079	\$0.042	\$0.052	\$0.018
<u>Comparable Group</u>				
American States Water Co	\$128.372	\$104.140	\$120.107	\$115.154
American Water Works Co Inc	1,220.000	1,139.000	1,228.000	1,147.000
Artesian Resources -CL A	25.106	23.946	26.895	27.150
California Water Service Gp	109.924	119.686	132.592	104.015
Essential Utilities, Inc.	357.241	315.347	328.967	333.298
Middlesex Water Co	34.318	37.766	37.967	40.060
SJW Corp	70.089	89.694	98.079	93.116
York Water Co	22.335	21.232	22.473	22.888

Valley Township Water 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		
	2019	2018	2017	2019	2018	2017
Valley Township Water System Assets	-3.6%	5.2%	0.9%	88.1%	-19.2%	188.9%
Comparable Group						
American States Water Co	8.5%	-0.9%	1.0%	13.3%	-9.1%	3.3%
American Water Works Co Inc	4.9%	2.5%	1.7%	13.1%	4.7%	20.1%
Artesian Resources -CL A	4.0%	-2.2%	4.0%	11.8%	1.9%	11.7%
California Water Service Gp	2.3%	3.3%	11.0%	17.8%	-2.2%	5.3%
Essential Utilities, Inc.	6.2%	3.5%	-1.3%	5.2%	10.1%	4.1%
Middlesex Water Co	-2.5%	5.6%	-1.6%	12.1%	-5.3%	24.8%
SJW Corp	5.7%	2.2%	14.6%	3.3%	22.8%	7.4%
York Water Co	6.5%	-0.3%	2.1%	3.9%	1.7%	11.7%
Median	5.3%	2.4%	1.9%	12.0%	1.8%	9.6%
	EBIT Growth					
	2019	2018	2017			
Valley Township Water System Assets	88.1%	-19.2%	188.9%			
Comparable Group						
American States Water Co	23.3%	-13.3%	4.3%			
American Water Works Co Inc	7.1%	-7.2%	7.1%			
Artesian Resources -CL A	4.8%	-11.0%	-0.9%			
California Water Service Gp	-8.2%	-9.7%	27.5%			
Essential Utilities, Inc.	13.3%	-4.1%	-1.3%			
Middlesex Water Co	-9.1%	-0.5%	-5.2%			
SJW Corp	-21.9%	-8.5%	5.3%			
York Water Co	5.2%	-5.5%	-1.8%			
Median	5.0%	-7.9%	1.7%			

Valley Township Water System Assets
 Property Plant & Equipment Analysis
 Capital Expenditures Analysis
 Growth Rate Analyses
Profit Margin Analyses

TABLE 6.5 Profit Margin Analyses			
	EBITDA / Revenue - Margin		
	2019	2018	2017
Valley Township Water System Assets	11.3%	5.8%	7.5%
Comparable Group			
American States Water Co	34.6%	33.1%	36.2%
American Water Works Co Inc	36.2%	33.6%	32.8%
Artesian Resources -CL A	518.3%	481.8%	462.3%
California Water Service Gp	4.3%	3.7%	3.9%
Essential Utilities, Inc.	16.6%	16.8%	15.8%
Middlesex Water Co	28.3%	24.6%	27.4%
SJW Corp	20.5%	21.0%	17.5%
York Water Co	49.9%	51.2%	50.1%
Median	31.5%	28.9%	30.1%
	EBIT / Revenue - Margin		
	2019	2018	2017
Valley Township Water System Assets	11.3%	5.8%	7.5%
Comparable Group			
American States Water Co	27.1%	23.8%	27.3%
American Water Works Co Inc	33.8%	33.1%	36.6%
Artesian Resources -CL A	30.0%	29.8%	32.7%
California Water Service Gp	15.4%	17.1%	19.6%
Essential Utilities, Inc.	40.2%	37.6%	40.6%
Middlesex Water Co	25.5%	27.4%	29.0%
SJW Corp	16.7%	22.6%	25.2%
York Water Co	43.3%	43.8%	46.3%
Median	28.6%	28.6%	30.9%

Source: S&P Capital IQ
 EXHIBIT 1

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF ORIGINAL COST AND ACCRUED DEPRECIATION
OF WATER SYSTEM AS OF MARCH 31, 2020**

ACCOUNT	DESCRIPTION	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
303.00	LAND AND LAND RIGHTS	2.00	
304.30	STRUCTURES AND IMPROVEMENTS - WTP	221,516.08	105,061
304.40	STRUCTURES AND IMPROVEMENTS - T&D	176,759.58	49,838
307.20	WELLS AND SPRINGS	74,872.50	30,482
311.00	WATER TREATMENT EQUIPMENT	19,246.00	956
320.30	PUMPING EQUIPMENT	84,210.50	24,189
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	478,330.00	201,655
331.40	TRANSMISSION AND DISTRIBUTION MAINS	4,314,166.22	995,825
333.40	SERVICES	937,010.74	263,002
334.40	METERS AND METER INSTALLATIONS	171,049.92	85,833
335.00	HYDRANTS	326,482.73	92,983
346.00	COMMUNICATION EQUIPMENT	39,970.00	10,133
	TOTAL COMPANY	6,843,616.27	1,859,957

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF ANALYSIS OF ORIGINAL COST
OF WATER SYSTEM AS OF MARCH 31, 2020**

ACCOUNT	DESCRIPTION	ORIGINAL COST
(1)	(2)	(3)
303.00	LAND AND LAND RIGHTS	2.00
304.30	STRUCTURES AND IMPROVEMENTS - WTP	221,516.08
304.40	STRUCTURES AND IMPROVEMENTS - T&D	176,759.58
307.20	WELLS AND SPRINGS	74,872.50
311.00	WATER TREATMENT EQUIPMENT	19,246.00
320.30	PUMPING EQUIPMENT	84,210.50
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	478,330.00
331.40	TRANSMISSION AND DISTRIBUTION MAINS	4,314,166.22
333.40	SERVICES	937,010.74
334.40	METERS AND METER INSTALLATIONS	171,049.92
335.00	HYDRANTS	326,482.73
346.00	COMMUNICATION EQUIPMENT	39,970.00
	TOTAL COMPANY	6,843,616.27

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED
DEPRECIATION RELATED TO ORIGINAL COST AS OF MARCH 31, 2020**

ACCOUNT (1)	DESCRIPTION (2)	SURVIVOR CURVE (3)	ORIGINAL COST (4)	ACCRUED DEPRECIATION (5)
303.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	2.00	
304.30	STRUCTURES AND IMPROVEMENTS - WTP	55-R3	221,516.08	105,061
304.40	STRUCTURES AND IMPROVEMENTS - T&D	55-R3	176,759.58	49,838
307.20	WELLS AND SPRINGS	50-R2.5	74,872.50	30,482
311.00	WATER TREATMENT EQUIPMENT	40-S0.5	19,246.00	956
320.30	PUMPING EQUIPMENT	35-L2.5	84,210.50	24,189
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	55-R4	478,330.00	201,655
331.40	TRANSMISSION AND DISTRIBUTION MAINS	80-R3	4,314,166.22	995,825
333.40	SERVICES	60-R2.5	937,010.74	263,002
334.40	METERS AND METER INSTALLATIONS	25-L3	171,049.92	85,833
335.00	HYDRANTS	60-R3	326,482.73	92,983
346.00	COMMUNICATION EQUIPMENT	15-SQ	39,970.00	10,133
	TOTAL COMPANY		6,843,616.27	1,859,957

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 303.00 LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
NONDEPRECIABLE							
2001	1.00						
2009	1.00						
	2.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 304.30 STRUCTURES AND IMPROVEMENTS - WTP

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R3							
NET SALVAGE PERCENT.. 0							
1988	176,847.36	55.00	1.82	3,218.62	26.14	0.5247	92,797
2004	44,668.72	55.00	1.82	812.97	39.90	0.2746	12,264
	221,516.08			4,031.59			105,061
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 304.40 STRUCTURES AND IMPROVEMENTS - T&D

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R3							
NET SALVAGE PERCENT.. 0							
1991	46,873.49	55.00	1.82	853.10	28.56	0.4807	22,533
2003	43,241.93	55.00	1.82	787.00	38.98	0.2913	12,595
2005	28,291.55	55.00	1.82	514.91	40.82	0.2578	7,294
2011	39,900.00	55.00	1.82	726.18	46.48	0.1549	6,181
2016	18,452.61	55.00	1.82	335.84	51.32	0.0669	1,235
	176,759.58			3,217.03			49,838
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 307.20 WELLS AND SPRINGS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL RATE (4)	ACCRUAL-- AMOUNT (5)	EXP. (6)	--ACCRUED FACTOR (7)	DEPREC.-- AMOUNT (8)
SURVIVOR CURVE.. IOWA 50-R2.5							
NET SALVAGE PERCENT.. 0							
1988	49,560.00	50.00	2.00	991.20	22.93	0.5414	26,832
2012	25,312.50	50.00	2.00	506.25	42.79	0.1442	3,650
	74,872.50			1,497.45			30,482

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 311.00 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 35-L2.5							
NET SALVAGE PERCENT.. 0							
2017	9,571.00	35.00	2.86	273.73	32.26	0.0783	749
2019	9,675.00	35.00	2.86	276.70	34.25	0.0214	207
	19,246.00			550.43			956

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.86

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 320.30 WATER TREATMENT EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 40-S0.5							
NET SALVAGE PERCENT.. 0							
1988	25,000.00	40.00	2.50	625.00	18.10	0.5475	13,688
2008	24,330.00	40.00	2.50	608.25	29.98	0.2505	6,095
2009	3,774.00	40.00	2.50	94.35	30.73	0.2318	875
2011	11,300.00	40.00	2.50	282.50	32.27	0.1933	2,184
2015	7,502.50	40.00	2.50	187.56	35.59	0.1103	827
2018	12,304.00	40.00	2.50	307.60	38.31	0.0423	520
	84,210.50			2,105.26			24,189

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 330.40 DISTRIBUTION RESERVOIRS AND STANDPIPES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R4							
NET SALVAGE PERCENT.. 0							
1988	300,000.00	55.00	1.82	5,460.00	24.38	0.5567	167,019
2009	175,830.00	55.00	1.82	3,200.11	44.29	0.1947	34,239
2011	2,500.00	55.00	1.82	45.50	46.27	0.1587	397
	478,330.00			8,705.61			201,655
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 331.40 TRANSMISSION AND DISTRIBUTION MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 80-R3							
NET SALVAGE PERCENT.. 0							
1988	254,540.12	80.00	1.25	3,181.75	50.08	0.3740	95,198
1990	597,506.28	80.00	1.25	7,468.83	51.85	0.3519	210,251
1991	59,067.26	80.00	1.25	738.34	52.74	0.3408	20,127
1993	388,789.83	80.00	1.25	4,859.87	54.53	0.3184	123,783
1994	244,872.65	80.00	1.25	3,060.91	55.44	0.3070	75,176
2003	601,550.27	80.00	1.25	7,519.38	63.79	0.2026	121,886
2004	577,827.95	80.00	1.25	7,222.85	64.73	0.1909	110,296
2005	928,661.33	80.00	1.25	11,608.27	65.68	0.1790	166,230
2007	342,210.31	80.00	1.25	4,277.63	67.59	0.1551	53,084
2008	34,638.97	80.00	1.25	432.99	68.55	0.1431	4,958
2015	213,653.86	80.00	1.25	2,670.67	75.34	0.0583	12,445
2017	70,847.39	80.00	1.25	885.59	77.30	0.0338	2,391
	4,314,166.22			53,927.08			995,825

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.25

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 333.40 SERVICES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R2.5							
NET SALVAGE PERCENT.. 0							
1988	68,347.64	60.00	1.67	1,141.41	32.27	0.4622	31,588
1990	103,540.21	60.00	1.67	1,729.12	33.83	0.4362	45,161
1991	11,980.68	60.00	1.67	200.08	34.62	0.4230	5,068
1993	114,148.32	60.00	1.67	1,906.28	36.23	0.3962	45,222
1994	27,410.68	60.00	1.67	457.76	37.05	0.3825	10,485
2003	56,312.82	60.00	1.67	940.42	44.68	0.2553	14,378
2004	2,543.92	60.00	1.67	42.48	45.56	0.2407	612
2005	390,565.71	60.00	1.67	6,522.45	46.44	0.2260	88,268
2007	74,746.20	60.00	1.67	1,248.26	48.23	0.1962	14,663
2008	6,843.07	60.00	1.67	114.28	49.13	0.1812	1,240
2011	4,901.00	60.00	1.67	81.85	51.85	0.1358	666
2013	3,361.98	60.00	1.67	56.15	53.69	0.1052	354
2015	68,521.28	60.00	1.67	1,144.31	55.54	0.0743	5,093
2016	2,575.99	60.00	1.67	43.02	56.47	0.0588	152
2017	1,211.24	60.00	1.67	20.23	57.41	0.0432	52
	937,010.74			15,648.10			263,002
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 334.40 METERS AND METER INSTALLATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 25-L3							
NET SALVAGE PERCENT.. 0							
2006	166,049.92	25.00	4.00	6,642.00	12.16	0.5136	85,283
2017	5,000.00	25.00	4.00	200.00	22.25	0.1100	550
	171,049.92			6,842.00			85,833

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 335.00 HYDRANTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1988	15,459.62	60.00	1.67	258.18	30.84	0.4860	7,513
1990	32,882.14	60.00	1.67	549.13	32.48	0.4587	15,082
1993	30,458.04	60.00	1.67	508.65	35.02	0.4163	12,681
1994	18,530.58	60.00	1.67	309.46	35.87	0.4022	7,452
2003	52,578.81	60.00	1.67	878.07	43.93	0.2678	14,082
2004	4,915.16	60.00	1.67	82.08	44.85	0.2525	1,241
2005	100,218.72	60.00	1.67	1,673.65	45.78	0.2370	23,752
2007	38,457.55	60.00	1.67	642.24	47.66	0.2057	7,910
2008	6,354.28	60.00	1.67	106.12	48.61	0.1898	1,206
2015	26,627.83	60.00	1.67	444.68	55.35	0.0775	2,064
	326,482.73			5,452.26			92,983
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 346.00 COMMUNICATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. 15-SQUARE							
NET SALVAGE PERCENT.. 0							
2011	420.00	15.00	6.67	28.01	6.25	0.5833	245
2016	39,550.00	15.00	6.67	2,637.98	11.25	0.2500	9,888
	39,970.00			2,665.99			10,133

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 6.67

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF REPLACEMENT COST AND ACCRUED DEPRECIATION
OF WATER SYSTEM AS OF MARCH 31, 2020**

ACCOUNT	DESCRIPTION	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
303.00	LAND AND LAND RIGHTS	2.00	
304.30	STRUCTURES AND IMPROVEMENTS - WTP	582,873.62	286,766
304.40	STRUCTURES AND IMPROVEMENTS - T&D	316,511.79	102,773
307.20	WELLS AND SPRINGS	172,098.62	81,206
311.00	WATER TREATMENT EQUIPMENT	21,753.17	1,136
320.30	PUMPING EQUIPMENT	154,659.54	56,412
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	1,346,282.46	674,745
331.40	TRANSMISSION AND DISTRIBUTION MAINS	9,254,938.97	2,335,418
333.40	SERVICES	1,843,412.55	570,902
334.40	METERS AND METER INSTALLATIONS	312,803.59	158,446
335.00	HYDRANTS	690,968.77	219,146
346.00	COMMUNICATION EQUIPMENT	39,137.19	9,919
	TOTAL COMPANY	14,735,442.27	4,496,869

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF ANALYSIS OF REPLACEMENT COST
OF WATER SYSTEM AS OF MARCH 31, 2020**

ACCOUNT	DESCRIPTION	REPLACEMENT COST
(1)	(2)	(3)
303.00	LAND AND LAND RIGHTS	2.00
304.30	STRUCTURES AND IMPROVEMENTS - WTP	582,873.62
304.40	STRUCTURES AND IMPROVEMENTS - T&D	316,511.79
307.20	WELLS AND SPRINGS	172,098.62
311.00	WATER TREATMENT EQUIPMENT	21,753.17
320.30	PUMPING EQUIPMENT	154,659.54
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	1,346,282.46
331.40	TRANSMISSION AND DISTRIBUTION MAINS	9,254,938.97
333.40	SERVICES	1,843,412.55
334.40	METERS AND METER INSTALLATIONS	312,803.59
335.00	HYDRANTS	690,968.77
346.00	COMMUNICATION EQUIPMENT	39,137.19
	TOTAL COMPANY	14,735,442.27

**VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS**

**SUMMARY OF SERVICE LIFE ESTIMATES AND CALCULATED ACCRUED
DEPRECIATION RELATED TO REPLACEMENT COST AS OF MARCH 31, 2020**

ACCOUNT (1)	DESCRIPTION (2)	SURVIVOR CURVE (3)	REPLACEMENT COST (4)	ACCRUED DEPRECIATION (5)
303.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	2.00	
304.30	STRUCTURES AND IMPROVEMENTS - WTP	55-R3	582,873.62	286,766
304.40	STRUCTURES AND IMPROVEMENTS - T&D	55-R3	316,511.79	102,773
307.20	WELLS AND SPRINGS	50-R2.5	172,098.62	81,206
311.00	WATER TREATMENT EQUIPMENT	40-S0.5	21,753.17	1,136
320.30	PUMPING EQUIPMENT	35-L2.5	154,659.54	56,412
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	55-R4	1,346,282.46	674,745
331.40	TRANSMISSION AND DISTRIBUTION MAINS	80-R3	9,254,938.97	2,335,418
333.40	SERVICES	60-R2.5	1,843,412.55	570,902
334.40	METERS AND METER INSTALLATIONS	25-L3	312,803.59	158,446
335.00	HYDRANTS	60-R3	690,968.77	219,146
346.00	COMMUNICATION EQUIPMENT	15-SQ	39,137.19	9,919
	TOTAL COMPANY		14,735,442.27	4,496,869

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETSSUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WATER SYSTEM AS OF MARCH 31, 2020

ACCOUNT (1)	DESCRIPTION (2)	VINTAGE YEAR (3)	BASE COST (4)	TRANSITION FACTOR (5)	FACTOR REFERENCE (6)	REPLACEMENT COST (7)
303.00	LAND AND LAND RIGHTS	2001	1.00	1.00	(1)	1.00
303.00	LAND AND LAND RIGHTS	2009	1.00	1.00	(1)	1.00
304.30	STRUCTURES AND IMPROVEMENTS - WTP	1988	176,847.36	2.86	(2)	506,586.66
304.30	STRUCTURES AND IMPROVEMENTS - WTP	2004	44,668.72	1.71	(2)	76,286.96
304.40	STRUCTURES AND IMPROVEMENTS - T&D	1991	46,873.49	2.62	(2)	123,000.14
304.40	STRUCTURES AND IMPROVEMENTS - T&D	2003	43,241.93	1.82	(2)	78,911.03
304.40	STRUCTURES AND IMPROVEMENTS - T&D	2005	28,291.55	1.60	(2)	45,405.41
304.40	STRUCTURES AND IMPROVEMENTS - T&D	2011	39,900.00	1.23	(2)	49,123.46
304.40	STRUCTURES AND IMPROVEMENTS - T&D	2016	18,452.61	1.09	(2)	20,071.75
307.20	WELLS AND SPRINGS	1988	49,560.00	2.86	(2)	141,966.69
307.20	WELLS AND SPRINGS	2012	25,312.50	1.19	(2)	30,131.93
311.00	PUMPING EQUIPMENT	2017	9,571.00	1.23	(4)	11,773.10
311.00	PUMPING EQUIPMENT	2019	9,675.00	1.03	(4)	9,980.07
320.30	WATER TREATMENT EQUIPMENT	1988	25,000.00	3.05	(3)	76,136.36
320.30	WATER TREATMENT EQUIPMENT	2008	24,330.00	1.49	(3)	36,162.85
320.30	WATER TREATMENT EQUIPMENT	2009	3,774.00	1.41	(3)	5,310.43
320.30	WATER TREATMENT EQUIPMENT	2011	11,300.00	1.33	(3)	15,049.39
320.30	WATER TREATMENT EQUIPMENT	2015	7,502.50	1.18	(3)	8,818.73
320.30	WATER TREATMENT EQUIPMENT	2018	12,304.00	1.07	(3)	13,181.78
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	1988	300,000.00	3.80	(5)	1,140,000.00
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	2009	175,830.00	1.16	(5)	203,592.63
330.40	DISTRIBUTION RESERVOIRS AND STANDPIPES	2011	2,500.00	1.08	(5)	2,689.83
331.40	TRANSMISSION AND DISTRIBUTION MAINS	1988	254,540.12	3.03	(6)	769,983.86
331.40	TRANSMISSION AND DISTRIBUTION MAINS	1990	597,506.28	2.81	(6)	1,681,354.88
331.40	TRANSMISSION AND DISTRIBUTION MAINS	1991	59,067.26	2.76	(6)	162,964.07
331.40	TRANSMISSION AND DISTRIBUTION MAINS	1993	388,789.83	2.64	(6)	1,025,872.23
331.40	TRANSMISSION AND DISTRIBUTION MAINS	1994	244,872.65	2.59	(6)	634,272.58
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2003	601,550.27	2.08	(6)	1,251,874.89
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2004	577,827.95	1.96	(6)	1,132,917.30
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2005	928,661.33	1.81	(6)	1,677,134.64
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2007	342,210.31	1.60	(6)	546,890.82
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2008	34,638.97	1.44	(6)	49,896.61
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2015	213,653.86	1.14	(6)	244,547.05
331.40	TRANSMISSION AND DISTRIBUTION MAINS	2017	70,847.39	1.09	(6)	77,230.04
333.40	SERVICES	1988	68,347.64	2.88	(7)	196,952.79
333.40	SERVICES	1990	103,540.21	2.69	(7)	279,005.30
333.40	SERVICES	1991	11,980.68	2.60	(7)	31,096.91
333.40	SERVICES	1993	114,148.32	2.42	(7)	275,988.75
333.40	SERVICES	1994	27,410.68	2.35	(7)	64,506.47
333.40	SERVICES	2003	56,312.82	1.92	(7)	108,034.92
333.40	SERVICES	2004	2,543.92	1.82	(7)	4,628.89
333.40	SERVICES	2005	390,565.71	1.72	(7)	672,535.10
333.40	SERVICES	2007	74,746.20	1.46	(7)	108,805.81
333.40	SERVICES	2008	6,843.07	1.37	(7)	9,399.24
333.40	SERVICES	2011	4,901.00	1.23	(7)	6,007.13
333.40	SERVICES	2013	3,361.98	1.17	(7)	3,942.79
333.40	SERVICES	2015	68,521.28	1.14	(7)	78,278.36
333.40	SERVICES	2016	2,575.99	1.13	(7)	2,914.50
333.40	SERVICES	2017	1,211.24	1.09	(7)	1,315.59
334.40	METERS AND METER INSTALLATIONS	2006	166,049.92	1.85	(8)	307,326.26
334.40	METERS AND METER INSTALLATIONS	2017	5,000.00	1.10	(8)	5,477.33
335.00	HYDRANTS	1988	15,459.62	3.44	(9)	53,190.76
335.00	HYDRANTS	1990	32,882.14	3.03	(9)	99,733.43
335.00	HYDRANTS	1993	30,458.04	2.86	(9)	87,102.08
335.00	HYDRANTS	1994	18,530.58	2.82	(9)	52,179.46
335.00	HYDRANTS	2003	52,578.81	1.93	(9)	101,560.12
335.00	HYDRANTS	2004	4,915.16	1.88	(9)	9,250.58
335.00	HYDRANTS	2005	100,218.72	1.83	(9)	183,595.36
335.00	HYDRANTS	2007	38,457.55	1.63	(9)	62,821.61
335.00	HYDRANTS	2008	6,354.28	1.56	(9)	9,909.44
335.00	HYDRANTS	2015	26,627.83	1.19	(9)	31,625.93

SUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WATER SYSTEM AS OF MARCH 31, 2020

ACCOUNT (1)	DESCRIPTION (2)	VINTAGE YEAR (3)	BASE COST (4)	TRANSITION FACTOR (5)	FACTOR REFERENCE (6)	REPLACEMENT COST (7)
346.00	COMMUNICATION EQUIPMENT	2011	420.00	0.96	(10)	403.06
346.00	COMMUNICATION EQUIPMENT	2016	39,550.00	0.98	(10)	38,734.13
TOTAL COMPANY			6,843,616.27			14,735,442.27

- NOTES : (1) Not trended
(2) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 8
(3) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 16
(4) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 9
(5) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 23
(6) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 34
(7) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 39
(8) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 40
(9) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 42
(10) U.S. Bureau of Labor Statistics, Producer Price Index: PPI industry data for Broadcast and wireless communications equipment mfg, not seasonally adjusted

VALLEY TOWNSHIP
 VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 303.00 LAND AND LAND RIGHTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
 RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
NONDEPRECIABLE							
2001	1.00						
2009	1.00						
	2.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 304.30 STRUCTURES AND IMPROVEMENTS - WTP

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R3							
NET SALVAGE PERCENT.. 0							
1988	506,586.66	55.00	1.82	9,219.88	26.14	0.5247	265,821
2004	76,286.96	55.00	1.82	1,388.42	39.90	0.2746	20,945
	582,873.62			10,608.30			286,766

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 304.40 STRUCTURES AND IMPROVEMENTS - T&D

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R3							
NET SALVAGE PERCENT.. 0							
1991	123,000.14	55.00	1.82	2,238.60	28.56	0.4807	59,130
2003	78,911.03	55.00	1.82	1,436.18	38.98	0.2913	22,984
2005	45,405.41	55.00	1.82	826.38	40.82	0.2578	11,706
2011	49,123.46	55.00	1.82	894.05	46.48	0.1549	7,610
2016	20,071.75	55.00	1.82	365.31	51.32	0.0669	1,343
	316,511.79			5,760.52			102,773
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 307.20 WELLS AND SPRINGS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL RATE (4)	ACCRUAL-- AMOUNT (5)	EXP. (6)	--ACCRUED FACTOR (7)	DEPREC.-- AMOUNT (8)
SURVIVOR CURVE.. IOWA 50-R2.5							
NET SALVAGE PERCENT.. 0							
1988	141,966.69	50.00	2.00	2,839.33	22.93	0.5414	76,861
2012	30,131.93	50.00	2.00	602.64	42.79	0.1442	4,345
	172,098.62			3,441.97			81,206
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 311.00 PUMPING EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 35-L2.5							
NET SALVAGE PERCENT.. 0							
2017	11,773.10	35.00	2.86	336.71	32.26	0.0783	922
2019	9,980.07	35.00	2.86	285.43	34.25	0.0214	214
	21,753.17			622.14			1,136

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.86

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 320.30 WATER TREATMENT EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 40-S0.5							
NET SALVAGE PERCENT.. 0							
1988	76,136.36	40.00	2.50	1,903.41	18.10	0.5475	41,685
2008	36,162.85	40.00	2.50	904.07	29.98	0.2505	9,059
2009	5,310.43	40.00	2.50	132.76	30.73	0.2318	1,231
2011	15,049.39	40.00	2.50	376.23	32.27	0.1933	2,908
2015	8,818.73	40.00	2.50	220.47	35.59	0.1103	972
2018	13,181.78	40.00	2.50	329.54	38.31	0.0423	557
	154,659.54			3,866.48			56,412

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 330.40 DISTRIBUTION RESERVOIRS AND STANDPIPES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 55-R4							
NET SALVAGE PERCENT.. 0							
1988	1,140,000.00	55.00	1.82	20,748.00	24.38	0.5567	634,672
2009	203,592.63	55.00	1.82	3,705.39	44.29	0.1947	39,646
2011	2,689.83	55.00	1.82	48.95	46.27	0.1587	427
	1,346,282.46			24,502.34			674,745
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 331.40 TRANSMISSION AND DISTRIBUTION MAINS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 80-R3							
NET SALVAGE PERCENT.. 0							
1988	769,983.86	80.00	1.25	9,624.80	50.08	0.3740	287,974
1990	1,681,354.88	80.00	1.25	21,016.94	51.85	0.3519	591,635
1991	162,964.07	80.00	1.25	2,037.05	52.74	0.3408	55,530
1993	1,025,872.23	80.00	1.25	12,823.40	54.53	0.3184	326,617
1994	634,272.58	80.00	1.25	7,928.41	55.44	0.3070	194,722
2003	1,251,874.89	80.00	1.25	15,648.44	63.79	0.2026	253,655
2004	1,132,917.30	80.00	1.25	14,161.47	64.73	0.1909	216,251
2005	1,677,134.64	80.00	1.25	20,964.18	65.68	0.1790	300,207
2007	546,890.82	80.00	1.25	6,836.14	67.59	0.1551	84,834
2008	49,896.61	80.00	1.25	623.71	68.55	0.1431	7,141
2015	244,547.05	80.00	1.25	3,056.84	75.34	0.0583	14,245
2017	77,230.04	80.00	1.25	965.38	77.30	0.0338	2,607
	9,254,938.97			115,686.76			2,335,418

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.25

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 333.40 SERVICES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R2.5							
NET SALVAGE PERCENT.. 0							
1988	196,952.79	60.00	1.67	3,289.11	32.27	0.4622	91,026
1990	279,005.30	60.00	1.67	4,659.39	33.83	0.4362	121,694
1991	31,096.91	60.00	1.67	519.32	34.62	0.4230	13,154
1993	275,988.75	60.00	1.67	4,609.01	36.23	0.3962	109,338
1994	64,506.47	60.00	1.67	1,077.26	37.05	0.3825	24,674
2003	108,034.92	60.00	1.67	1,804.18	44.68	0.2553	27,585
2004	4,628.89	60.00	1.67	77.30	45.56	0.2407	1,114
2005	672,535.10	60.00	1.67	11,231.34	46.44	0.2260	151,993
2007	108,805.81	60.00	1.67	1,817.06	48.23	0.1962	21,344
2008	9,399.24	60.00	1.67	156.97	49.13	0.1812	1,703
2011	6,007.13	60.00	1.67	100.32	51.85	0.1358	816
2013	3,942.79	60.00	1.67	65.84	53.69	0.1052	415
2015	78,278.36	60.00	1.67	1,307.25	55.54	0.0743	5,818
2016	2,914.50	60.00	1.67	48.67	56.47	0.0588	171
2017	1,315.59	60.00	1.67	21.97	57.41	0.0432	57
	1,843,412.55			30,784.99			570,902

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 334.40 METERS AND METER INSTALLATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 25-L3							
NET SALVAGE PERCENT.. 0							
2006	307,326.26	25.00	4.00	12,293.05	12.16	0.5136	157,843
2017	5,477.33	25.00	4.00	219.09	22.25	0.1100	603
	312,803.59			12,512.14			158,446
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00							

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 335.00 HYDRANTS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. IOWA 60-R3							
NET SALVAGE PERCENT.. 0							
1988	53,190.76	60.00	1.67	888.29	30.84	0.4860	25,851
1990	99,733.43	60.00	1.67	1,665.55	32.48	0.4587	45,745
1993	87,102.08	60.00	1.67	1,454.60	35.02	0.4163	36,263
1994	52,179.46	60.00	1.67	871.40	35.87	0.4022	20,985
2003	101,560.12	60.00	1.67	1,696.05	43.93	0.2678	27,201
2004	9,250.58	60.00	1.67	154.48	44.85	0.2525	2,336
2005	183,595.36	60.00	1.67	3,066.04	45.78	0.2370	43,512
2007	62,821.61	60.00	1.67	1,049.12	47.66	0.2057	12,921
2008	9,909.44	60.00	1.67	165.49	48.61	0.1898	1,881
2015	31,625.93	60.00	1.67	528.15	55.35	0.0775	2,451
	690,968.77			11,539.17			219,146

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

VALLEY TOWNSHIP
VALLEY TOWNSHIP WATER SYSTEM ASSETS

ACCOUNT 346.00 COMMUNICATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT MARCH 31, 2020

YEAR (1)	ORIGINAL COST (2)	AVG. LIFE (3)	--ANNUAL ACCRUAL-- RATE (4)	AMOUNT (5)	EXP. (6)	--ACCRUED DEPREC.-- FACTOR (7)	AMOUNT (8)
SURVIVOR CURVE.. 15-SQUARE							
NET SALVAGE PERCENT.. 0							
2011	403.06	15.00	6.67	26.88	6.25	0.5833	235
2016	38,734.13	15.00	6.67	2,583.57	11.25	0.2500	9,684
	39,137.19			2,610.45			9,919

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 6.67

Valley Township Water System Assets

Pro Forma Operations

Earnings Capitalization Model

	Actual			Budget
	2017	2018	2019	Year 0 2020
1. OPERATING REVENUES (1)				
2. Charges for services	683,151	725,146	679,252	664,680
3. Other operating revenue	6,294	163	19,298	20,140
4. Tap Fees	0	0	0	0
5. Total Operating Revenues	689,445	725,309	698,550	684,820
6. Rate Increase				
7. OPERATING EXPENSES (1)				
8. Operating & Maintenance Expenses	637,853	683,721	619,845	599,597
9. Operating Expenses Before Depreciation	637,853	683,721	619,845	599,597
10. Depreciation (2)	0	0	0	104,803
11. Total Operating Expenses	637,853	683,721	619,845	704,400
12. Operating Income	51,592	41,588	78,704	(19,580)
13. Revenues (3)	689,445	725,309	698,550	684,820
14. EBITDA (4)	51,592	41,588	78,704	85,223
15. EBIT (5)	51,592	41,588	78,704	(19,580)
16. EBIT	51,592	41,588	78,704	(19,580)
17. (-) Income Taxes	0	0	0	0
18. Debt Free Net Income	51,592	41,588	78,704	(19,580)
19. (+) Depreciation & Amortization	0	0	0	104,803
20. (-) Capital Expenditures (6)	0	0	0	30,000
21. (-) Changes in Working Capital (7)	7,584	7,978	7,684	7,533
22. Debt Free Net Cash Flow	\$44,008	\$33,610	\$71,020	\$47,690

Valley Township Water System Assets

Pro Forma Operations

Earnings Capitalization Model

2020

3.70% Capitalization Rate Model (No Growth)

23.	Debt Free Net Cash Flow (10)	\$47,690
24.	Capitalization Factor: (8)	<u>3.70%</u>
25.	Indicated Value (line 23 ÷ line 24)	<u><u>\$1,288,918</u></u>

3.70% Capitalization Rate Model (0.00% Growth)

26.	Debt Free Net Cash Flow (10)	\$47,690
27.	Capitalization Factor: (9)	<u>3.70%</u>
28.	Indicated Value (line 26 ÷ line 27)	<u><u>\$1,288,918</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Valley Township Water System Assets
Pro Forma Operations
Earnings Capitalization Model

Notes: (1) Assumptions:

Charges for services - Pre-2021 are actual or budget. Post-2020 based on customer growth (EDU) and average revenue per customer.

OPERATING EXPENSES - increase at 2.0% annually after 2020 unless noted elsewhere. Assumed economies of scale are shown on lines below.

- (2) Depreciation - Pre-2021 based on actual depreciation rate plus same rate on half of CAPX. Post-2020 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-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - based on water industry 1.10% of revenues.
- (8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 22.

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

Appendix A-5.2 (Gannett Fleming) EXHIBIT 13

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Actual		Budget			
			Year 0	Year 1	Estimated	
	2017	2018	2019	2020	2021	2022
1. OPERATING REVENUES (1)						
2. Charges for services	683,151	725,146	679,252	664,680	674,148	681,960
3. Other operating revenue	6,294	163	19,298	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	265,965
6. Total Operating Revenues	689,445	725,309	698,550	684,820	694,288	968,065
7. Rate Increase						39%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	637,853	683,721	619,845	599,597	611,589	623,821
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	0	(11,961)	(12,200)
12. LESS: EOS - Professional Services	0	0	0	0	(17,927)	(18,285)
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	637,853	683,721	619,845	599,597	581,701	593,335
16. Depreciation (2)	0	0	0	104,803	105,630	106,956
17. Total Operating Expenses	637,853	683,721	619,845	704,400	687,331	700,291
18. Operating Income	51,592	41,588	78,704	(19,580)	6,957	267,774
19. Revenues (3)	689,445	725,309	698,550	684,820	694,288	968,065
20. EBITDA (4)	51,592	41,588	78,704	85,223	112,587	374,730
21. EBIT (5)	51,592	41,588	78,704	(19,580)	6,957	267,774
22. EBIT	51,592	41,588	78,704	(19,580)	6,957	267,774
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	51,592	41,588	78,704	(19,580)	6,957	267,774
25. (+) Depreciation & Amortization	0	0	0	104,803	105,630	106,956
26. (-) Capital Expenditures (6)	0	0	0	30,000	99,500	105,328
27. (-) Changes in Working Capital (7)	7,584	7,978	7,684	7,533	7,637	10,649
28. Debt Free Net Cash Flow	\$44,008	\$33,610	\$71,020	\$47,690	\$5,449	\$258,753
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.70% (8)					0.9820	0.9470
31. Present Value Debt Free Net Cash Flow					\$5,351	\$245,039
32. Present Value Factor: 3.50% (9)					0.9829	0.9497
33. Present Value Debt Free Net Cash Flow					\$5,356	\$245,738

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 13

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With MUNI Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2023	Estimated Year 4 2024	Estimated Year 5 2025	Estimated Year 6 2026	Estimated Year 7 2027	Estimated Year 8 2028
1. OPERATING REVENUES (1)						
2. Charges for services	969,643	985,799	996,597	1,007,659	1,018,844	1,030,154
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	989,783	1,005,939	1,016,737	1,027,799	1,038,984	1,050,294
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	636,297	649,023	662,004	675,244	688,748	702,523
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(12,444)	(12,693)	(12,947)	(13,206)	(13,470)	(13,740)
12. LESS: EOS - Professional Services	(18,651)	(19,024)	(19,404)	(19,792)	(20,188)	(20,592)
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	605,202	617,306	629,652	642,245	655,090	668,192
16. Depreciation (2)	108,332	109,728	111,140	112,571	114,020	115,488
17. Total Operating Expenses	713,535	727,034	740,792	754,816	769,111	783,680
18. Operating Income	276,248	278,905	275,945	272,983	269,873	266,614
19. Revenues (3)	989,783	1,005,939	1,016,737	1,027,799	1,038,984	1,050,294
20. EBITDA (4)	384,581	388,633	387,085	385,554	383,894	382,102
21. EBIT (5)	276,248	278,905	275,945	272,983	269,873	266,614
22. EBIT	276,248	278,905	275,945	272,983	269,873	266,614
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	276,248	278,905	275,945	272,983	269,873	266,614
25. (+) Depreciation & Amortization	108,332	109,728	111,140	112,571	114,020	115,488
26. (-) Capital Expenditures (6)	106,684	108,057	109,448	110,858	112,285	113,731
27. (-) Changes in Working Capital (7)	10,888	11,065	11,184	11,306	11,429	11,553
28. Debt Free Net Cash Flow	\$267,009	\$269,511	\$266,453	\$263,390	\$260,180	\$256,818
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.70% (8)	0.9132	0.8806	0.8492	0.8189	0.7897	0.7615
31. Present Value Debt Free Net Cash Flow	\$243,833	\$237,331	\$226,272	\$215,690	\$205,464	\$195,567
32. Present Value Factor: 3.50% (9)	0.9176	0.8866	0.8566	0.8276	0.7996	0.7726
33. Present Value Debt Free Net Cash Flow	\$245,008	\$238,948	\$228,243	\$217,981	\$208,040	\$198,417

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2029	Estimated Year 10 2030	Estimated Year 11 2031	Estimated Year 12 2032	Estimated Year 13 2033	Estimated Year 14 2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,041,588	1,053,150	1,075,488	1,087,426	1,110,492	1,122,818
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	10,531	0	10,874	0	5,614
6. Total Operating Revenues	1,061,728	1,083,821	1,095,628	1,118,440	1,130,632	1,148,572
7. Rate Increase		1%		1%		0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	716,574	730,905	745,524	760,434	775,643	791,156
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,014)	(14,295)	(14,580)	(14,872)	(15,170)	(15,473)
12. LESS: EOS - Professional Services	(21,004)	(21,424)	(21,852)	(22,289)	(22,735)	(23,190)
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	681,556	695,187	709,091	723,273	737,738	752,493
16. Depreciation (2)	116,975	118,482	120,007	121,552	123,117	124,701
17. Total Operating Expenses	798,531	813,669	829,097	844,825	860,855	877,194
18. Operating Income	263,197	270,152	266,531	273,615	269,777	271,378
19. Revenues (3)	1,061,728	1,083,821	1,095,628	1,118,440	1,130,632	1,148,572
20. EBITDA (4)	380,172	388,634	386,537	395,167	392,894	396,079
21. EBIT (5)	263,197	270,152	266,531	273,615	269,777	271,378
22. EBIT	263,197	270,152	266,531	273,615	269,777	271,378
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	263,197	270,152	266,531	273,615	269,777	271,378
25. (+) Depreciation & Amortization	116,975	118,482	120,007	121,552	123,117	124,701
26. (-) Capital Expenditures (6)	115,195	116,678	118,180	119,702	121,243	122,804
27. (-) Changes in Working Capital (7)	11,679	11,922	12,052	12,303	12,437	12,634
28. Debt Free Net Cash Flow	\$253,298	\$260,034	\$256,305	\$263,163	\$259,214	\$260,641
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.70% (8)	0.7343	0.7081	0.6828	0.6585	0.6350	0.6123
31. Present Value Debt Free Net Cash Flow	\$185,997	\$184,130	\$175,005	\$173,293	\$164,601	\$159,590
32. Present Value Factor: 3.50% (9)	0.7465	0.7212	0.6968	0.6733	0.6505	0.6285
33. Present Value Debt Free Net Cash Flow	\$189,087	\$187,537	\$178,594	\$177,187	\$168,619	\$163,813

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 13

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 2035	Estimated Year 16 2036	Estimated Year 17 2037	Estimated Year 18 2038	Estimated Year 19 2039	Estimated Year 20 2040
1. OPERATING REVENUES (1)						
2. Charges for services	1,140,958	1,153,622	1,172,260	1,185,272	1,205,619	1,219,001
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	5,768	0	7,112	0	7,314
6. Total Operating Revenues	1,161,098	1,179,530	1,192,400	1,212,524	1,225,759	1,246,455
7. Rate Increase		0%		1%		1%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	806,979	823,118	839,581	856,372	873,500	890,970
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(15,782)	(16,098)	(16,420)	(16,748)	(17,083)	(17,425)
12. LESS: EOS - Professional Services	(23,654)	(24,127)	(24,609)	(25,101)	(25,603)	(26,116)
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	767,543	782,893	798,551	814,522	830,813	847,429
16. Depreciation (2)	126,308	127,934	129,581	131,249	132,939	134,650
17. Total Operating Expenses	893,850	910,827	928,132	945,772	963,752	982,079
18. Operating Income	267,248	268,703	264,268	266,752	262,007	264,376
19. Revenues (3)	1,161,098	1,179,530	1,192,400	1,212,524	1,225,759	1,246,455
20. EBITDA (4)	393,555	396,637	393,849	398,002	394,946	399,026
21. EBIT (5)	267,248	268,703	264,268	266,752	262,007	264,376
22. EBIT	267,248	268,703	264,268	266,752	262,007	264,376
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	267,248	268,703	264,268	266,752	262,007	264,376
25. (+) Depreciation & Amortization	126,308	127,934	129,581	131,249	132,939	134,650
26. (-) Capital Expenditures (6)	124,385	125,986	127,608	129,251	130,916	132,601
27. (-) Changes in Working Capital (7)	12,772	12,975	13,116	13,338	13,483	13,711
28. Debt Free Net Cash Flow	\$256,398	\$257,676	\$253,124	\$255,413	\$250,547	\$252,714
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.70% (8)	0.5905	0.5694	0.5491	0.5295	0.5106	0.4924
31. Present Value Debt Free Net Cash Flow	\$151,403	\$146,721	\$138,991	\$135,241	\$127,929	\$124,436
32. Present Value Factor: 3.50% (9)	0.6072	0.5867	0.5669	0.5477	0.5292	0.5113
33. Present Value Debt Free Net Cash Flow	\$155,685	\$151,178	\$143,496	\$139,890	\$132,589	\$129,213

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets

Pro Forma and Estimated Operations With MUNI Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044	
1. OPERATING REVENUES (1)					
2. Charges for services	1,239,927	1,253,691	1,279,015	1,293,212	
3. Other operating revenue	20,140	20,140	20,140	20,140	
4. Tap Fees	0	0	0	0	
5. Other (Rate Increase)	0	11,283	0	14,225	
6. Total Operating Revenues	1,260,067	1,285,114	1,299,155	1,327,577	
7.	Rate Increase	1%		1%	
8. OPERATING EXPENSES (1)					
9. Operating & Maintenance Expenses	908,789	926,965	945,504	964,414	
10. Remove Economies of Scale					
11. LESS: EOS - Wages & Benefits	(17,774)	(18,129)	(18,492)	(18,861)	
12. LESS: EOS - Professional Services	(26,638)	(27,171)	(27,714)	(28,268)	
13. LESS: EOS - Eliminated Expenses	0	0	0	0	
14. ADD: Additional O&M	0	0	0	0	
15. Operating Expenses Before Depreciation	864,378	881,665	899,298	917,284	
16. Depreciation (2)	136,384	138,140	139,919	141,720	
17. Total Operating Expenses	1,000,761	1,019,806	1,039,217	1,059,005	
18. Operating Income	259,306	265,308	259,938	268,572	
19. Revenues (3)	1,260,067	1,285,114	1,299,155	1,327,577	
20. EBITDA (4)	395,689	403,449	399,857	410,293	
21. EBIT (5)	259,306	265,308	259,938	268,572	
22. EBIT	259,306	265,308	259,938	268,572	
23. (-) Income Taxes	0	0	0	0	
24. Debt Free Net Income	259,306	265,308	259,938	268,572	
25. (+) Depreciation & Amortization	136,384	138,140	139,919	141,720	
26. (-) Capital Expenditures (6)	134,308	136,037	137,789	139,563	
27. (-) Changes in Working Capital (7)	13,861	14,136	14,291	14,603	
28. Debt Free Net Cash Flow	\$247,521	\$253,276	\$247,777	\$256,126	
29.	PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.70% (8)	0.4748	0.4579	0.4415	0.4258	
31. Present Value Debt Free Net Cash Flow	\$117,523	\$115,975	\$109,393	\$109,059	
32. Present Value Factor: 3.50% (9)	0.4940	0.4773	0.4611	0.4456	
33. Present Value Debt Free Net Cash Flow	\$122,275	\$120,888	\$114,250	\$114,130	

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Valley Township Water System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 3.70%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$256,126
Divided by Capitalization Factor (8)	<u>3.70%</u>
24th Year Terminal Value	6,922,330
24th Year Present Value Factor (11)	<u>0.4258</u>
Present Value of Terminal Value	2,947,528
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,893,834</u>
Indicated Value	<u>\$6,841,362</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.70%			
		Multiples (13)	Terminal Value
Projected EBIT	\$268,572	25.9	\$6,956,018
Projected EBITDA	410,293	18.4	<u>7,549,383</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			7,353,573
24th Year Present Value Factor (11)			<u>0.4258</u>
Present Value of Terminal Value			3,131,151
Present Value Debt Free Net Cash Flow for 24 Years			<u>3,893,834</u>
Indicated Value			<u>\$7,024,985</u>

DCF With Capitalization of Terminal Value Model @ 3.50%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$256,126
Divided by Capitalization Factor (9)	<u>3.50%</u>
24th Year Terminal Value	7,317,892
24th Year Present Value Factor (12)	<u>0.4258</u>
Present Value of Terminal Value	3,115,958
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,893,834</u>
Indicated Value	<u>\$7,009,792</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.50%			
		Multiples (13)	Terminal Value
Projected EBIT	\$268,572	25.9	\$6,956,018
Projected EBITDA	410,293	18.4	<u>7,549,383</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			7,353,573
24th Year Present Value Factor (12)			<u>0.4258</u>
Present Value of Terminal Value			3,131,151
Present Value Debt Free Net Cash Flow for 24 Years			<u>3,893,834</u>
Indicated Value			<u>\$7,024,985</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With MUNI Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2021 are actual or budget. Post-2020 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 at end of 2020 with shown rate increases.

OPERATING EXPENSES - increase at 2.0% annually after 2020 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2020 assumed 15% savings due to economies of scale. Increase at 2.0% afterwards.

Professional Services - Post-2020 assumed 50% savings due to economies of scale. Increase at 2.0% afterwards.

No Additional O&M.

(2)

Depreciation - Pre-2021 based on actual depreciation rate plus same rate on half of CAPX. Post-2020 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-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 1.10% of revenues.

(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 equal to discount rate, where capitalization rate = $K - g$.(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 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 17.

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

Appendix A-5.2 (Gannett Fleming) EXHIBIT 14

Income Approach

Page 1 of 7

Valley Township Water System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Actual		Budget	Estimated	Estimated	
	2017	2018	Year 0	Year 1	Year 2	
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
1. OPERATING REVENUES (1)						
2. Charges for services	683,151	725,146	679,252	664,680	674,148	681,960
3. Other operating revenue	6,294	163	19,298	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	470,553
6. Total Operating Revenues	689,445	725,309	698,550	684,820	694,288	1,172,653
7. Rate Increase						69%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	637,853	683,721	619,845	599,597	611,589	623,821
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	0	(11,961)	(12,200)
12. LESS: EOS - Professional Services	0	0	0	0	(17,927)	(18,285)
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	10,926	10,971
16. Operating Expenses Before Depreciation	637,853	683,721	619,845	599,597	592,627	604,306
17. Depreciation (2)	0	0	0	104,803	105,630	106,956
18. Total Operating Expenses	637,853	683,721	619,845	704,400	698,257	711,262
19. Operating Income	51,592	41,588	78,704	(19,580)	(3,969)	461,391
20. Revenues (3)	689,445	725,309	698,550	684,820	694,288	1,172,653
21. EBITDA (4)	51,592	41,588	78,704	85,223	101,661	568,347
22. EBIT (5)	51,592	41,588	78,704	(19,580)	(3,969)	461,391
23. EBIT	51,592	41,588	78,704	(19,580)	(3,969)	461,391
24. (-) Income Taxes	0	0	0	(5,657)	(1,147)	133,296
25. Debt Free Net Income	51,592	41,588	78,704	(13,923)	(2,822)	328,095
26. (+) Depreciation & Amortization	0	0	0	104,803	105,630	106,956
27. (-) Capital Expenditures (6)	0	0	0	30,000	99,500	105,328
28. (-) Changes in Working Capital (7)	7,584	7,978	7,684	7,533	7,637	12,899
29. Debt Free Net Cash Flow	\$44,008	\$33,610	\$71,020	\$53,347	(\$4,330)	\$316,823
30. PV Time Period (mid-year)				(0.5)	0.5	1.5
31. Present Value Factor: 5.95% (8)					0.9715	0.9170
32. Present Value Debt Free Net Cash Flow					(\$4,206)	\$290,527
33. Present Value Factor: 7.16% (9)					0.9660	0.9015
34. Present Value Debt Free Net Cash Flow					(\$4,182)	\$285,616
35. Present Value Factor: 5.75% (8)					0.9724	0.9196
36. Present Value Debt Free Net Cash Flow					(\$4,210)	\$291,351
37. Present Value Factor: 6.96% (9)					0.9669	0.9040
38. Present Value Debt Free Net Cash Flow					(\$4,186)	\$286,408

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 14

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With IOU Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2023	Estimated Year 4 2024	Estimated Year 5 2025	Estimated Year 6 2026	Estimated Year 7 2027	Estimated Year 8 2028
1. OPERATING REVENUES (1)						
2. Charges for services	1,178,919	1,198,562	1,211,690	1,225,140	1,238,739	1,252,489
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,199,059	1,218,702	1,231,830	1,245,280	1,258,879	1,272,629
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	636,297	649,023	662,004	675,244	688,748	702,523
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(12,444)	(12,693)	(12,947)	(13,206)	(13,470)	(13,740)
12. LESS: EOS - Professional Services	(18,651)	(19,024)	(19,404)	(19,792)	(20,188)	(20,592)
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	13,690	13,839	13,948	14,020	14,095	14,169
16. Operating Expenses Before Depreciation	618,892	631,145	643,600	656,265	669,185	682,361
17. Depreciation (2)	108,332	109,728	111,140	112,571	114,020	115,488
18. Total Operating Expenses	727,225	740,873	754,740	768,836	783,206	797,849
19. Operating Income	471,834	477,829	477,090	476,444	475,673	474,780
20. Revenues (3)	1,199,059	1,218,702	1,231,830	1,245,280	1,258,879	1,272,629
21. EBITDA (4)	580,167	587,557	588,230	589,015	589,694	590,268
22. EBIT (5)	471,834	477,829	477,090	476,444	475,673	474,780
23. EBIT	471,834	477,829	477,090	476,444	475,673	474,780
24. (-) Income Taxes	136,313	138,045	137,831	137,645	137,422	137,164
25. Debt Free Net Income	335,521	339,784	339,259	338,799	338,251	337,616
26. (+) Depreciation & Amortization	108,332	109,728	111,140	112,571	114,020	115,488
27. (-) Capital Expenditures (6)	106,684	108,057	109,448	110,858	112,285	113,731
28. (-) Changes in Working Capital (7)	13,190	13,406	13,550	13,698	13,848	13,999
29. Debt Free Net Cash Flow	\$323,980	\$328,049	\$327,401	\$326,814	\$326,139	\$325,374
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 5.95% (8)	0.8655	0.8169	0.7710	0.7277	0.6868	0.6483
32. Present Value Debt Free Net Cash Flow	\$280,405	\$267,983	\$252,426	\$237,822	\$223,992	\$210,940
33. Present Value Factor: 7.16% (9)	0.8412	0.7850	0.7326	0.6836	0.6380	0.5953
34. Present Value Debt Free Net Cash Flow	\$272,532	\$257,519	\$239,854	\$223,410	\$208,077	\$193,695
35. Present Value Factor: 5.75% (8)	0.8696	0.8223	0.7776	0.7353	0.6953	0.6575
36. Present Value Debt Free Net Cash Flow	\$281,733	\$269,755	\$254,587	\$240,306	\$226,765	\$213,933
37. Present Value Factor: 6.96% (9)	0.8452	0.7902	0.7388	0.6907	0.6457	0.6037
38. Present Value Debt Free Net Cash Flow	\$273,828	\$259,224	\$241,884	\$225,730	\$210,588	\$196,428

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 14

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2029	Estimated Year 10 2030	Estimated Year 11 2031	Estimated Year 12 2032	Estimated Year 13 2033	Estimated Year 14 2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,266,392	1,280,449	1,294,662	1,309,032	1,323,563	1,338,254
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,286,532	1,300,589	1,314,802	1,329,172	1,343,703	1,358,394
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	716,574	730,905	745,524	760,434	775,643	791,156
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,014)	(14,295)	(14,580)	(14,872)	(15,170)	(15,473)
12. LESS: EOS - Professional Services	(21,004)	(21,424)	(21,852)	(22,289)	(22,735)	(23,190)
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	14,245	14,321	14,399	14,477	14,556	14,637
16. Operating Expenses Before Depreciation	695,801	709,508	723,490	737,750	752,294	767,130
17. Depreciation (2)	116,975	118,482	120,007	121,552	123,117	124,701
18. Total Operating Expenses	812,776	827,990	843,496	859,302	875,411	891,831
19. Operating Income	473,756	472,599	471,306	469,870	468,292	466,563
20. Revenues (3)	1,286,532	1,300,589	1,314,802	1,329,172	1,343,703	1,358,394
21. EBITDA (4)	590,731	591,081	591,312	591,422	591,409	591,264
22. EBIT (5)	473,756	472,599	471,306	469,870	468,292	466,563
23. EBIT	473,756	472,599	471,306	469,870	468,292	466,563
24. (-) Income Taxes	136,868	136,534	136,160	135,746	135,289	134,790
25. Debt Free Net Income	336,888	336,065	335,146	334,124	333,003	331,773
26. (+) Depreciation & Amortization	116,975	118,482	120,007	121,552	123,117	124,701
27. (-) Capital Expenditures (6)	115,195	116,678	118,180	119,702	121,243	122,804
28. (-) Changes in Working Capital (7)	14,152	14,306	14,463	14,621	14,781	14,942
29. Debt Free Net Cash Flow	\$324,516	\$323,563	\$322,509	\$321,354	\$320,096	\$318,728
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 5.95% (8)	0.6118	0.5775	0.5451	0.5144	0.4856	0.4583
32. Present Value Debt Free Net Cash Flow	\$198,539	\$186,857	\$175,800	\$165,304	\$155,439	\$146,073
33. Present Value Factor: 7.16% (9)	0.5555	0.5184	0.4838	0.4515	0.4213	0.3932
34. Present Value Debt Free Net Cash Flow	\$180,269	\$167,735	\$156,030	\$145,091	\$134,857	\$125,324
35. Present Value Factor: 5.75% (8)	0.6218	0.5879	0.5560	0.5257	0.4972	0.4701
36. Present Value Debt Free Net Cash Flow	\$201,784	\$190,222	\$179,315	\$168,936	\$159,152	\$149,834
37. Present Value Factor: 6.96% (9)	0.5644	0.5277	0.4934	0.4613	0.4313	0.4032
38. Present Value Debt Free Net Cash Flow	\$183,157	\$170,744	\$159,126	\$148,240	\$138,058	\$128,511

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 2035	Estimated Year 16 2036	Estimated Year 17 2037	Estimated Year 18 2038	Estimated Year 19 2039	Estimated Year 20 2040
1. OPERATING REVENUES (1)						
2. Charges for services	1,353,109	1,368,128	1,383,314	1,398,669	1,414,194	1,429,892
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	4,290
6. Total Operating Revenues	1,373,249	1,388,268	1,403,454	1,418,809	1,434,334	1,454,322
7. Rate Increase						0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	806,979	823,118	839,581	856,372	873,500	890,970
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(15,782)	(16,098)	(16,420)	(16,748)	(17,083)	(17,425)
12. LESS: EOS - Professional Services	(23,654)	(24,127)	(24,609)	(25,101)	(25,603)	(26,116)
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	14,717	14,799	14,881	14,966	15,050	15,135
16. Operating Expenses Before Depreciation	782,260	797,692	813,432	829,488	845,863	862,564
17. Depreciation (2)	126,308	127,934	129,581	131,249	132,939	134,650
18. Total Operating Expenses	908,567	925,626	943,013	960,738	978,802	997,214
19. Operating Income	464,682	462,642	460,441	458,071	455,532	457,108
20. Revenues (3)	1,373,249	1,388,268	1,403,454	1,418,809	1,434,334	1,454,322
21. EBITDA (4)	590,989	590,576	590,022	589,321	588,471	591,758
22. EBIT (5)	464,682	462,642	460,441	458,071	455,532	457,108
23. EBIT	464,682	462,642	460,441	458,071	455,532	457,108
24. (-) Income Taxes	134,246	133,657	133,021	132,337	131,603	132,058
25. Debt Free Net Income	330,436	328,985	327,420	325,734	323,929	325,050
26. (+) Depreciation & Amortization	126,308	127,934	129,581	131,249	132,939	134,650
27. (-) Capital Expenditures (6)	124,385	125,986	127,608	129,251	130,916	132,601
28. (-) Changes in Working Capital (7)	15,106	15,271	15,438	15,607	15,778	15,998
29. Debt Free Net Cash Flow	\$317,253	\$315,662	\$313,955	\$312,126	\$310,175	\$311,101
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 5.95% (8)	0.4325	0.4083	0.3853	0.3637	0.3433	0.3240
32. Present Value Debt Free Net Cash Flow	\$137,212	\$128,885	\$120,967	\$113,520	\$106,483	\$100,797
33. Present Value Factor: 7.16% (9)	0.3669	0.3424	0.3195	0.2981	0.2782	0.2596
34. Present Value Debt Free Net Cash Flow	\$116,400	\$108,083	\$100,309	\$93,045	\$86,291	\$80,762
35. Present Value Factor: 5.75% (8)	0.4446	0.4204	0.3975	0.3759	0.3555	0.3361
36. Present Value Debt Free Net Cash Flow	\$141,051	\$132,704	\$124,797	\$117,328	\$110,267	\$104,561
37. Present Value Factor: 6.96% (9)	0.3770	0.3524	0.3295	0.3081	0.2880	0.2693
38. Present Value Debt Free Net Cash Flow	\$119,604	\$111,239	\$103,448	\$96,166	\$89,330	\$83,780

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 14

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With IOU Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21 <u>2041</u>	Estimated Year 22 <u>2042</u>	Estimated Year 23 <u>2043</u>	Estimated Year 24 <u>2044</u>
1. OPERATING REVENUES (1)				
2. Charges for services	1,450,101	1,466,197	1,488,402	1,504,923
3. Other operating revenue	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	5,865	0	7,525
6. Total Operating Revenues	<u>1,470,241</u>	<u>1,492,202</u>	<u>1,508,542</u>	<u>1,532,588</u>
7. Rate Increase		0%		1%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	908,789	926,965	945,504	964,414
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(17,774)	(18,129)	(18,492)	(18,861)
12. LESS: EOS - Professional Services	(26,638)	(27,171)	(27,714)	(28,268)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	15,246	15,334	15,456	15,546
16. Operating Expenses Before Depreciation	<u>879,624</u>	<u>896,999</u>	<u>914,754</u>	<u>932,830</u>
17. Depreciation (2)	136,384	138,140	139,919	141,720
18. Total Operating Expenses	<u>1,016,007</u>	<u>1,035,140</u>	<u>1,054,673</u>	<u>1,074,551</u>
19. Operating Income	<u>454,234</u>	<u>457,062</u>	<u>453,869</u>	<u>458,037</u>
20. Revenues (3)	1,470,241	1,492,202	1,508,542	1,532,588
21. EBITDA (4)	590,617	595,203	593,788	599,758
22. EBIT (5)	454,234	457,062	453,869	458,037
23. EBIT	454,234	457,062	453,869	458,037
24. (-) Income Taxes	131,228	132,045	131,123	132,327
25. Debt Free Net Income	323,006	325,017	322,746	325,710
26. (+) Depreciation & Amortization	136,384	138,140	139,919	141,720
27. (-) Capital Expenditures (6)	134,308	136,037	137,789	139,563
28. (-) Changes in Working Capital (7)	16,173	16,414	16,594	16,858
29. Debt Free Net Cash Flow	<u>\$308,909</u>	<u>\$310,707</u>	<u>\$308,282</u>	<u>\$311,009</u>
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 5.95% (8)	0.3058	0.2886	0.2724	0.2571
32. Present Value Debt Free Net Cash Flow	<u>\$94,464</u>	<u>\$89,670</u>	<u>\$83,976</u>	<u>\$79,960</u>
33. Present Value Factor: 7.16% (9)	0.2423	0.2261	0.2110	0.1969
34. Present Value Debt Free Net Cash Flow	<u>\$74,849</u>	<u>\$70,251</u>	<u>\$65,047</u>	<u>\$61,238</u>
35. Present Value Factor: 5.75% (8)	0.3179	0.3006	0.2842	0.2688
36. Present Value Debt Free Net Cash Flow	<u>\$98,202</u>	<u>\$93,398</u>	<u>\$87,614</u>	<u>\$83,599</u>
37. Present Value Factor: 6.96% (9)	0.2517	0.2354	0.2200	0.2057
38. Present Value Debt Free Net Cash Flow	<u>\$77,752</u>	<u>\$73,140</u>	<u>\$67,822</u>	<u>\$63,975</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Valley Township Water System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 5.95%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$311,009
Divided by Capitalization Factor (8)	<u>5.95%</u>
24th Year Terminal Value	5,227,043
24th Year Present Value Factor (11)	<u>0.2571</u>
Present Value of Terminal Value	1,343,873
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,843,836</u>
Indicated Value	<u>\$5,187,709</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 5.95%			
		Multiples (13)	Terminal Value
Projected EBIT	\$458,037	25.9	\$11,863,162
Projected EBITDA	599,758	18.4	<u>11,035,539</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			11,308,654
24th Year Present Value Factor (11)			<u>0.2571</u>
Present Value of Terminal Value			2,907,455
Present Value Debt Free Net Cash Flow for 24 Years			<u>3,843,836</u>
Indicated Value			<u>\$6,751,291</u>

DCF With Capitalization of Terminal Value Model @ 7.16%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$311,009
Divided by Capitalization Factor (9)	<u>7.16%</u>
24th Year Terminal Value	4,343,702
24th Year Present Value Factor (12)	<u>0.1969</u>
Present Value of Terminal Value	855,275
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,442,098</u>
Indicated Value	<u>\$4,297,373</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.16%			
		Multiples (13)	Terminal Value
Projected EBIT	\$458,037	25.9	\$11,863,162
Projected EBITDA	599,758	18.4	<u>11,035,539</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			11,308,654
24th Year Present Value Factor (12)			<u>0.1969</u>
Present Value of Terminal Value			2,226,674
Present Value Debt Free Net Cash Flow for 24 Years			<u>3,442,098</u>
Indicated Value			<u>\$5,668,772</u>

DCF With Capitalization of Terminal Value Model @ 5.75%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$311,009
Divided by Capitalization Factor (8)	<u>5.75%</u>
24th Year Terminal Value	5,408,854
24th Year Present Value Factor (11)	<u>0.2571</u>
Present Value of Terminal Value	1,390,616
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,843,836</u>
Indicated Value	<u>\$5,234,452</u>

DCF With Capitalization of Terminal Value Model @ 6.96%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$311,009
Divided by Capitalization Factor (9)	<u>6.96%</u>
24th Year Terminal Value	4,468,521
24th Year Present Value Factor (12)	<u>0.1969</u>
Present Value of Terminal Value	879,852
Present Value Debt Free Net Cash Flow for 24 Years	<u>3,442,098</u>
Indicated Value	<u>\$4,321,950</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2021 are actual or budget. Post-2020 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 at end of 2020 with shown rate increases.

OPERATING EXPENSES - increase at 2.0% annually after 2020 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2020 assumed 15% savings due to economies of scale. Increase at 2.0% afterwards.

Professional Services - Post-2020 assumed 50% savings due to economies of scale. Increase at 2.0% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2021 assumed due to IOU purchase at the end of 2020.

(2)

Depreciation - Pre-2021 based on actual depreciation rate plus same rate on half of CAPX. Post-2020 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-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 1.10% of revenues.

(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 3/31/2020 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 3/31/2020 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 17.

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

Appendix A-5.2 (Gannett Fleming) EXHIBIT 15

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Actual		Budget		Estimated	
	2017	2018	2019	Year 0 2020	Year 1 2021	Year 2 2022
1. OPERATING REVENUES (1)						
2. Charges for services	683,151	725,146	679,252	664,680	674,148	681,960
3. Other operating revenue	6,294	163	19,298	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	463,733
6. Total Operating Revenues	689,445	725,309	698,550	684,820	694,288	1,165,833
7. Rate Increase						68%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	637,853	683,721	619,845	599,597	611,589	623,821
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	0	(11,961)	(12,200)
12. LESS: EOS - Professional Services	0	0	0	0	(17,927)	(18,285)
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	637,853	683,721	619,845	599,597	581,701	593,335
16. Depreciation (2)	0	0	0	165,323	166,074	167,699
17. Total Operating Expenses	637,853	683,721	619,845	764,920	747,776	761,034
18. Operating Income	51,592	41,588	78,704	(80,100)	(53,488)	404,799
19. Revenues (3)	689,445	725,309	698,550	684,820	694,288	1,165,833
20. EBITDA (4)	51,592	41,588	78,704	85,223	112,587	572,498
21. EBIT (5)	51,592	41,588	78,704	(80,100)	(53,488)	404,799
22. EBIT	51,592	41,588	78,704	(80,100)	(53,488)	404,799
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	51,592	41,588	78,704	(80,100)	(53,488)	404,799
25. (+) Depreciation & Amortization	0	0	0	165,323	166,074	167,699
26. (-) Capital Expenditures (6)	0	0	0	30,000	99,500	165,157
27. (-) Changes in Working Capital (7)	7,584	7,978	7,684	7,533	7,637	12,824
28. Debt Free Net Cash Flow	\$44,008	\$33,610	\$71,020	\$47,690	\$5,449	\$394,516
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.70% (8)					0.9820	0.9470
31. Present Value Debt Free Net Cash Flow					\$5,351	\$373,607
32. Present Value Factor: 3.50% (9)					0.9829	0.9497
33. Present Value Debt Free Net Cash Flow					\$5,356	\$374,672

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 2023	Estimated Year 4 2024	Estimated Year 5 2025	Estimated Year 6 2026	Estimated Year 7 2027	Estimated Year 8 2028
1. OPERATING REVENUES (1)						
2. Charges for services	1,171,943	1,191,470	1,204,520	1,217,891	1,231,409	1,245,078
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,192,083	1,211,610	1,224,660	1,238,031	1,251,549	1,265,218
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	636,297	649,023	662,004	675,244	688,748	702,523
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(12,444)	(12,693)	(12,947)	(13,206)	(13,470)	(13,740)
12. LESS: EOS - Professional Services	(18,651)	(19,024)	(19,404)	(19,792)	(20,188)	(20,592)
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	605,202	617,306	629,652	642,245	655,090	668,192
16. Depreciation (2)	169,830	171,988	174,173	176,386	178,627	180,897
17. Total Operating Expenses	775,032	789,294	803,825	818,632	833,717	849,089
18. Operating Income	417,051	422,316	420,835	419,399	417,832	416,129
19. Revenues (3)	1,192,083	1,211,610	1,224,660	1,238,031	1,251,549	1,265,218
20. EBITDA (4)	586,881	594,304	595,008	595,786	596,459	597,026
21. EBIT (5)	417,051	422,316	420,835	419,399	417,832	416,129
22. EBIT	417,051	422,316	420,835	419,399	417,832	416,129
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	417,051	422,316	420,835	419,399	417,832	416,129
25. (+) Depreciation & Amortization	169,830	171,988	174,173	176,386	178,627	180,897
26. (-) Capital Expenditures (6)	167,256	169,381	171,534	173,713	175,921	178,156
27. (-) Changes in Working Capital (7)	13,113	13,328	13,471	13,618	13,767	13,917
28. Debt Free Net Cash Flow	\$406,512	\$411,595	\$410,002	\$408,454	\$406,771	\$404,953
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.70% (8)	0.9132	0.8806	0.8492	0.8189	0.7897	0.7615
31. Present Value Debt Free Net Cash Flow	\$371,227	\$362,451	\$348,174	\$334,483	\$321,227	\$308,371
32. Present Value Factor: 3.50% (9)	0.9176	0.8866	0.8566	0.8276	0.7996	0.7726
33. Present Value Debt Free Net Cash Flow	\$373,015	\$364,920	\$351,208	\$338,037	\$325,254	\$312,866

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2029	Estimated Year 10 2030	Estimated Year 11 2031	Estimated Year 12 2032	Estimated Year 13 2033	Estimated Year 14 2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,258,898	1,272,872	1,287,001	1,301,287	1,315,731	1,330,335
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,279,038	1,293,012	1,307,141	1,321,427	1,335,871	1,350,475
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	716,574	730,905	745,524	760,434	775,643	791,156
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,014)	(14,295)	(14,580)	(14,872)	(15,170)	(15,473)
12. LESS: EOS - Professional Services	(21,004)	(21,424)	(21,852)	(22,289)	(22,735)	(23,190)
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	681,556	695,187	709,091	723,273	737,738	752,493
16. Depreciation (2)	183,195	185,523	187,881	190,268	192,686	195,134
17. Total Operating Expenses	864,751	880,710	896,971	913,541	930,424	947,627
18. Operating Income	414,287	412,302	410,170	407,886	405,447	402,848
19. Revenues (3)	1,279,038	1,293,012	1,307,141	1,321,427	1,335,871	1,350,475
20. EBITDA (4)	597,482	597,825	598,050	598,154	598,133	597,982
21. EBIT (5)	414,287	412,302	410,170	407,886	405,447	402,848
22. EBIT	414,287	412,302	410,170	407,886	405,447	402,848
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	414,287	412,302	410,170	407,886	405,447	402,848
25. (+) Depreciation & Amortization	183,195	185,523	187,881	190,268	192,686	195,134
26. (-) Capital Expenditures (6)	180,420	182,712	185,034	187,385	189,766	192,177
27. (-) Changes in Working Capital (7)	14,069	14,223	14,379	14,536	14,695	14,855
28. Debt Free Net Cash Flow	\$402,993	\$400,890	\$398,638	\$396,234	\$393,672	\$390,950
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.70% (8)	0.7343	0.7081	0.6828	0.6585	0.6350	0.6123
31. Present Value Debt Free Net Cash Flow	\$295,918	\$283,870	\$272,190	\$260,920	\$249,982	\$239,379
32. Present Value Factor: 3.50% (9)	0.7465	0.7212	0.6968	0.6733	0.6505	0.6285
33. Present Value Debt Free Net Cash Flow	\$300,834	\$289,122	\$277,771	\$266,784	\$256,084	\$245,712

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 15

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With MUNI Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 <u>2035</u>	Estimated Year 16 <u>2036</u>	Estimated Year 17 <u>2037</u>	Estimated Year 18 <u>2038</u>	Estimated Year 19 <u>2039</u>	Estimated Year 20 <u>2040</u>
1. OPERATING REVENUES (1)						
2. Charges for services	1,345,102	1,360,033	1,375,129	1,390,393	1,405,826	1,421,431
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	7,107
6. Total Operating Revenues	1,365,242	1,380,173	1,395,269	1,410,533	1,425,966	1,448,678
7. Rate Increase						0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	806,979	823,118	839,581	856,372	873,500	890,970
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(15,782)	(16,098)	(16,420)	(16,748)	(17,083)	(17,425)
12. LESS: EOS - Professional Services	(23,654)	(24,127)	(24,609)	(25,101)	(25,603)	(26,116)
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	767,543	782,893	798,551	814,522	830,813	847,429
16. Depreciation (2)	197,613	200,125	202,668	205,243	207,850	210,492
17. Total Operating Expenses	965,156	983,018	1,001,219	1,019,765	1,038,663	1,057,921
18. Operating Income	400,086	397,155	394,050	390,768	387,303	390,757
19. Revenues (3)	1,365,242	1,380,173	1,395,269	1,410,533	1,425,966	1,448,678
20. EBITDA (4)	597,699	597,280	596,718	596,011	595,153	601,249
21. EBIT (5)	400,086	397,155	394,050	390,768	387,303	390,757
22. EBIT	400,086	397,155	394,050	390,768	387,303	390,757
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	400,086	397,155	394,050	390,768	387,303	390,757
25. (+) Depreciation & Amortization	197,613	200,125	202,668	205,243	207,850	210,492
26. (-) Capital Expenditures (6)	194,619	197,092	199,597	202,133	204,701	207,302
27. (-) Changes in Working Capital (7)	15,018	15,182	15,348	15,516	15,686	15,935
28. Debt Free Net Cash Flow	\$388,063	\$385,006	\$381,773	\$378,362	\$374,767	\$378,012
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.70% (8)	0.5905	0.5694	0.5491	0.5295	0.5106	0.4924
31. Present Value Debt Free Net Cash Flow	\$229,151	\$219,222	\$209,631	\$200,343	\$191,356	\$186,133
32. Present Value Factor: 3.50% (9)	0.6072	0.5867	0.5669	0.5477	0.5292	0.5113
33. Present Value Debt Free Net Cash Flow	\$235,632	\$225,883	\$216,427	\$207,229	\$198,326	\$193,277

See last page of this EXHIBIT for notes and assumptions.

Valley Township Water System Assets

Pro Forma and Estimated Operations With MUNI Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	1,444,395	1,460,428	1,485,498	1,501,987
3. Other operating revenue	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	8,763	0	10,514
6. Total Operating Revenues	1,464,535	1,489,331	1,505,638	1,532,641
7. Rate Increase		1%		1%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	908,789	926,965	945,504	964,414
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(17,774)	(18,129)	(18,492)	(18,861)
12. LESS: EOS - Professional Services	(26,638)	(27,171)	(27,714)	(28,268)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. Operating Expenses Before Depreciation	864,378	881,665	899,298	917,284
16. Depreciation (2)	213,166	215,875	218,619	221,396
17. Total Operating Expenses	1,077,544	1,097,540	1,117,917	1,138,680
18. Operating Income	386,991	391,791	387,721	393,961
19. Revenues (3)	1,464,535	1,489,331	1,505,638	1,532,641
20. EBITDA (4)	600,157	607,666	606,340	615,357
21. EBIT (5)	386,991	391,791	387,721	393,961
22. EBIT	386,991	391,791	387,721	393,961
23. (-) Income Taxes	0	0	0	0
24. Debt Free Net Income	386,991	391,791	387,721	393,961
25. (+) Depreciation & Amortization	213,166	215,875	218,619	221,396
26. (-) Capital Expenditures (6)	209,936	212,604	215,305	218,041
27. (-) Changes in Working Capital (7)	16,110	16,383	16,562	16,859
28. Debt Free Net Cash Flow	\$374,111	\$378,679	\$374,473	\$380,457
29. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.70% (8)	0.4748	0.4579	0.4415	0.4258
31. Present Value Debt Free Net Cash Flow	\$177,628	\$173,397	\$165,330	\$161,998
32. Present Value Factor: 3.50% (9)	0.4940	0.4773	0.4611	0.4456
33. Present Value Debt Free Net Cash Flow	\$184,811	\$180,744	\$172,669	\$169,531

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Valley Township Water System Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 3.70%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$380,457
Divided by Capitalization Factor (8)	<u>3.70%</u>
24th Year Terminal Value	10,282,608
24th Year Present Value Factor (11)	<u>0.4258</u>
Present Value of Terminal Value	4,378,335
Present Value Debt Free Net Cash Flow for 24 Years	<u>5,941,339</u>
Indicated Value	<u>\$10,319,674</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.70%			
		Multiples (13)	Terminal Value
Projected EBIT	\$393,961	25.9	\$10,203,583
Projected EBITDA	615,357	18.4	<u>11,322,561</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			10,953,298
24th Year Present Value Factor (11)			<u>0.4258</u>
Present Value of Terminal Value			4,663,914
Present Value Debt Free Net Cash Flow for 24 Years			<u>5,941,339</u>
Indicated Value			<u>\$10,605,253</u>

DCF With Capitalization of Terminal Value Model @ 3.50%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$380,457
Divided by Capitalization Factor (9)	<u>3.50%</u>
24th Year Terminal Value	10,870,186
24th Year Present Value Factor (12)	<u>0.4258</u>
Present Value of Terminal Value	4,628,525
Present Value Debt Free Net Cash Flow for 24 Years	<u>5,941,339</u>
Indicated Value	<u>\$10,569,864</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.50%			
		Multiples (13)	Terminal Value
Projected EBIT	\$393,961	25.9	\$10,203,583
Projected EBITDA	615,357	18.4	<u>11,322,561</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			10,953,298
24th Year Present Value Factor (12)			<u>0.4258</u>
Present Value of Terminal Value			4,663,914
Present Value Debt Free Net Cash Flow for 24 Years			<u>5,941,339</u>
Indicated Value			<u>\$10,605,253</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With MUNI Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2021 are actual or budget. Post-2020 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 at end of 2020 with shown rate increases.

OPERATING EXPENSES - increase at 2.0% annually after 2020 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2020 assumed 15% savings due to economies of scale. Increase at 2.0% afterwards.

Professional Services - Post-2020 assumed 50% savings due to economies of scale. Increase at 2.0% afterwards.

No Additional O&M.

(2)

Depreciation - Pre-2021 based on actual depreciation rate plus same rate on half of CAPX. Post-2020 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-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 1.10% of revenues.

(8) Discount rate is the the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 equal to discount rate, where capitalization rate = $K - g$.(9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 3/31/2020 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 17.

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

Appendix A-5.2 (Gannett Fleming) EXHIBIT 16

Income Approach

Page 1 of 7

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Actual		Budget	Estimated	Estimated	
	2017	2018	Year 0	Year 1	Year 2	
	<u>2017</u>	<u>2018</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	
1. OPERATING REVENUES (1)						
2. Charges for services	683,151	725,146	679,252	664,680	674,148	681,960
3. Other operating revenue	6,294	163	19,298	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	750,156
6. Total Operating Revenues	689,445	725,309	698,550	684,820	694,288	1,452,256
7. Rate Increase						110%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	637,853	683,721	619,845	599,597	611,589	623,821
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	0	0	0	0	(11,961)	(12,200)
12. LESS: EOS - Professional Services	0	0	0	0	(17,927)	(18,285)
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	14,586	14,544
16. Operating Expenses Before Depreciation	637,853	683,721	619,845	599,597	596,287	607,879
17. Depreciation (2)	0	0	0	165,323	166,074	167,699
18. Total Operating Expenses	637,853	683,721	619,845	764,920	762,362	775,578
19. Operating Income	51,592	41,588	78,704	(80,100)	(68,074)	676,678
20. Revenues (3)	689,445	725,309	698,550	684,820	694,288	1,452,256
21. EBITDA (4)	51,592	41,588	78,704	85,223	98,001	844,377
22. EBIT (5)	51,592	41,588	78,704	(80,100)	(68,074)	676,678
23. EBIT	51,592	41,588	78,704	(80,100)	(68,074)	676,678
24. (-) Income Taxes	0	0	0	(23,141)	(19,666)	195,492
25. Debt Free Net Income	51,592	41,588	78,704	(56,959)	(48,408)	481,186
26. (+) Depreciation & Amortization	0	0	0	165,323	166,074	167,699
27. (-) Capital Expenditures (6)	0	0	0	30,000	99,500	165,157
28. (-) Changes in Working Capital (7)	7,584	7,978	7,684	7,533	7,637	15,975
29. Debt Free Net Cash Flow	\$44,008	\$33,610	\$71,020	\$70,831	\$10,529	\$467,753
30. PV Time Period (mid-year)			(0.5)	0.5	1.5	
31. Present Value Factor: 5.95% (8)				0.9715	0.9170	
32. Present Value Debt Free Net Cash Flow				\$10,229	\$428,929	
33. Present Value Factor: 7.16% (9)				0.9660	0.9015	
34. Present Value Debt Free Net Cash Flow				\$10,171	\$421,679	
35. Present Value Factor: 5.75% (8)				0.9724	0.9196	
36. Present Value Debt Free Net Cash Flow				\$10,239	\$430,145	
37. Present Value Factor: 6.96% (9)				0.9669	0.9040	
38. Present Value Debt Free Net Cash Flow				\$10,181	\$422,849	

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 16

Income Approach

Valley Township Water System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 3 <u>2023</u>	Estimated Year 4 <u>2024</u>	Estimated Year 5 <u>2025</u>	Estimated Year 6 <u>2026</u>	Estimated Year 7 <u>2027</u>	Estimated Year 8 <u>2028</u>
1. OPERATING REVENUES (1)						
2. Charges for services	1,464,929	1,489,337	1,505,650	1,522,363	1,539,261	1,556,347
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,485,069	1,509,477	1,525,790	1,542,503	1,559,401	1,576,487
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	636,297	649,023	662,004	675,244	688,748	702,523
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(12,444)	(12,693)	(12,947)	(13,206)	(13,470)	(13,740)
12. LESS: EOS - Professional Services	(18,651)	(19,024)	(19,404)	(19,792)	(20,188)	(20,592)
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	18,853	19,037	19,172	19,261	19,352	19,445
16. Operating Expenses Before Depreciation	624,055	636,343	648,824	661,506	674,442	687,637
17. Depreciation (2)	169,830	171,988	174,173	176,386	178,627	180,897
18. Total Operating Expenses	793,885	808,331	822,997	837,893	853,069	868,534
19. Operating Income	691,184	701,146	702,793	704,610	706,332	707,953
20. Revenues (3)	1,485,069	1,509,477	1,525,790	1,542,503	1,559,401	1,576,487
21. EBITDA (4)	861,014	873,134	876,966	880,997	884,959	888,850
22. EBIT (5)	691,184	701,146	702,793	704,610	706,332	707,953
23. EBIT	691,184	701,146	702,793	704,610	706,332	707,953
24. (-) Income Taxes	199,683	202,561	203,037	203,562	204,059	204,528
25. Debt Free Net Income	491,501	498,585	499,756	501,048	502,273	503,425
26. (+) Depreciation & Amortization	169,830	171,988	174,173	176,386	178,627	180,897
27. (-) Capital Expenditures (6)	167,256	169,381	171,534	173,713	175,921	178,156
28. (-) Changes in Working Capital (7)	16,336	16,604	16,784	16,968	17,153	17,341
29. Debt Free Net Cash Flow	\$477,739	\$484,588	\$485,611	\$486,754	\$487,825	\$488,825
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 5.95% (8)	0.8655	0.8169	0.7710	0.7277	0.6868	0.6483
32. Present Value Debt Free Net Cash Flow	\$413,483	\$395,860	\$374,406	\$354,211	\$335,038	\$316,905
33. Present Value Factor: 7.16% (9)	0.8412	0.7850	0.7326	0.6836	0.6380	0.5953
34. Present Value Debt Free Net Cash Flow	\$401,874	\$380,401	\$355,759	\$332,745	\$311,233	\$290,997
35. Present Value Factor: 5.75% (8)	0.8696	0.8223	0.7776	0.7353	0.6953	0.6575
36. Present Value Debt Free Net Cash Flow	\$415,442	\$398,476	\$377,611	\$357,910	\$339,185	\$321,402
37. Present Value Factor: 6.96% (9)	0.8452	0.7902	0.7388	0.6907	0.6457	0.6037
38. Present Value Debt Free Net Cash Flow	\$403,785	\$382,921	\$358,769	\$336,201	\$314,989	\$295,103

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 16

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 9 2029	Estimated Year 10 2030	Estimated Year 11 2031	Estimated Year 12 2032	Estimated Year 13 2033	Estimated Year 14 2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,573,623	1,591,090	1,608,751	1,626,608	1,644,663	1,662,919
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,593,763	1,611,230	1,628,891	1,646,748	1,664,803	1,683,059
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	716,574	730,905	745,524	760,434	775,643	791,156
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(14,014)	(14,295)	(14,580)	(14,872)	(15,170)	(15,473)
12. LESS: EOS - Professional Services	(21,004)	(21,424)	(21,852)	(22,289)	(22,735)	(23,190)
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	19,538	19,633	19,728	19,824	19,921	20,020
16. Operating Expenses Before Depreciation	701,094	714,820	728,819	743,097	757,659	772,513
17. Depreciation (2)	183,195	185,523	187,881	190,268	192,686	195,134
18. Total Operating Expenses	884,289	900,343	916,699	933,365	950,345	967,647
19. Operating Income	709,474	710,887	712,192	713,383	714,458	715,412
20. Revenues (3)	1,593,763	1,611,230	1,628,891	1,646,748	1,664,803	1,683,059
21. EBITDA (4)	892,669	896,410	900,072	903,651	907,144	910,546
22. EBIT (5)	709,474	710,887	712,192	713,383	714,458	715,412
23. EBIT	709,474	710,887	712,192	713,383	714,458	715,412
24. (-) Income Taxes	204,967	205,375	205,752	206,096	206,407	206,683
25. Debt Free Net Income	504,507	505,512	506,440	507,287	508,051	508,729
26. (+) Depreciation & Amortization	183,195	185,523	187,881	190,268	192,686	195,134
27. (-) Capital Expenditures (6)	180,420	182,712	185,034	187,385	189,766	192,177
28. (-) Changes in Working Capital (7)	17,531	17,724	17,918	18,114	18,313	18,514
29. Debt Free Net Cash Flow	\$489,751	\$490,599	\$491,368	\$492,056	\$492,658	\$493,173
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 5.95% (8)	0.6118	0.5775	0.5451	0.5144	0.4856	0.4583
32. Present Value Debt Free Net Cash Flow	\$299,630	\$283,321	\$267,845	\$253,114	\$239,235	\$226,021
33. Present Value Factor: 7.16% (9)	0.5555	0.5184	0.4838	0.4515	0.4213	0.3932
34. Present Value Debt Free Net Cash Flow	\$272,057	\$254,327	\$237,724	\$222,163	\$207,557	\$193,915
35. Present Value Factor: 5.75% (8)	0.6218	0.5879	0.5560	0.5257	0.4972	0.4701
36. Present Value Debt Free Net Cash Flow	\$304,527	\$288,423	\$273,201	\$258,674	\$244,950	\$231,840
37. Present Value Factor: 6.96% (9)	0.5644	0.5277	0.4934	0.4613	0.4313	0.4032
38. Present Value Debt Free Net Cash Flow	\$276,415	\$258,889	\$242,441	\$226,986	\$212,483	\$198,847

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 16

Income Approach

Page 4 of 7

Valley Township Water System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 15 <u>2035</u>	Estimated Year 16 <u>2036</u>	Estimated Year 17 <u>2037</u>	Estimated Year 18 <u>2038</u>	Estimated Year 19 <u>2039</u>	Estimated Year 20 <u>2040</u>
1. OPERATING REVENUES (1)						
2. Charges for services	1,681,378	1,700,041	1,718,911	1,737,991	1,757,283	1,776,789
3. Other operating revenue	20,140	20,140	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	3,554
6. Total Operating Revenues	1,701,518	1,720,181	1,739,051	1,758,131	1,777,423	1,800,483
7. Rate Increase						0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	806,979	823,118	839,581	856,372	873,500	890,970
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	(15,782)	(16,098)	(16,420)	(16,748)	(17,083)	(17,425)
12. LESS: EOS - Professional Services	(23,654)	(24,127)	(24,609)	(25,101)	(25,603)	(26,116)
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	20,120	20,221	20,322	20,425	20,530	20,635
16. Operating Expenses Before Depreciation	787,663	803,114	818,873	834,947	851,343	868,064
17. Depreciation (2)	197,613	200,125	202,668	205,243	207,850	210,492
18. Total Operating Expenses	985,276	1,003,239	1,021,541	1,040,190	1,059,193	1,078,556
19. Operating Income	716,242	716,942	717,510	717,941	718,230	721,927
20. Revenues (3)	1,701,518	1,720,181	1,739,051	1,758,131	1,777,423	1,800,483
21. EBITDA (4)	913,855	917,067	920,178	923,184	926,080	932,419
22. EBIT (5)	716,242	716,942	717,510	717,941	718,230	721,927
23. EBIT	716,242	716,942	717,510	717,941	718,230	721,927
24. (-) Income Taxes	206,922	207,125	207,289	207,413	207,497	208,565
25. Debt Free Net Income	509,320	509,817	510,221	510,528	510,733	513,362
26. (+) Depreciation & Amortization	197,613	200,125	202,668	205,243	207,850	210,492
27. (-) Capital Expenditures (6)	194,619	197,092	199,597	202,133	204,701	207,302
28. (-) Changes in Working Capital (7)	18,717	18,922	19,130	19,339	19,552	19,805
29. Debt Free Net Cash Flow	\$493,598	\$493,928	\$494,162	\$494,298	\$494,331	\$496,747
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 5.95% (8)	0.4325	0.4083	0.3853	0.3637	0.3433	0.3240
32. Present Value Debt Free Net Cash Flow	\$213,481	\$201,671	\$190,401	\$179,776	\$169,704	\$160,946
33. Present Value Factor: 7.16% (9)	0.3669	0.3424	0.3195	0.2981	0.2782	0.2596
34. Present Value Debt Free Net Cash Flow	\$181,101	\$169,121	\$157,885	\$147,350	\$137,523	\$128,955
35. Present Value Factor: 5.75% (8)	0.4446	0.4204	0.3975	0.3759	0.3555	0.3361
36. Present Value Debt Free Net Cash Flow	\$219,454	\$207,647	\$196,429	\$185,807	\$175,735	\$166,957
37. Present Value Factor: 6.96% (9)	0.3770	0.3524	0.3295	0.3081	0.2880	0.2693
38. Present Value Debt Free Net Cash Flow	\$186,086	\$174,060	\$162,826	\$152,293	\$142,367	\$133,774

See last page of this EXHIBIT for notes and assumptions.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 16

Income Approach

Valley Township Water System Assets

Pro Forma and Estimated Operations With IOU Ownership

DCF With Capitalization of Terminal Value Model and

DCF With EBIT & EBITDA Terminal Value Model

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	1,800,104	1,820,085	1,845,809	1,866,298
3. Other operating revenue	20,140	20,140	20,140	20,140
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	5,460	0	7,465
6. Total Operating Revenues	1,820,244	1,845,685	1,865,949	1,893,903
7. Rate Increase		0%		0%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	908,789	926,965	945,504	964,414
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	(17,774)	(18,129)	(18,492)	(18,861)
12. LESS: EOS - Professional Services	(26,638)	(27,171)	(27,714)	(28,268)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	20,761	20,869	21,009	21,119
16. Operating Expenses Before Depreciation	885,139	902,534	920,307	938,403
17. Depreciation (2)	213,166	215,875	218,619	221,396
18. Total Operating Expenses	1,098,305	1,118,409	1,138,926	1,159,799
19. Operating Income	721,939	727,276	727,023	734,104
20. Revenues (3)	1,820,244	1,845,685	1,865,949	1,893,903
21. EBITDA (4)	935,105	943,151	945,642	955,500
22. EBIT (5)	721,939	727,276	727,023	734,104
23. EBIT	721,939	727,276	727,023	734,104
24. (-) Income Taxes	208,568	210,110	210,037	212,083
25. Debt Free Net Income	513,371	517,166	516,986	522,021
26. (+) Depreciation & Amortization	213,166	215,875	218,619	221,396
27. (-) Capital Expenditures (6)	209,936	212,604	215,305	218,041
28. (-) Changes in Working Capital (7)	20,023	20,303	20,525	20,833
29. Debt Free Net Cash Flow	\$496,579	\$500,134	\$499,774	\$504,543
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 5.95% (8)	0.3058	0.2886	0.2724	0.2571
32. Present Value Debt Free Net Cash Flow	\$151,854	\$144,339	\$136,138	\$129,718
33. Present Value Factor: 7.16% (9)	0.2423	0.2261	0.2110	0.1969
34. Present Value Debt Free Net Cash Flow	\$120,321	\$113,080	\$105,452	\$99,344
35. Present Value Factor: 5.75% (8)	0.3179	0.3006	0.2842	0.2688
36. Present Value Debt Free Net Cash Flow	\$157,862	\$150,340	\$142,036	\$135,621
37. Present Value Factor: 6.96% (9)	0.2517	0.2354	0.2200	0.2057
38. Present Value Debt Free Net Cash Flow	\$124,989	\$117,732	\$109,950	\$103,784

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Valley Township Water System Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

DCF With Capitalization of Terminal Value Model @ 5.95%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$504,543
Divided by Capitalization Factor (8)	<u>5.95%</u>
24th Year Terminal Value	8,479,708
24th Year Present Value Factor (11)	<u>0.2571</u>
Present Value of Terminal Value	2,180,133
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>5,876,254</u>
Indicated Value	<u>\$8,056,387</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 5.95%			
		Multiples (13)	Terminal Value
Projected EBIT	\$734,104	25.9	\$19,013,286
Projected EBITDA	955,500	18.4	<u>17,581,192</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			18,053,783
24th Year Present Value Factor (11)			<u>0.2571</u>
Present Value of Terminal Value			4,641,628
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>5,876,254</u>
Indicated Value			<u>\$10,517,882</u>

DCF With Capitalization of Terminal Value Model @ 7.16%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$504,543
Divided by Capitalization Factor (9)	<u>7.16%</u>
24th Year Terminal Value	7,046,685
24th Year Present Value Factor (12)	<u>0.1969</u>
Present Value of Terminal Value	1,387,492
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>5,252,736</u>
Indicated Value	<u>\$6,640,228</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.16%			
		Multiples (13)	Terminal Value
Projected EBIT	\$734,104	25.9	\$19,013,286
Projected EBITDA	955,500	18.4	<u>17,581,192</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			18,053,783
24th Year Present Value Factor (12)			<u>0.1969</u>
Present Value of Terminal Value			3,554,790
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>5,252,736</u>
Indicated Value			<u>\$8,807,526</u>

DCF With Capitalization of Terminal Value Model @ 5.75%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$504,543
Divided by Capitalization Factor (8)	<u>5.75%</u>
24th Year Terminal Value	8,774,654
24th Year Present Value Factor (11)	<u>0.2571</u>
Present Value of Terminal Value	2,255,964
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>5,876,254</u>
Indicated Value	<u>\$8,132,218</u>

DCF With Capitalization of Terminal Value Model @ 6.96%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$504,543
Divided by Capitalization Factor (9)	<u>6.96%</u>
24th Year Terminal Value	7,249,176
24th Year Present Value Factor (12)	<u>0.1969</u>
Present Value of Terminal Value	1,427,363
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>5,252,736</u>
Indicated Value	<u>\$6,680,099</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Valley Township Water System Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

Notes: (1) Assumptions:

Charges for services - Pre-2021 are actual or budget. Post-2020 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 at end of 2020 with shown rate increases.

OPERATING EXPENSES - increase at 2.0% annually after 2020 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Wages & Benefits - Post-2020 assumed 15% savings due to economies of scale. Increase at 2.0% afterwards.

Professional Services - Post-2020 assumed 50% savings due to economies of scale. Increase at 2.0% afterwards.

No Additional O&M.

PURTA & Reg Assessment - 2021 assumed due to IOU purchase at the end of 2020.

(2)

Depreciation - Pre-2021 based on actual depreciation rate plus same rate on half of CAPX. Post-2020 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-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.

(7) Changes in Working Capital - based on water industry 1.10% of revenues.

(8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate (K) at 3/31/2020 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 3/31/2020 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 17.

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

Market Multiples Method
Valley Township Water System Assets
2018 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 3/31/2020	Valley's Growth & Risk Adjustment	Valley's Risk Adjusted Valuation Multiples 3/31/2020	Valley's Market Multiples Valuation
Risk Adjusted Multiple				
1. <u>Valley Township Water System Assets</u>				
2. Investor Provided Capital	\$0	1.95	85.00%	1.66
3. Gross PP&E	\$6,843,616	1.33	96.00%	1.28
4. Net PP&E	\$4,983,659	1.73	96.00%	1.66
5. Revenues	\$698,550	8.02	85.00%	6.82
6. EBITDA	\$78,704	21.60	85.00%	18.36
7. EBIT	\$78,704	30.43	85.00%	25.87
8. Customers	1,669	\$9,216	95.00%	\$8,755
9. Population	7,493	\$2,677	95.00%	\$2,543
10.				<u>19,054,699</u>
11. Average				<u><u>\$8,420,669</u></u>

Conclusion of Market Multiple Method Valuation

		<u>Low</u>	<u>High</u>	<u>Conclusion</u>
12.	Capital Items	\$8,272,874	\$8,759,828	\$8,516,351
13.	(Items 3-4)			
14.	Income Statement Items	1,445,005	4,764,111	-
15.	(Items 5 -7)			
16.	Demographics Items	14,612,095	19,054,699	<u>16,833,397</u>
17.	(Item 8)			
			Conclusion	<u><u>\$12,674,874</u></u>

Market Multiples Method
Valley Township Water System Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2019		3/31/2020
	Gross PP&E (\$ Mill)	Net PP&E (\$ Mill)	Invest. Total Capital (\$ Mill)	12 Mos. Rev. (\$ Mill)	12 Mos. EBITDA (\$ Mill)	12 Mos. EBIT (\$ Mill)	Customers	Population	Enterprise Value (\$ Mill)
American States Water Co	\$1,980.305	\$1,437.042	\$1,101.458	\$473.869	\$164.085	\$128.372	285,128	1,000,000	\$3,511.490
American Water Works Company Inc	\$24,044.000	\$18,335.000	\$15,678.000	\$3,610.000	\$1,802.000	\$1,220.000	3,434,000	15,000,000	\$31,126.337
Artesian Resources Corp	\$672.391	\$535.013	\$314.114	\$83.595	\$35.909	\$25.106	92,640	300,000	\$498.652
California Water Service Group	\$3,540.033	\$2,409.873	\$1,778.008	\$714.557	\$201.212	\$109.924	520,600	2,000,000	\$3,397.807
Essential Utilities, Inc.	\$8,214.803	\$6,358.657	\$6,978.773	\$889.692	\$513.717	\$357.241	1,026,704	3,000,000	\$11,201.474
Middlesex Water Co	\$893.664	\$722.044	\$589.563	\$134.598	\$50.150	\$34.318	120,000	400,000	\$1,311.783
SJW Corp.	\$3,192.780	\$2,230.343	\$2,313.062	\$420.482	\$138.578	\$70.089	386,607	1,604,442	\$3,056.183
York Water Company (The)	\$399.269	\$313.993	\$237.467	\$51.578	\$30.023	\$22.335	71,411	201,000	\$668.987
Average	\$5,367.156	\$4,042.746	\$3,623.806	\$797.296	\$366.959	\$245.923	742,136	2,938,180	\$6,846.589
Max	\$24,044.000	\$18,335.000	\$15,678.000	\$3,610.000	\$1,802.000	\$1,220.000	3,434,000	15,000,000	\$31,126.337
Min	\$399.269	\$313.993	\$237.467	\$51.578	\$30.023	\$22.335	71,411	201,000	\$498.652
Median	\$2,586.543	\$1,833.693	\$1,439.733	\$447.176	\$151.332	\$90.007	335,868	1,302,221	\$3,226.995

	Enterprise Value as a Multiple of							Population Per Customer	
	Invest. Capital (x)	Gross PP&E (x)	Net PP&E (x)	Rev. (x)	EBITDA (x)	EBIT (x)	Customers (\$)		Population (\$)
American States Water Co	3.19	1.77	2.44	7.41	21.40	27.35	\$12,315	\$3,511	3.51
American Water Works Company Inc	1.99	1.29	1.70	8.62	17.27	25.51	\$9,064	\$2,075	4.37
Artesian Resources Corp	1.59	0.74	0.93	5.97	13.89	19.86	\$5,383	\$1,662	3.24
California Water Service Group	1.91	0.96	1.41	4.76	16.89	30.91	\$6,527	\$1,699	3.84
Essential Utilities, Inc.	1.61	1.36	1.76	12.59	21.80	31.36	\$10,910	\$3,734	2.92
Middlesex Water Co	2.23	1.47	1.82	9.75	26.16	38.22	\$10,932	\$3,279	3.33
SJW Corp.	1.32	0.96	1.37	7.27	22.05	43.60	\$7,905	\$1,905	4.15
York Water Company (The)	2.82	1.68	2.13	12.97	22.28	29.95	\$9,368	\$3,328	2.81
Average	2.08	1.28	1.70	8.67	20.22	30.85	\$9,050	\$2,649	3.52
Max	3.19	1.77	2.44	12.97	26.16	43.60	\$12,315	\$3,734	4.37
Min	1.32	0.74	0.93	4.76	13.89	19.86	\$5,383	\$1,662	2.81
Median	1.95	1.33	1.73	8.02	21.60	30.43	\$9,216	\$2,677	3.42

Market Multiples Method
Valley Township Water System Assets
Quantification of the Effective Risk/Growth Adjustments

	Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple	1.73	1.33	1.95
Ratio to Net PPE		76.88%	
Not Contributed Multiple (NPPE = ICAP mult.)	1.95	1.50	
Base Risk Factor	x 85%	85%	
Subject Company Adjusted Multiple	<u>1.66</u>	<u>1.28</u>	
Subject Company Adjusted Multiple	1.66	1.28	
Comparable Group Multiple	÷ 1.73	1.33	
Effective Risk/Growth Adjustment	<u>96%</u>	<u>96%</u>	

	Net PP&E	Gross PP&E
Plant Assets	100%	100%
Ratio of Known "Cost Free" Capital	26%	26%
Plant Assets Less Known "Cost Free" Capital	<u>74%</u>	<u>74%</u>
Comparable Group Multiple	1.73	1.33
Plant Assets Less Known "Cost Free" Capital	÷ 74%	74%
Multiple Without "Cost Free" Capital	2.34	1.80
Base Risk Factor	x 85%	85%
Subject Company Adjusted Multiple	<u>1.99</u>	<u>1.53</u>
Subject Company Adjusted Multiple	1.99	1.53
Comparable Group Multiple	÷ 1.73	1.33
Effective Risk/Growth Adjustment	<u>115%</u>	<u>115%</u>

	Rev.	EBITDA	EBIT
Comparable Group Multiple	8.02	21.60	30.43
Implied Capitalization Rate (1÷Multiple)	12.47%	4.63%	3.29%
(-) Growth Adjustment	- 0.00%	0.00%	0.00%
Adjusted Capitalization Rate (k-G)	12.47%	4.63%	3.29%
Adjusted Multiple (1÷Adj. Cap. Rate)	8.02	21.60	30.43
Base Risk Factor	x 85%	85%	85%
Subject Company Adjusted Multiple	<u>6.82</u>	<u>18.36</u>	<u>25.87</u>
Subject Company Adjusted Multiple	6.82	18.36	25.87
Comparable Group Multiple	÷ 8.02	21.60	30.43
Effective Risk/Growth Adjustment	<u>85%</u>	<u>85%</u>	<u>85%</u>

Selected Transactions Method
For Valley Township Water System Assets
Summary

	<u>Median</u>	<u>Mid-Point</u>	<u>Value</u>
<u>All Selected Transactions Companies</u>			
1.			\$9,135,476
2.			
3.			
1.			
2.			
3.			
4.			\$16,091,003
5.			
6.			
7.			
		Indicated Value	<u>\$12,613,240</u>
<u>Fully Integrated Selected Transactions Companies</u>			
8.			\$8,603,554
9.			
10.			
11.			\$22,677,198
12.			
13.			
14.			
		Indicated Value	<u>\$15,640,376</u>
<u>Mostly Collection/Distribution Selected Transactions Companies</u>			
15.			\$9,085,096
16.			
17.			
18.			\$9,597,268
19.			
20.			
21.			
		Indicated Value	<u>\$9,341,182</u>

Selected Transactions Method - Ex-Ante
For Valley Township Water System Assets
Based on 2016 - 2019 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	50,570
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
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

		Subject Company's Metrics							
Valley Township Water System Assets		\$0	\$6,843,616	\$4,983,659	\$698,550	\$78,704	\$78,704	1,669	7,493

		Subject Company's Selected Transactions Multiples Valuations									
Municipal Authority of the City of McKeesport	WW	INT	\$9,906,936	\$0	\$11,675,997	\$10,532,595	\$8,351,863	\$1,986,505	\$3,221,106	\$20,372,770	\$23,114,653
New Garden Township/Authority's WW System's Assets	WW	INT	\$9,746,782	\$0	\$7,768,359	\$8,182,520	\$9,113,023	\$2,558,743	\$4,646,900	\$27,413,976	\$18,290,732
Limerick Township Wastewater System's Assets	WW	INT	\$11,593,907	\$0	\$8,446,652	\$10,363,734	\$11,872,319	\$2,375,886	\$6,614,448	\$23,142,891	\$29,935,328
Steelton Borough (Water) Authority	W	INT	\$21,805,997	NA	NA	NA	NA	NA	NA	\$15,191,141	\$28,420,853
Exeter Township Wastewater System Assets	WW	INT	\$11,159,891	NA	NA	NA	\$8,668,904	\$1,621,034	\$1,621,034	\$17,834,372	\$26,054,113
Kane Borough Authority Wastewater System	WW	INT	\$9,598,424	\$0	\$5,929,850	\$9,835,388	\$8,554,202	\$2,018,081	\$7,607,349	\$14,515,919	\$28,326,605
Sadsbury Township Wastewater Utility	WW	C/D	\$16,735,925	NA	NA	NA	NA	NA	NA	\$15,469,188	\$18,002,662
East Bradford Township Wastewater System Assets	WW	C/D	\$4,891,286	\$0	NA	NA	\$3,089,912	\$7,901,373	\$7,901,373	\$6,686,699	\$3,768,356
Township of Mahoning Water System Assets	W	C/D	\$5,197,719	NA	NA	NA	\$4,387,430	\$2,452,982	\$4,074,068	\$6,663,053	\$8,411,061
Township of Mahoning Sewer System Assets	WW	C/D	\$2,608,105	NA	NA	NA	\$2,790,090	(\$2,160,824)	(\$1,534,933)	\$5,481,129	\$8,465,065
Cheltenham Township Wastewater System Assets	WW	C/D	\$4,738,146	NA	NA	NA	\$3,778,283	\$877,658	\$877,658	\$8,206,992	\$9,950,140
East Norriton Township Wastewater System Assets	WW	C/D	\$4,646,181	\$0	NA	NA	\$4,418,539	\$2,696,983	\$2,696,983	\$7,057,793	\$11,006,785

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 Valley Township Water System Assets
Based on 2016 - 2019 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions

Name	Service	System	Ex-Post Selected Transactions' Metrics								
			Announced Purchase Price was:	Investor Provided Capital	Ex-POST - OCN - Gross PP&E	Ex-Post - OCNLD - Net PP&E	Revenues	EBITDA	EBIT	Customers	Population
Municipal Authority of the City of McKeesport	WW	INT	\$156,000,000	\$83,903,219	\$108,231,570	\$80,085,602	\$13,047,844	\$6,180,616	\$3,811,679	12,780	50,570
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
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

Subject Company's Metrics								
Valley Township Water System Assets	\$0	\$6,843,616	\$4,983,659	\$698,550	\$78,704	\$78,704	1,669	7,493

Valley Township Water System Assets

Ex-Post Subject Company's Selected Transactions Multiples Valuations											
Municipal Authority of the City of McKeesport	WW	INT	\$9,577,340	\$0	\$9,864,073	\$9,707,748	\$8,351,863	\$1,986,505	\$3,221,106	\$20,372,770	\$23,114,653
New Garden Township/Authority's WW System's Assets	WW	INT	\$9,672,267	\$0	\$7,436,835	\$7,917,928	\$9,113,023	\$2,558,743	\$4,646,900	\$27,413,976	\$18,290,732
Limerick Township Wastewater System's Assets	WW	INT	\$11,268,300	\$0	\$8,096,287	\$8,109,240	\$11,872,319	\$2,375,886	\$6,614,448	\$23,142,891	\$29,935,328
Steelton Borough (Water) Authority	W	INT	\$14,795,358	NA	\$7,800,511	\$7,768,929	NA	NA	NA	\$15,191,141	\$28,420,853
Exeter Township Wastewater System Assets	WW	INT	\$10,944,869	NA	\$9,604,465	\$11,210,163	\$8,668,904	\$1,621,034	\$1,621,034	\$17,834,372	\$26,054,113
Kane Borough Authority Wastewater System	WW	INT	\$9,152,362	\$0	\$5,716,163	\$6,480,576	\$8,554,202	\$2,018,081	\$7,607,349	\$14,515,919	\$28,326,605
Sadsbury Township Wastewater Utility	WW	C/D	\$12,363,945	NA	\$8,462,348	\$7,521,582	NA	NA	NA	\$15,469,188	\$18,002,662
East Bradford Township Wastewater System Assets	WW	C/D	\$4,753,132	\$0	\$4,125,179	\$4,552,161	\$3,089,912	\$7,901,373	\$7,901,373	\$6,686,699	\$3,768,356
Township of Mahoning Water System Assets	W	C/D	\$5,548,169	NA	\$6,120,417	\$6,728,172	\$4,387,430	\$2,452,982	\$4,074,068	\$6,663,053	\$8,411,061
Township of Mahoning Sewer System Assets	WW	C/D	\$3,856,355	NA	\$6,612,636	\$7,341,319	\$2,790,090	(\$2,160,824)	(\$1,534,933)	\$5,481,129	\$8,465,065
Cheltenham Township Wastewater System Assets	WW	C/D	\$8,185,103	NA	\$17,352,304	\$16,252,688	\$3,778,283	\$877,658	\$877,658	\$8,206,992	\$9,950,140
East Norriton Township Wastewater System Assets	WW	C/D	\$5,960,664	\$0	\$8,495,752	\$11,312,480	\$4,418,539	\$2,696,983	\$2,696,983	\$7,057,793	\$11,006,785

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

For Valley Township Water System Assets

Based on Recent SJW Group's Bid For Connecticut Water Service Inc., With and Without Discount for Cost Free Capital

Connecticut Water Service Inc.			Valley Township Water System Assets		
Purchase Price was: \$1,106,267			Valley Township Water System Assets's	Selected Transactions Multiples	
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>			
Investor Provided Capital	\$573,223	1.93	\$0	NA	
Gross PP&E	\$939,050	1.18	\$6,843,616	\$8,062,262	
Net PP&E	\$697,723	1.59	\$4,983,659	\$7,901,786	\$7,982,024
Revenues	\$107,054	10.33	\$698,550	\$7,218,627	
EBITDA	\$48,920	22.61	\$78,704	\$1,779,796	
EBIT	\$32,236	34.32	\$78,704	\$2,700,944	\$11,999,082
Customers	135,645	\$8,156	1,669	\$13,611,705	
Population	450,000	\$2,458	7,493	\$18,420,576	\$16,016,140
Average				<u>\$8,527,956</u>	
	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>			
Investor Provided Capital	\$573,223	1.93	\$0	NA	
Gross PP&E (Less "Cost Free" Capital)	\$646,723	1.71	\$6,843,616	\$11,706,513	
Net PP&E (Less "Cost Free" Capital)	\$480,521	2.30	\$4,983,659	\$11,473,500	\$11,590,007
Revenues	\$107,054	10.33	\$698,550	\$7,218,627	
EBITDA	\$48,920	22.61	\$78,704	\$1,779,796	
EBIT	\$32,236	34.32	\$78,704	\$2,700,944	\$13,803,073
Customers	135,645	\$8,156	1,669	\$13,611,705	
Population	450,000	\$2,458	7,493	\$18,420,576	\$16,016,140
Average				<u>\$9,558,809</u>	

Valley Township Water System Assets
 Summary of Approach Results and
Fair Market Value Conclusion at Appraisal Date

<u>Valuation Approach</u>	<u>Indicated Value</u>	<u>Conclusion</u>	<u>Consideration</u>
Cost Approach	\$10,238,573		33.3%
Income Approach	9,528,715		33.3%
Market Approach	11,826,043		33.4%
		Conclusion \$10,532,000	

WORKPAPERS

Daily Bond Yields and Key

Updated by 11 am ET with data Data as of 31-Mar-20

Moody's Daily Long-term Corporate Bond Yield Averages

	Utilities	Industrial	Corporate
Aaa	NA	2.73	2.73
Aa	3.35	2.82	3.09
A	3.69	3.37	3.53
Baa	4.39	4.86	4.63
Avg	3.81	3.45	3.63

Moody's Daily Treasury Yield Averages

Short-Term (3-5 yrs)	0.34
Medium-Term (5-10 yrs)	0.53
Long-Term (10+ yrs)	1.2

Moody's Daily Public Utility Common Stock Yield Averages

Price	424.41
Yield	4.57
New Dividend	19.4

Moody's Commodity and Scrap Price Indexes

Spot Commodity Index	5,408.90
Industrial Metals Index	1,545.94

Index Name: S&P Municipal Bond Revenue Index

As of: May 22, 2020

Effective date	Yield To Maturity
3/25/2020	3.56%
3/26/2020	3.26%
3/27/2020	3.22%
3/30/2020	3.22%
3/31/2020	3.27%
4/1/2020	3.51%
4/2/2020	3.57%
4/3/2020	3.50%
4/6/2020	3.42%

FED H.15

DATE	DAAA	DBAA	DGS10	DGS20	DGS30
2020-03-25	3.34	5.01	0.88	1.23	1.45
2020-03-26	3.07	4.87	0.83	1.20	1.42
2020-03-27	2.95	4.70	0.72	1.09	1.29
2020-03-30	2.71	4.59	0.70	1.10	1.31
2020-03-31	2.73	4.63	0.70	1.15	1.35
2020-04-01	2.76	4.59	0.62	1.04	1.27
2020-04-02	2.64	4.55	0.63	1.04	1.26
2020-04-03	2.63	4.54	0.62	1.05	1.24
2020-04-06	2.63	4.58	0.67	1.08	1.27

<u>Years</u>	<u>A Rated</u>	<u>30-Year T-Bond</u>	<u>Credit Spread</u>
<u>Pre COVID-19 Yields</u>			
Jan 2019	4.35	3.04	1.31
Feb 2019	4.25	3.02	1.23
Mar 2019	4.16	2.98	1.18
Apr 2019	4.08	2.94	1.14
May 2019	3.98	2.82	1.16
Jun 2019	3.82	2.57	1.25
Jul 2019	3.69	2.57	1.12
Aug 2019	3.29	2.12	1.17
Sep 2019	3.37	2.16	1.21
Oct 2019	3.39	2.19	1.20
Nov 2019	3.43	2.28	1.15
Dec 2019	3.40	2.30	1.10
Jan 2020	3.29	2.22	<u>1.07</u>
Median Credit Spread (Pre COVID-19)			<u><u>1.17</u></u>
Spot 3/31/20	3.69	1.35	2.34
Median Credit Spread (Pre COVID-19)			<u>1.17</u>
COVID-19 Default Adjustment			<u><u>1.17</u></u>

FED H.15

		10-yr T- bond	20-yr T- bond	30-yr T- bond
Spot	3/31/20	0.70	1.15	1.35

FED H.15

	AAA Corp	BAA CORP		A Rated Utility		
3/31/20	2.73	4.63	Spread	0.00	0.00	
Moody's Spot ==>	2.73	4.63	Moody's Spot ==>	3.69	3.69	
	0.00	0.00	Implied	3.69	3.69	3.69

Moody's Daily Long-term Corporate Bond Yield Averages

	3/31/2020	Utilities	Industrial	Corporate
Spot	Aaa	NA	2.73	2.73
	Aa	3.35	2.82	3.09
	A	3.69	3.37	3.53
	Baa	4.39	4.86	4.63
	Avg	3.81	3.45	3.63

S&P Municipal Bond Revenue Index

3/31/20 3.27%

Utilities

Aa	
A	3.69
Baa	

	Decade Spread	Annual Spread
10-Year	0.70	
20-Year	1.15	0.450
30-Year	1.35	0.200

REVENUE BOND INDEX

10-20 Yr	3.27
20-30 Yr	0.23
	0.20

3.70

30-Yr Rev Bond Est.

3.70

2016 Lt Debt	4.1	3.69
Prf Stk	5.4	132%
Pref Stock Est.	132%	4.86

	3/31/20
A-Rated Rev Bonds	3.70
A-Rated PU Bonds	3.69
A-Rated PU Pref Stk	4.86
30-yr T-bond	1.35
COVID-19 Default Adjustment	1.17

	SBBI	SBBI
Equity Risk Premium	6.91	6.91
Beta (Value Line Med.)	<u>0.65</u>	<u>0.65</u>
Risk Adjusted Equity Premium	4.49	4.49
Yield (RF)	1.35	1.35
Size Premium	1.60	0.00
COVID-19 Default Adjustment	<u>1.17</u>	<u>1.17</u>
	<u>8.61</u>	<u>7.01</u>

High 8.61
Low 7.01

0.65

11.88 Total Return SBBI 1926-2018
4.97 Income Return SBBI 1926-2018

1.35 30-yr T-bond
1.17 COVID-19 Default Adjustment

	Recent Market Value (Mill \$)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	3,012.90	Mid-Cap	2	0.89	0.65
American Water Works Co Inc	21,637.34	Large-Cap	1	0	0.55
Artesian Resources Corp	345.40	Mico-Cap	4	3.4	-
California Water Service Gp	2,442.36	Low-Cap	3	1.6	0.7
Essential Utilities, Inc.	9,972.48	Mid-Cap	2	0.89	0.65
Middlesex Water Co	1,048.24	Low-Cap	3	1.6	0.75
SJW Corp	1,646.05	Low-Cap	3	1.6	0.6
York Water Co	565.71	Mico-Cap	4	3.4	0.7
Average	<u>5,083.810</u>	<u>Mid-Cap</u>	<u>2</u>	<u>0.89</u>	<u>0.66</u>
Median	<u>2,044.204</u>	<u>Low-Cap</u>	<u>3</u>	<u>1.60</u>	<u>0.65</u>

5/22/2020

Company Name	12/31/19			March-20		
	Ticker Symbol	LT Debt-Total Qly	Preferred S Minority In Common	Equity-Total-Qly	Invested Capital-Total Qly	Market Value-Mnthly
AMERICAN ST. AWR		499.928	0.000	0.000	601.530	1,101.458
AMERICAN W/ AWK		8,771.000	0.000	0.000	6,121.000	14,892.000
ARTESIAN RES ARTN.A		146.331	0.000	0.000	160.268	306.599
CALIFORNIA VCWT		823.002	0.000	0.000	779.906	1,602.908
ESSENTIAL UT WTRG		3,061.245	0.000	0.000	3,880.860	6,942.105
MIDDLESEX WMSEX		243.687	2.084	0.000	323.792	569.563
SJW GROUP SJW		1,305.869	0.000	0.000	889.984	2,195.853
THE YORK WA YORW		103.282	0.000	0.000	134.185	237.467

	Book Ratios				Market Ratios		
	LTD	Pref	Equity		LTD	Pref	Equity
AMERICA	0.454	0.000	0.546	1.000	0.142	0.000	0.858
AMERICA	0.589	0.000	0.411	1.000	0.288	0.000	0.712
ARTESIAN	0.477	0.000	0.523	1.000	0.298	0.000	0.702
CALIFORNI	0.513	0.000	0.487	1.000	0.252	0.000	0.748
ESSENTIAL	0.441	0.000	0.559	1.000	0.235	0.000	0.765
MIDDLES	0.428	0.004	0.568	1.000	0.188	0.002	0.810
SJW GROU	0.595	0.000	0.405	1.000	0.442	0.000	0.558
THE YOR	0.435	0.000	0.565	1.000	0.154	0.000	0.846
	0.492	0.000	0.508	Avg	0.250	0.000	0.750
	0.466	0.000	0.535	Med	0.244	0.000	0.757

Assumptions: 3/31/2020

Debt Cost	3.69
Pref. Stock Cost	4.86
Equity Cost	8.61
Equity Cost	7.01

Ratio	Cost	Wt	Shield	Overall	
24.40%	3.690	0.90	0.72	0.6482592	
0.00%	4.860	0.00	1	0	
75.60%	8.610	6.51	1	6.50916	
		7.41		7.16	<<<<ANSWER
24.40%	3.690	0.90	0.72	0.6482592	
0.00%	4.860	0.00	1	0	
75.60%	7.012	5.30	1	5.300694	
		6.20		5.95	<<<<ANSWER

Public Meeting held November 2019

ROE
9.95

DSIC Weighted Cost of Capital

<u>Assumptions:</u>	<u>3/31/2020</u>
Debt Cost	3.69
Pref. Stock Cost	4.86
DSIC Equity Cost	9.95

	Ratio	Cost	Wt	Shield	Overall
Debt	46.60%	3.690	1.72	0.72	1.238069
Pref	0.00%	4.860	0.00	1	0
Equity	53.40%	9.950	5.31	1	5.3133
			7.03		6.55 <<<<ANSWER

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

**2016 MUNICIPAL ANNUAL AUDIT
AND
FINANCIAL REPORT**

151655 VALLEY TWP, CHESTER COUNTY

BALANCE SHEET

DCED-CLGS-30 (09-09)

VALLEY TWP, CHESTER County
BALANCE SHEET
 December 31, 2016

		Governmental Funds				Proprietary Funds		Fld. 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	3,030,106	45,799			945,017					4,020,922
140-144	Tax Receivable										
121-129, 145-149	Accounts Receivable (excluding taxes)										
130.00	Due From Other Funds										
131-139, 150-159	Other Current Assets	289,933									289,933
160-169	Fixed Assets										
180-189	Other Debits									937,278	937,278
Total Assets and Other Debits		3,320,039	45,799			945,017				937,278	5,248,133
Liabilities and Other Credits											
210-229	Payroll Taxes and Other Payroll Withholdings										
200-209, 231-239	All Other Current Liabilities	289,933									289,933
230.00	Due To Other Funds										

VALLEY TWP, CHESTER County
BALANCE SHEET
 December 31, 2016

EXHIBIT 20
Appendix A-5.2 (Gannett Fleming)
Page 12 of 27B

		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									844,648	844,648
240-259	Current Portion of Long-Term Debt and Other Credits									92,630	92,630
Total Liabilities and Other Credits		289,933								937,278	1,227,211
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	3,030,106	45,799			945,017					4,020,922
291-299	Other Equity										
Total Fund and Account Group Equity		3,030,106	45,799			945,017					4,020,922
TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY											5,248,133

VALLEY TWP, CHESTER County
STATEMENT OF REVENUES AND EXPENDITURES
December 31, 2016

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

State							
355.00	All Other State Shared Revenues and Entitlements						
356.00	State Payments in Lieu of Taxes						
Total State		153,608	203,445				357,053

Local Government Units							
357.03	Highways and Streets						
357.00	All Other Local Governmental Units Capital and Operating Grants	222,941					222,941
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		222,941					222,941

Charges for Service							
361.00	General Government	9,503					9,503
362.00	Public Safety	11,784					11,784
363.20	Parking						
363.00	All Other Charges for Highway & Street Services						
364.10	Wastewater / Sewage (including connection / tapping fees, sewer usage charges, reserve capacity fee, etc.)				2,772,044		2,772,044
364.30	Solid Waste Collection and Disposal Charge (trash)	591,125					591,125
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						
368.00	Airports						

VALLEY TWP, CHESTER County
STATEMENT OF REVENUES AND EXPENDITURES
 December 31, 2016

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			682,994			682,994
379.00	All Other Charges for Service	11,804					11,804
Total Charges for Service		624,216		3,455,038			4,079,254

Unclassified Operating Revenues							
383.00	Special Assessments						
386.00	Escheats (sale of personal property)						
387.00	Contributions and Donations from Private Sectors	26,025					26,025
388.00	Fiduciary Fund Pension Contributions						
389.00	All Other Unclassified Operating Revenues	1,228					1,228
Total Unclassified Operating Revenues		27,253					27,253

Other Financing Sources							
391.00	Proceeds of General Fixed Asset Disposition						
392.00	Interfund Operating Transfers	112,695					112,695
393.00	Proceeds of General Long-Term Debt						
394.00	Proceeds of Short Term-Debt						

VALLEY TWP, CHESTER County
STATEMENT OF REVENUES AND EXPENDITURES
 December 31, 2016

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	26,603					26,603
415.00	Emergency Management and Communications	3,570					3,570
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		891,942					891,942

Health and Human Services							
420.00-425.00	Health and Human Services	5,700					5,700
Total Health and Human Services		5,700					5,700

Public Works - Sanitation							
426.00	Recycling Collection and Disposal	37,060					37,060
427.00	Solid Waste Collection and Disposal (garbage)	369,032					369,032
428.00	Weed Control	300					300
429.00	Wastewater / Sewage Treatment and Collection			2,532,858			2,532,858
Total Public Works - Sanitation		406,392		2,532,858			2,939,250

Public Works - Highways and Streets							
430.00	General Services - Administration	55,007					55,007
431.00	Cleaning of Streets and Gutters						
432.00	Winter Maintenance - Snow Removal	26,836	24,900				51,736
433.00	Traffic Control Devices	1,252	4,196				5,448
434.00	Street Lighting		18,386				18,386

VALLEY TWP, CHESTER County
STATEMENT OF REVENUES AND EXPENDITURES
December 31, 2016

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							
335.00	Sidewalks and Crosswalks						
336.00	Storm Sewers and Drains						
337.00	Repairs of Tools and Machinery	463					463
338.00	Maintenance and Repairs of Roads and Bridges	96,533	3,850				100,383
339.00	Highway Construction and Rebuilding Projects	203,511	197,329		77,727		478,567
Total Public Works - Highways and Streets		383,602	248,661		77,727		709,990

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				665,030		665,030
449.00	Water Transport and Terminals						
Total Other Public Works Enterprises					665,030		665,030

Culture and Recreation							
451.00	Culture-Recreation Administration	46,633					46,633
452.00	Participant Recreation						
453.00	Spectator Recreation						
454.00	Parks						

DCED-CLGS-30

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

2018 MUNICIPAL ANNUAL AUDIT AND FINANCIAL REPORT

Township of: VALLEY County: CHESTER

KIMMEL, LORAH & ASSOCIATES, LLP

CERTIFIED PUBLIC ACCOUNTANTS

Balance Sheet December 31, 2018					
Assets and Other Debits		GOVERNMENTAL FUNDS			
		General Fund	Special Revenue	Capital Projects	Debt Service
100-120	Cash and Investments	\$ 2,374,951	\$ 117,554	\$ 3,362,388	\$ -
140-144	Tax Receivable				
121-129					
145-149	Account Receivable (excluding taxes)				
130	Due From Other Funds	-		20,250	
131-139					
150-159	Other Current Assets	605,282			
160-169	Fixed Assets				
180-189	Other Debits				
Total Assets and Other Debits		\$ 2,980,233	\$ 117,554	\$ 3,382,638	\$ -

Liabilities and Other Credits					
210-229	Payroll Taxes and Other Payroll Withholdings	\$ -	\$ -	\$ -	\$ -
200-209					
231-239	All Other Current Liabilities	308,110			
230	Due To Other Funds				
260-269	Long Term Liabilities				
240-259	Current Portion of Long-Term Debt & Other Credits				
Total Liabilities and Other Credits		\$ 308,110	\$ -	\$ -	\$ -

Fund and Account Group Equity					
281-284	Contributed Capital	\$ 32,400	\$ -	\$ -	\$ -
290	Investment in General Fixed Assets				
270-289	Fund Balance / Retained Earnings on 12/31	2,639,723	117,554	3,382,638	
291-299	Other Equity				
Total Fund and Account Group Equity		\$ 2,672,123	\$ 117,554	\$ 3,382,638	\$ -

Assets and Other Debits		PROPRIETARY FUNDS		FIDUCIARY FUND	ACCOUNT GROUPS		TOTAL
		Enterprise	Internal Service	Trust & Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
100-120	Cash and Investments	\$ 676,540			\$ -	\$ -	\$ 6,531,433
140-144	Tax Receivable						-
121-129							
145-149	Account Receivable (excluding taxes)						-
130	Due From Other Funds						20,250
131-139							
150-159	Other Current Assets						605,282
160-169	Fixed Assets						-
180-189	Other Debits					7,693,330	7,693,330
Total Assets and Other Debits		\$ 676,540	\$ -	\$ -	\$ -	\$ 7,693,330	\$ 14,850,295

Liabilities and Other Credits		PROPRIETARY FUNDS		FIDUCIARY FUND	ACCOUNT GROUPS		TOTAL
		Enterprise	Internal Service	Trust & Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
210-229	Payroll Taxes and Other Payroll Withholdings	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
200-209							
231-239	All Other Current Liabilities						308,110
230	Due To Other Funds	-					-
260-269	Long Term Liabilities					7,433,977	7,433,977
240-259	Current Portion of Long-Term Debt & Other Credits					259,353	259,353
Total Liabilities and Other Credits		\$ -	\$ -	\$ -	\$ -	\$ 7,693,330	\$ 8,001,440

Fund and Account Group Equity		PROPRIETARY FUNDS		FIDUCIARY FUND	ACCOUNT GROUPS		TOTAL
		Enterprise	Internal Service	Trust & Agency	General Fixed Assets	General Long Term Debt	Memorandum Only
281-284	Contributed Capital		\$ -	\$ -	\$ -	\$ -	\$ 32,400
290	Investment in General Fixed Assets						-
270-289	Fund Balance / Retained Earnings on 12/31	676,540					6,816,455
291-299	Other Equity						-
Total Fund and Account Group Equity		\$ 676,540	\$ -	\$ -	\$ -	\$ -	\$ 6,848,855

TOTAL LIABILITIES AND FUND AND ACCOUNT GROUP EQUITY	\$ 14,850,295
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Revenues	Proprietary Funds	Fiduciary Fund	Total
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Charges for Service		Enterprise	Internal Service	Trust and Agency	Memorandum Only
361.00	General Government	\$ -	\$ -	\$ -	\$ 12,672
362.00	Public Safety				95,286
363.20	Parking				-
363.00	All Other Charges for Highway & Streets Services				-
364.10	Wastewater/Sewage Charges	2,795,379			2,795,379
364.30	Solid Waste Collection & Disposal Charge (trash)				770,833
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				-
368.00	Airports				-
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	708,629			708,629
379.00	All Other Charges for Services				5,651
Total Charges for Services		\$ 3,504,008	\$ -	\$ -	\$ 4,388,450

Unclassified Operating Revenues					
383.00	Assessments	\$ -	\$ -	\$ -	\$ -
386.00	Escheats (sale of personal property)				\$ -
387.00	Contributions & Donations from Private Sectors				15,400
388.00	Fiduciary Fund Pension Contributions				\$ -
389.00	All Other Unclassified Operating Revenues				18,082
Total Unclassified Operating Revenues		\$ -	\$ -	\$ -	\$ 33,482

Other Financing Sources					
391.00	Proceeds of General Fixed Asset Disposition	\$ 82,580	\$ -	\$ -	\$ 100,000
392.00	Interfund Operating Transfers				3,579,605
393.00	Proceeds of General Long-Term Debt				-
394.00	Proceeds of Short-Term Debt				-
395.00	Refunds of Prior Year Expenditures				43,116
Total Other Financing Sources		\$ 82,580	\$ -	\$ -	\$ 3,722,721

TOTAL REVENUES	\$ 3,596,986	\$ -	\$ -	\$ 11,859,026
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EXPENDITURES		Proprietary Funds		Fiduciary Fund	Total
General Government		Enterprise	Internal Service	Trust and Agency	Memorandum Only
400.00	Legislative (Governing) Body	\$ -		\$ -	\$ 12,917
401.00	Executive (Manager or Mayor)				74,891
402.00	Auditing Services/Financial Administration				51,377
403.00	Tax Collection				900
404.00	Solicitor/Legal Services				247,394
405.00	Secretary/Clerk				191,534
406.00	Other General Government Administration				73,563
407.00	IT-Networking Services-Data Processing				-
408.00	Engineering Services				393,589
409.00	General Government Buildings and Plant				3,828,936
Total General Government		\$ -	\$ -	\$ -	\$ 4,875,101

Public Safety					
410.00	Police	\$ -	\$ -	\$ -	\$ 602,257
411.00	Fire				122,173
412.00	Ambulance/Rescue				107,624
413.00	UCC and Code Enforcement				152,297
414.00	Planning and Zoning				34,376
415.00	Emergency Management & 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		\$ -	\$ -	\$ -	\$ 1,059,806

Health and Human Services					
420.00					
425.00	Health and Human Services	\$ -	\$ -	\$ -	\$ 8,879

Public Works - Sanitation					
426.00	Recycling Collection and Disposal	\$ -	\$ -	\$ -	\$ -
427.00	Solid Waste Collection and Disposal (trash)				439,379
428.00	Weed Control				-
429.00	Wastewater/Sewage Collection and Treatment	3,445,038			3,445,038
Total Public Works - Sanitation		\$ 3,445,038	\$ -	\$ -	\$ 3,957,403

EXPENDITURES		Proprietary Funds		Fiduciary Fund	Total
		Enterprise	Internal Service	Trust and Agency	Memorandum Only
Public Works - Highways and Streets					
430.00	General Services- Administration	\$ -	\$ -	\$ -	\$ 149,519
431.00	Cleaning of Streets and Gutters				5,694
432.00	Winter Maintenance- Snow Removal				71,085
433.00	Traffic Control Devices				3,956
434.00	Street Lighting				18,205
435.00	Sidewalks and Crosswalks				-
436.00	Storm Sewers and Drains				-
437.00	Repairs of Tools and Machinery				4,670
438.00	Maintenance & Repairs of Roads & Bridges				17,245
439.00	Highway Construction and Rebuilding Projects				541,491
Total Public Works - Highways and Streets		\$ -	\$ -	\$ -	\$ 811,865

Public Works - Other Services					
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	683,721			683,721
449.00	Water Transport and Terminals				-
Total Public Works-Other Services		\$ 683,721	\$ -	\$ -	\$ 683,721

Culture and Recreation					
451.00	Culture- Recreation Administration	\$ -	\$ -	\$ -	\$ 44,315
452.00	Participant Recreation				-
453.00	Spectator Recreation				-
454.00	Parks				-
455.00	Shade Trees				-
456.00	Libraries				6,794
457.00	Civil and Military Celebrations				-
458.00	Senior Citizens' Centers				-
450.00	All Other Culture and Recreation				-
Total Culture and Recreation		\$ -	\$ -	\$ -	\$ 51,109

EXPENDITURES		Proprietary Funds		Fiduciary Fund	Total
Community Development					
461.00	Conservation of Natural Resources	\$ -	\$ -	\$ -	\$ -
462.00	Community Development and Housing				
463.00	Economic Development				
464.00	Economic Opportunity				
465.00-469.00	All Other Community Development				
Total Community Development		\$ -	\$ -	\$ -	\$ -
Debt Service					
		<i>Enterprise</i>	<i>Internal Service</i>	<i>Trust and Agency</i>	<i>Memorandum Only</i>
471.00	Debt Principal (short-term and long-term)		\$ -	\$ -	\$ 118,726
472.00	Debt Interest (short-term and long-term)				276,291
475.00	Fiscal Agent Fees				500
Total Debt Service		\$ -	\$ -	\$ -	\$ 395,517
Employer Paid Benefits & Withholding Items					
481.00	Employer Paid Withholding Taxes and Unemployment Compensation	\$ -	\$ -	\$ -	\$ 72,823
482.00	Judgments and Losses				-
483.00	Pension/Retirement Fund Contributions				115,379
484.00	Worker Compensation Insurance				59,778
487.00	Group Insurance and Other Benefits				446,628
Total Employer Paid Benefits & Withholding Items		\$ -	\$ -	\$ -	\$ 694,608
Insurance					
486.00	Insurance, Casualty, and Surety	\$ -	\$ -	\$ -	\$ 75,384
Unclassified Operating Expenditures					
488.00	Fiduciary Fund Benefits and Refunds Paid				\$ -
489.00	All Other Unclassified Expenditures				14,272
Total Unclassified Operating Expenditures		\$ -	\$ -	\$ -	\$ 14,272
Other Financing Uses					
491.00	Refund of Prior Year Revenues	\$ -	\$ -	\$ -	\$ -
492.00	Interfund Operating Transfers				3,579,605
493.00	All Other Financing Uses				-
Total Other Financing Uses		\$ -	\$ -	\$ -	\$ 3,579,605
TOTAL EXPENDITURES		\$ 4,128,759	\$ -	\$ -	\$ 16,207,270
EXCESS/DEFICIT OF REVENUES OVER EXPENDITURES		\$ (531,773)	\$ -	\$ -	\$ (4,348,244)

Statement of Revenues & Expenditures

Valley Township

For Period Ending 12/31/2018

Selecting on FUND equals 08

2018

2017

ACCOUNT DESCRIPTION	CURRENT PERIOD		CURRENT YEAR YEAR-TO-DATE		PRIOR YEAR YEAR-TO-DATE	
	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
08.341.0000 Interest Earnings		591.06	8,500.00	8,346.27	700.00	8,918.48
08.350.0400 PA DCED GRANT			50,000.00			
08.364.1000 Sewerage Charges		67,972.40	2,670,000.00	2,836,473.75	2,800,000.00	2,738,281.99
08.364.1209 Connection Fees			10,000.00	3,829.22	15,317.00	17,906.28
08.364.1240 Conveyance fees		938.83	14,000.00	20,976.41	10,000.00	14,083.95
08.364.1900 Miscellaneous				0.10		2,730.71
Total Revenues		69,502.29	2,752,500.00	2,869,625.75	2,952,017.00	2,781,921.41
08.429.1100 SALARIES - WAGES SECRETARIES		4,504.36	31,065.00	56,809.41	50,159.00	61,991.71
08.429.1200 THIRD PARTY PLUMBING INSPECTOR					1,000.00	
08.429.2100 PRINTING & POSTAGE			3,000.00	1,564.41	3,800.00	4,288.43
08.429.2200 BANK CHARGES			45.00		180.00	15.00
08.429.2300 TELEPHONE		258.68	3,800.00	3,138.64	4,100.00	3,514.22
08.429.3109 ENGINEERING		1,677.25	30,000.00	34,016.25	40,000.00	24,998.75
08.429.3200 LEGAL				92.50	1,000.00	
08.429.3300 AUDIT		26,650.57	4,800.00	32,817.24	4,800.00	4,800.00
08.429.3400 FACILITY & OFFICE EXPENSE			47,895.00		47,895.00	56.28
08.429.3410 BENEFIT ALLOCATION			64,805.00		64,805.00	
08.429.4300 SEWAGE TREATMENT COSTS		345,200.36	2,338,000.00	3,020,482.98	2,500,000.00	2,147,130.00
08.429.4500 ELECTRICITY		2,237.92	15,100.00	17,198.06	15,100.00	15,927.25
08.429.4600 MAINTENANCE & REPAIRS		17,746.80	35,000.00	72,992.61	35,000.00	49,168.05
08.429.4610 ROAD CREW SALARIES		2,562.96	65,770.00	37,568.12	62,135.00	63,405.47

2,770,573.75 Sewerage
65,900.00 Ins. claim
126,000.00

Page 25

Appendix A-5.2 (Gannett Fleming) EXHIBIT 20

Date: 03/21/2019

Time: 4:02:59PM

Statement of Revenues & Expenditures

Valley Township

User: CINDI

Page: 2

For Period Ending 12/31/2018

Selecting on FUND equals 08

2018

2017

ACCOUNT DESCRIPTION	CURRENT PERIOD		CURRENT YEAR YEAR-TO-DATE		PRIOR YEAR YEAR-TO-DATE	
	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
08.429.4620 I&I			25,000.00	625.00	35,000.00	
08.429.4630 UPGRADE TO SYSTEM - PA DCED GRA			50,000.00		180,000.00	
08.429.4700 SUPPLIES & EQUIPMENT			6,000.00	4,449.21	6,000.00	5,658.17
08.429.4900 MISCELLANEOUS			950.00		235.00	1,643.00
08.429.5000 THEFT LOSS						76,231.47
08.492.0100 Interfund Transfer to Gen Fund - Benefit A						112,700.00
Total Expenditures		400,838.90	2,721,230.00	3,281,754.43	3,051,209.00	2,571,528.49
Excess of Revenues over Expenditures for Report		331,336.61-	31,270.00	412,128.68-	99,192.00-	210,392.92

Statement of Revenues & Expenditures

Valley Township

For Period Ending 12/31/2018

Selecting on FUND equals 06

2018

2017

ACCOUNT DESCRIPTION	CURRENT PERIOD		CURRENT YEAR YEAR-TO-DATE		PRIOR YEAR YEAR-TO-DATE	
	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
06.341.0000 Interest Earnings		185.58	1,100.00	2,050.52	100.00	1,325.19
06.341.0100 Interest earning PLGIT						0.41
06.354.0600 PA DCED GRANT FUNDING						
06.378.1100 Metered Sales - Residential Customers		16,089.10	650,000.00	723,918.41	670,000.00	673,552.85
06.378.1300 WATER METERS			160.00	345.00	240.00	120.00
06.378.2200 WATER TAP-INS				882.66	11,300.00	9,478.48
06.380.0000 Miscellaneous Revenue		20.00	100.00	163.32	100.00	6,293.81
Total Revenues		16,294.68	651,360.00	727,359.91	772,740.00	690,770.74
06.427.4600 Maintenance & Repairs				600.00		890.00
06.427.4700 Supplies & Equipment		3,102.11	50,000.00	33,756.69	30,000.00	41,379.10
06.448.1200 THIRD PARTY PLUMBING INSPECTOR					1,000.00	
06.448.2100 PRINTING & POSTAGE			2,900.00	3,408.24	2,900.00	1,906.56
06.448.2200 BANK CHARGES			45.00		180.00	15.00
06.448.2300 TELEPHONE		128.17	1,200.00	1,243.25	1,200.00	1,124.52
06.448.3000 METER READING		1,413.41	16,961.00	16,960.92	16,961.00	16,960.92
06.448.3109 ENGINEERING		1,708.50	45,000.00	45,690.75	36,000.00	39,057.75
06.448.3300 AUDIT		17,079.16	3,400.00	23,245.82	3,400.00	3,400.00
06.448.3400 WATER RENT		37,011.75	370,000.00	370,987.29	400,000.00	363,556.75
06.448.3809 FACILITY & OFFICE EXPENSE		18,435.00	18,435.00	18,435.00	18,435.00	56,270.82
06.448.3810 SECRETARY SALARIES		3,205.16	61,062.00	39,024.75	44,970.00	43,624.75
06.448.3820 BENEFIT ALLOCATION		37,782.23	34,610.00	37,782.23	34,610.00	

707,238.41 Sales
 16,680.00 Ins. Claim
 723,918.41

Page 21

Appendix A-5.2 (Gannett Fleming) EXHIBIT 20
 Page 27 of 273

Date: 03/21/2019

Statement of Revenues & Expenditures

User: CINDI

Time: 4:00:17PM

Valley Township

Page: 2

For Period Ending 12/31/2018

Selecting on FUND equals 06

2018

2017

ACCOUNT DESCRIPTION	CURRENT PERIOD		CURRENT YEAR YEAR-TO-DATE		PRIOR YEAR YEAR-TO-DATE	
	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
06.448.4509 ELECTRICITY		1,340.85	19,000.00	13,520.76	21,000.00	15,021.80
06.448.4600 MAINTENANCE & REPAIRS			55,000.00	44,875.89	45,000.00	52,416.55
06.448.4610 ROAD CREW SALARIES		2,458.99	38,472.00	34,189.46	22,731.00	38,038.47
06.448.4620 MS - EMERENGY GENERATOR REPLAC					130,000.00	
06.448.5000 THEFT LOSS						20,420.14
Total Expenditures		123,665.33	716,085.00	683,721.05	808,387.00	637,867.81
Excess of Revenues over Expenditures for Report		107,370.65-	64,725.00-	43,638.86	35,647.00-	52,902.93

Statement of Revenues & Expenditures
Valley Township
Appendix A-5.2 (Gannett Fleming)
For Period Ending 12/31/2019
SEWER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
08.332.1000 RESTITUTION		99,575.32		
08.341.0000 Interest Earnings	8,000.00	3,191.70	8,500.00	8,346.27
08.350.0400 PA DCED GRANT			50,000.00	
08.354.0400 PA DCED GRANT	50,000.00			
08.364.1000 Sewerage Charges			2,670,000.00	2,770,573.75
08.364.1100 CONNECTION FEES	5,000.00	972.92		
08.364.1200 SEWERAGE CHARGES	2,640,000.00	2,663,203.34		
08.364.1209 Connection Fees			10,000.00	3,829.22
08.364.1210 SEWERAGE PENALTY CHARGES	55,250.00	64,336.75		
08.364.1240 Conveyance fees	15,000.00	15,444.15	14,000.00	20,976.41
08.364.1900 Miscellaneous				0.10
08.391.2000 INSURANCE COMPENSATION FOR LOSS				65,900.00
08.392.0810 Interfund Transfer - From CSB SF MM		237,623.54		
08.392.0830 TRANSFER FROM PLGIT SEWER ACCT		35,116.77		
Totals for :				
08 (- 08)	2,773,250.00	3,119,464.49	2,752,500.00	2,869,625.75
Total Revenues	2,773,250.00	3,119,464.49	2,752,500.00	2,869,625.75
08.427.4300 Sewage Treatment Costs		237,882.94		
08.429.1100 SALARIES - WAGES SECRETARIES			31,065.00	56,809.41
08.429.1120 Salary - Administration	40,045.00	44,201.80		
08.429.1400 Salary - Public Works	28,000.00	10,358.88		
08.429.1800 Salary - Overtime	8,400.00	8,665.21		
08.429.2100 OFFICE SUPPLIES		489.04	3,000.00	1,564.41
08.429.2150				

Statement of Revenues & Expenditures
Valley Township

EXHIBIT 20
Page 30 of 273

For Period Ending 12/31/2019

SEWER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
Postage	3,000.00	1,451.49		
08.429.2200 BANK CHARGES			45.00	
08.429.2270 Sanitation Supplies	2,300.00	1,647.80		
08.429.2300 TELEPHONE			3,800.00	3,138.64
08.429.2390 Diesel Fuel for Emergency Generators	900.00	823.03		
08.429.2391 Propane for Emergency Generators	1,600.00	234.64		
08.429.3100 SOLICITOR FEES		203.50		
08.429.3109 ENGINEERING			30,000.00	34,016.25
08.429.3110 Audit Services	3,423.00	5,812.67		
08.429.3130 Engineering	25,000.00	21,148.25		
08.429.3140 LEGAL FEES		138.75		
08.429.3200 LEGAL				92.50
08.429.3210 Telephone	3,150.00	3,182.32		
08.429.3300 AUDIT			4,800.00	32,817.24
08.429.3400 FACILITY & OFFICE EXPENSE			47,895.00	
08.429.3410 BENEFIT ALLOCATION			64,805.00	
08.429.3420 Printing	2,800.00	300.00		
08.429.3610 ELECTRICITY	16,500.00	15,874.49		
08.429.3720 Maint & Repair Contracted Svc	34,689.00	68,700.47		
08.429.3800 Sewage Treatment Costs	2,600,000.00	2,728,345.98		
08.429.4300 SEWAGE TREATMENT COSTS			2,338,000.00	3,183,866.04
08.429.4500 ELECTRICITY			15,100.00	17,198.06
08.429.4600 MAINTENANCE & REPAIRS			35,000.00	72,992.61
08.429.4610				

Statement of Revenues & Expenditures

Valley Township

Appendix A-5.2 (Gannett Fleming)

EXHIBIT 20

Page 31 of 273

For Period Ending 12/31/2019

SEWER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
ROAD CREW SALARIES			65,770.00	37,568.12
08.429.4620				
I&I			25,000.00	625.00
08.429.4630				
UPGRADE TO SYSTEM - PA DCED GRANT PROJECTS			50,000.00	
08.429.4700				
SUPPLIES & EQUIPMENT			6,000.00	4,348.51
08.429.4900				
MISCELLANEOUS			950.00	
08.429.6100				
CAPITAL CONST. PA DCED GRANT	110,500.00			
08.482.4100				
Judgements & Damages		2,000.00		
08.491.0000				
REFUND OF PRIOR YEARS REVENUES		1,058.20		
08.492.0100				
Interfund Transfer to Gen Fund - Benefit Allocati	60,406.00			
08.492.0800				
INTERFUND TRANSFER - SEWER FUND - NEW BANK ACCT		272,740.31		
Totals for :				
08 (- 08)	2,940,713.00	3,425,259.77	2,721,230.00	3,445,036.79
Total Expenditures	2,940,713.00	3,425,259.77	2,721,230.00	3,445,036.79
Excess of Revenues over Expenditures for Report	-167,463.00	-305,795.28	31,270.00	-575,411.04

Statement of Revenues & Expenditures

Valley Township

Appendix A-5.2 (Gannett Fleming)

EXHIBIT 20

Page 32 of 273

For Period Ending 12/31/2019

WATER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
06.332.1000 RESTITUTION		25,206.17		
06.341.0000 Interest Earnings	1,300.00	2,135.80	1,100.00	2,050.52
06.378.1100 Metered Sales - Residential Customers	655,000.00	679,044.06	650,000.00	707,238.41
06.378.1110 Metered Sales - Penalties	25,000.00	19,067.61		
06.378.1300 WATER METERS			160.00	345.00
06.378.2200 WATER TAP-INS				882.66
06.378.9010 Meter Inspection & Installation	120.00	90.00		
06.378.9030 Water Meters	160.00	208.00		
06.380.0000 Miscellaneous Revenue			100.00	163.32
06.389.0000 Miscellaneous Revenue	100.00	140.00		
06.391.2000 INSURANCE COMPENSATION FOR LOSS				16,680.00
Totals for : 06 (- 06)	681,680.00	725,891.64	651,360.00	727,359.91
Total Revenues	681,680.00	725,891.64	651,360.00	727,359.91
06.427.4600 Maintenance & Repairs				600.00
06.427.4700 Supplies & Equipment			50,000.00	33,756.69
06.448.1120 Salary - Administrative	40,045.00	41,444.67		
06.448.1400 Salary - Public Works	22,000.00	19,474.49		
06.448.1800 Salary - Overtime	11,900.00	12,920.26		
06.448.2100 OFFICE SUPPLIES		63.65	2,900.00	3,408.24
06.448.2120 Forms	400.00	402.97		
06.448.2150 Postage	2,220.00	2,469.04		
06.448.2200 BANK CHARGES			45.00	
06.448.2210 Chemicals	10,000.00	17,888.32		

Statement of Revenues & Expenditures

Valley Township

Appendix A-5.2 (Gannett Fleming)

EXHIBIT 20

Page 33 of 273

For Period Ending 12/31/2019

WATER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
06.448.2300 TELEPHONE			1,200.00	1,243.25
06.448.2600 Minor Equipment	10,500.00	22,660.62		
06.448.3000 METER READING			16,961.00	16,960.92
06.448.3100 Meter Reading	16,961.00	16,960.92		
06.448.3109 ENGINEERING			45,000.00	45,690.75
06.448.3110 Audit Services	3,500.00	5,735.67		
06.448.3130 Engineering	50,000.00	40,608.50		
06.448.3140 LEGAL FEES		138.75		
06.448.3210 Telephone	1,200.00	1,653.42		
06.448.3300 AUDIT			3,400.00	23,245.82
06.448.3400 WATER RENT			370,000.00	370,987.29
06.448.3420 Printing	2,700.00	1,329.00		
06.448.3610 Electric	15,000.00	13,320.43		
06.448.3720 Maint & Repair Contracted Service	55,000.00	44,627.36		
06.448.3800 Water Rent	370,000.00	365,912.49		
06.448.3809 FACILITY & OFFICE EXPENSE			18,435.00	18,435.00
06.448.3810 SECRETARY SALARIES			61,062.00	39,024.75
06.448.3820 BENEFIT ALLOCATION			34,610.00	37,782.23
06.448.3900 Bank Charges	45.00			
06.448.4500 Annual Radio Support Contract	6,700.00	5,580.00		
06.448.4509 ELECTRICITY			19,000.00	13,520.76
06.448.4600 MAINTENANCE & REPAIRS			55,000.00	44,875.89
06.448.4610 ROAD CREW SALARIES			38,472.00	34,189.46
06.448.4800				

Statement of Revenues & Expenditures

Valley Township

Appendix A-5.2 (Gannett Fleming)

EXHIBIT 20

Page 34 of 273

For Period Ending 12/31/2019

WATER FUND

ACCOUNT DESCRIPTION	CURRENT YEAR BUDGET	YEAR-TO-DATE ACTUAL	PRIOR YEAR BUDGET	YEAR-TO-DATE ACTUAL
Annual State Licensing	230.00	6,654.67		
06.448.7200				
Capital Purchase - Minor Equipment	22,650.00			
06.491.0100				
REFUNDS		1,914.60		
06.492.0100				
DUE TO GENERAL FUND	48,240.00	48,240.00		
Totals for :				
06 (- 06)	689,291.00	669,999.83	716,085.00	683,721.05
Total Expenditures	689,291.00	669,999.83	716,085.00	683,721.05
Excess of Revenues over Expenditures for Report	-7,611.00	55,891.81	-64,725.00	43,638.86

**VALLEY TOWNSHIP
Water Fund Budget (06)
Funding Year 2020**

ACCOUNT DESCRIPTION	2019 BUDGET	2019 ACTUAL	2020	NOTES
INCOME				
06.332.1000				
RESTITUTION		24,939.29		
06.341.0000				
Interest Earnings	1,300.00	1,543.09	1,550.00	
06.378.1100				
Metered Sales - Residential Customers	655,000.00	491,703.66	664,500.00	
06.378.1110				
Metered Sales - Penalties	25,000.00	12,339.95	20,000.00	
06.378.2200				
WATER TAP-INS			100.00	
06.378.9010				
Meter Inspection	120.00	20.00	40.00	
06.378.9030				
Water Meters	160.00		80.00	
06.389.0000				
Miscellaneous Revenue	100.00	140.00	100.00	
Totals for Water (06) Income	681,680.00	530,685.99	686,370.00	
EXPENDITURES				
06.448.1120				
Salary - Administrative	40,045.00	27,545.11	43,727.00	
06.448.1400				
Salary - Public Works	22,000.00	12,730.75	20,950.00	
06.448.1800				
Salary - Overtime	11,900.00	8,731.61	13,500.00	
06.448.2100				
OFFICE SUPPLIES		63.65	50.00	
06.448.2120				
Forms	400.00	402.97	400.00	

06.448.2150				
Postage	2,220.00	2,469.04	2,535.00	
06.448.2210				
Chemicals	10,000.00	11,887.94	12,000.00	
06.448.2600				
Minor Equipment	10,500.00	17,773.25	15,000.00	
06.448.3100				
Meter Reading	16,961.00	9,893.87	12,500.00	
06.448.3110				
Audit Services	3,500.00	2,312.67	2,500.00	
06.448.3130				
Engineering	50,000.00	34,821.25	32,500.00	
06.448.3140				
LEGAL FEES		138.75	150.00	
06.448.3210				
Telephone	1,200.00	1,025.36	1,250.00	
06.448.3420				
Printing	2,700.00	1,329.00	1,400.00	Annual Drinking water report
06.448.3610				
Electric	15,000.00	8,975.94	12,500.00	
06.448.3720				
Maint & Repair Contracted Service	55,000.00	33,569.26	55,000.00	
06.448.3800				
Water Rent	370,000.00	236,013.34	360,000.00	
06.448.3900				
Bank Charges	45.00			
06.448.4500				
Annual Radio Support Contract	6,700.00	480.00	7,000.00	
06.448.4800				
Annual State Licensing	230.00	6,604.67	6,635.00	Storage Tank permit PWSID, Chpt 302, Ann. Monit
06.448.7200				
Capital Purchase - Minor Equipment	22,650.00			
06.492.0100				
DUE TO GENERAL FUND	48,240.00		67,259.00	
Totals for Water (06) Expenditures	689,291.00	416,768.43	666,856.00	
Net Surplus (Deficit)	-7,611.00	113,917.56 #	19,514.00	

**VALLEY TOWNSHIP
Sewer Fund (08)
Funding Year 2020**

ACCOUNT DESCRIPTION	2019 BUDGET	2019 ACTUAL	2020	NOTES
INCOME				
BALANCE FORWARD	167463			
08.332.1000 RESTITUTION		98,784.52		
08.341.0000 Interest Earnings	8,000.00	2,610.66	2,000.00	
08.354.0400 PA DCED GRANT	50,000.00			
08.364.1100 CONNECTION FEES	5,000.00	972.92	5,000.00	
08.364.1200 SEWERAGE CHARGES	2,640,000.00	1,976,818.51	2,679,500.00	
08.364.1210 SEWERAGE PENALTY CHARGES	55,250.00	45,326.74	60,000.00	
08.364.1240 Conveyance fees	15,000.00	11,981.76	14,500.00	
08.392.0810 Interfund Transfer - From CSB SF MM		237,623.54		
08.392.0830 TRANSFER FROM PLGIT SEWER ACCT				
Totals for Income	2,940,713.00	2,374,118.65	2,761,000.00	
EXPENSES				
08.429.1120 Salary - Administration	40,045.00	29,990.81	44,700.00	
08.429.1400 Salary - Public Works	28,000.00	7,403.65	11,100.00	
08.429.1800 Salary - Overtime	8,400.00	5,895.01	8,900.00	
08.429.2100 OFFICE SUPPLIES		466.61	500.00	

08.429.2150			
Postage	3,000.00		3,000.00
08.429.2270			
Sanitation Supplies	2,300.00	1,647.80	2,300.00
08.429.2390			
Diesel Fuel for Emergency Generators	900.00		900.00
08.429.2391			
Propane for Emergency Generators	1,600.00		1,600.00
08.429.3100			
SOLICITOR FEES		203.50	200.00
08.429.3110			
Audit Services	3,423.00	2,312.67	3,500.00
08.429.3130			
Engineering	25,000.00	18,885.25	26,000.00
08.429.3140			
LEGAL FEES		138.75	
08.429.3210			
08.429.3610			
ELECTRICITY	16,500.00	11,420.74	16,700.00
08.429.3720			
Maint & Repair Contracted Svc	34,689.00	45,802.26	30,895.00
08.429.3800			
Sewage Treatment Costs	2,600,000.00	2,111,431.56	2,750,000.00
08.482.4100			
Judgements & Damages		2,000.00	
08.491.0000			
REFUND OF PRIOR YEARS REVENUES		1,058.20	
08.492.0100			
Interfund Transfer to Gen Fund - Benefit A	60,406.00		
08.492.0800			
INTERFUND TRANSFER - SEWER FUND - NEW BANK		120,000.00	
Totals for Expenses	2,940,713.00	2,361,025.76	2,903,495.00
Net Surplus (deficit)	\$0.00	\$13,092.89	-\$142,495.00

Schedule 4.17

Pending Development Plans

Development	DEP Status	Total EDU's	Actual / Projected New Connections						Total in 5 years	5-10 Year Projection	Agreements Yes/No
			2018	2019	2020	2021	2022	2023			
Oakcrest Phase I & Glencrest Road	Approved	18	-	-	-	-	-	-	-	-	No
Valley Suburban Center	Approved	340	-	-	50	48	40	40	178	162	No
Airport Expansion	Exempt	111	-	1	1	1	1	1	5	106	No
Valley Township Municipal Complex	Exempt	1	-	1	-	-	-	-	1	-	No
Total EDU		470	0	2	51	49	41	41	184	268	

Schedule 7.03(a)

Rates

As of the date of this Agreement, Seller's rates are as follows:

Quarterly Service Rate: \$84.35 per quarter

Use Rate: The use rate per 1,000 gallons of water, which rate is charged after the use of the initial 10,000 gallons of water in a quarter is \$8.40 per thousand gallons of water.

		2019	2020	2021	2022	2023
Buildings and Land						
Resurface Hayti BB Court		\$15,000				
Resurface Rock Run BB Court			\$15,000			
Resurface Westwood BB Court				\$15,000		
Demolish 890 W. Lincoln			\$25,000			
Renovation on Hayti Park				\$50,000		
Vehicles						
2019 10 Ton with plow (#9)	PW	\$125,000				
2019 Recycle Truck	PW	\$320,000				
2020 F550 with plow (#1)	PW		\$110,000			
2019 Ford Explorer (38-54)	PD	\$50,000				
2020 Ford Explorer (38-50)	PD		\$50,000			
2021 Ford Explorer (38-52)	PD			\$50,000		
2022 Ford Explorer (38-51)	PD				\$50,000	
2023 Ford Explorer	PD					\$50,000
Codes vehicle	Codes			\$40,000		
Water Fund						
Inspection of Water Tower	PW	\$4,000				
Update Scada Ssystem	PW	\$9,000				
Water Towers Repairs	PW		\$30,000			
Mineral Springs Generator	PW			\$99,500		
Sanitary Sewer						
Rock Run Pump Station ByPass P	PW	\$110,500				
Hayti Basin Clean and TV	PW	\$19,940				
Hayti Basin Repairs	PW		\$200,000			
Round Hill Pump Station Muffin	PW		\$90,000			
SCADA System for all pump stati	PW			\$50,000		
Stormwater						
Cynthia Dr Inlet/Swale Recon	PW	\$50,000				
E Glencrest SW Outfall Engineeri	PW	\$60,000				
Valley Crossing SW Basin Retrofi	PW		\$163,000			
Springbrook Village SW Basin Re	PW			\$178,000		
Stream Stabilization near Fireho	PW				\$194,000	
Irish Lane Water Quality Inlets	PW					\$30,000
Roadway Maintenance						
Manor Road Retaining Wall	PW		\$66,000			
Concord Street Reconstruction	PW		\$225,000			
Bridge Maintenance						
Hemlock Street Bridge	PW	\$423,000				
Valley Station Road Bridge	PW		\$9,420			
Biennial Bridge Inspections	PW		\$15,000		\$15,000	
Grove Ave Bridge	PW			\$100,000		
South Park over Sucker Run	PW					\$130,000
Software						
Finance Software	Admin		\$90,000			
Police Records Management	PD		\$55,000			
Total Capital		\$1,186,440	\$1,143,420	\$582,500	\$259,000	\$210,000

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, available free of charge through its website, www.aswater.com, as soon as material is 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 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. AWR and GSWC have filed the certification of officers required by Section 302 of the Sarbanes-Oxley Act as Exhibits 31.1 and 31.2 to its Form 10-K for the year ended December 31, 2019.

Overview

AWR is the parent company of GSWC and American States Utility Services, Inc. ("ASUS") (and its wholly owned subsidiaries: Fort Bliss Water Services Company ("FBWS"), Terrapin Utility Services, Inc. ("TUS"), Old Dominion Utility Services, Inc. ("ODUS"), Palmetto State Utility Services, Inc. ("PSUS"), Old North Utility Services, Inc. ("ONUS"), Emerald Coast Utility Services, Inc. ("ECUS") and Fort Riley Utility Services, Inc. ("FRUS")). AWR was incorporated as a California corporation in 1998 as a holding company. AWR has three reportable segments: water, electric and contracted services. Within the segments, AWR has two principal business units, water and electric service utility operations, conducted through GSWC, and contracted services conducted through ASUS and its subsidiaries. FBWS, TUS, ODUS, PSUS, ONUS, ECUS and FRUS may be referred to herein collectively as the "Military Utility Privatization Subsidiaries."

GSWC is a public utility engaged principally 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"). It was incorporated as a California corporation on December 31, 1929. GSWC also distributes electricity in several San Bernardino County mountain communities in California through its Bear Valley Electric Service ("BVES") division.

GSWC served 260,708 water customers and 24,420 electric customers at December 31, 2019, or a total of 285,128 customers, compared with 259,919 water customers and 24,353 electric customers at December 31, 2018, or a total of 284,272 customers. GSWC's operations exhibit seasonal trends. Although GSWC's water utility operations have a diversified customer base, residential and commercial customers account for the majority of GSWC's water sales and revenues. Revenues derived from commercial and residential water customers generally account for more than 90% of total water revenues for the years ended December 31, 2019, 2018 and 2017.

ASUS, itself or through the Military Utility Privatization 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 50-year firm, fixed-price contracts. Each of the contracts with the U.S. government is subject to termination, in whole or in part, prior to the end of its 50-year term for convenience of the U.S. government or as a result of default or nonperformance by the subsidiary performing the contract. The contract price for each of these contracts is subject to annual economic price adjustments. 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 guarantees performance of ASUS's military privatization contracts.



[Overview](#)

[Subsidiaries](#)

[Our Footprint](#)

[Board of Directors](#)

[Officers](#)

[CSR Report](#)

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About Us

American States Water Company (AWR) has grown significantly since 1929 when the original water systems were acquired. Yesterday's visions have developed into today's reality — a viable service provider focused on the needs of over one million people throughout California.

American States Water Company is the parent of Golden State Water Company and American States Utility Services, Inc., serving over one million people in nine states. Through its utility subsidiary, Golden State Water Company, the company provides water service to approximately 260,000 customer connections located within more than 80 communities in Northern, Coastal and Southern California. The company also distributes electricity to approximately 24,000 customer connections in the City of Big Bear Lake and surrounding areas in San Bernardino County, California. Through its contracted services subsidiary, American States Utility Services, Inc., the company provides operations, maintenance and construction management services for water distribution and wastewater collection and treatment facilities located on military bases throughout the country under 50-year privatization contracts with the U.S. government.

Values

In pursuing our mission, the board of directors, management and the company's employees are guided by the shared Values presented below:

Integrity - Building trust through honest communications and doing what is right

Teamwork - Maximizing efficiency through collaboration and individual strengths

Respect - Valuing diversity and treating all stakeholders with fairness

Excellence in Service - Striving for excellence and quality in everything we do

Accountability - Taking ownership of one's actions

ITEM 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 6,800 professionals who provide drinking water, wastewater and other related services to approximately 15 million people in 46 states. The Company conducts the majority of its business through regulated utilities that provide water and wastewater services, collectively presented as the "Regulated Businesses." The Company also operates market-based businesses that provide complementary services. Individually, these 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 as the "Market-Based Businesses," which is consistent with how management assesses the results of these businesses.

Throughout this 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 16 states in the United States, with over 3.4 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 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 \$3,094 million for 2019, \$2,984 million for 2018 and \$2,958 million for 2017, accounting for 86%, 87% and 88%, 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, 2019:

	Operating Revenues (in millions)				Number of Customers (in thousands)			
	Water (a)	Wastewater	Total	% of Total	Water	Wastewater	Total	% of Total
New Jersey	\$ 718	\$ 42	\$ 760	24.6%	651	51	702	20.4%
Pennsylvania	627	62	689	22.3%	666	74	740	21.6%
Missouri	314	11	325	10.5%	470	15	485	14.1%
Illinois	281	24	305	9.9%	286	51	337	9.8%
California	228	4	232	7.5%	177	3	180	5.2%
Indiana	223	1	224	7.2%	314	2	316	9.2%
West Virginia	158	1	159	5.1%	166	1	167	4.9%
Total—Top Seven States (b)	2,549	145	2,694	87.1%	2,730	197	2,927	85.2%
Other states (c)	378	22	400	12.9%	475	32	507	14.8%
Total Regulated Businesses	\$ 2,927	\$ 167	\$ 3,094	100.0%	3,205	229	3,434	100.0%

(a) Includes other operating revenues consisting primarily of miscellaneous utility charges, fees and rents.
 (b) The Company's "Top Seven States" are determined based upon operating revenues.
 (c) Includes the Company's utilities in the following states: Georgia, Hawaii, Iowa, Kentucky, Maryland, Michigan, New York, Tennessee and Virginia.

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, such as homes, apartment complexes, businesses and governmental entities.

[Table of Contents](#)**ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

The following discussion should be read together with the Consolidated Financial Statements and the Notes thereto included elsewhere in this Form 10-K. This discussion contains forward-looking statements that are based on management's current expectations, estimates and projections about the Company's business, operations and financial performance. The cautionary statements made in this Form 10-K should be read as applying to all related forward-looking statements whenever they appear in this Form 10-K. The Company's actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of a number of factors, including those that are discussed under "Forward-Looking Statements," Item 1A—Risk Factors and elsewhere in this Form 10-K. The Company has a disclosure committee consisting of members of senior management and other key employees involved in the preparation of the Company's SEC reports. The committee is actively involved in the review and discussion of the Company's SEC filings. For a discussion and analysis of the Company's financial statements for fiscal 2018 compared to fiscal 2017, please refer to Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations in the Company's Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 19, 2019.

Overview

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. The Company employs approximately 6,800 professionals who provide drinking water, wastewater and other related services to approximately 15 million people in 46 states. 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, collectively presented as the "Regulated Businesses." The Company's utilities operate in approximately 1,700 communities in 16 states in the United States, with over 3.4 million active customers with services provided by its water and wastewater networks. Services provided by the Company's utilities are generally subject to regulation by PUCs. The Company also operates market-based businesses that provide complementary services to residential and smaller commercial customers, the U.S. government on military installations, as well as municipalities, utilities and industrial customers, collectively presented as the "Market-Based Businesses." These Market-Based Businesses are not subject to regulation by state PUCs. See Item 1—Business for additional information.

Item 6. Selected Financial Data

Summary of Selected Financial Data (Unaudited)

Essential Utilities, Inc. and Subsidiaries

(In thousands of dollars, except per share amounts)

Years ended December 31,	2019	2018	2017	2016	2015
PER COMMON SHARE:					
Net income:					
Basic	\$ 1.04	\$ 1.08	\$ 1.35	\$ 1.32	\$ 1.14
Diluted	1.04	1.08	1.35	1.32	1.14
Cash dividends declared and paid	0.9066	0.8474	0.7920	0.7386	0.6860
Return on Essential Utilities stockholders' equity	5.8%	9.6%	12.2%	12.7%	11.7%
Book value at year end	\$ 17.58	\$ 11.28	\$ 11.02	\$ 10.43	\$ 9.78
Market value at year end	46.94	34.19	39.23	30.04	29.80
INCOME STATEMENT HIGHLIGHTS:					
Operating revenues	\$ 889,692	\$ 838,091	\$ 809,525	\$ 819,875	\$ 814,204
Depreciation and amortization	156,476	146,673	136,724	133,008	128,737
Interest expense	125,383	99,054	88,543	80,811	76,808
Income before income taxes (1) (2)	211,526	178,319	256,652	255,160	216,752
Provision for income taxes (benefit)	(13,017)	(13,669)	16,914	20,978	14,962
Net income (1) (2)	224,543	191,988	239,738	234,182	201,790
BALANCE SHEET HIGHLIGHTS:					
Total assets	\$ 9,361,985	\$ 6,964,496	\$ 6,332,463	\$ 6,158,991	\$ 5,717,873
Property, plant and equipment, net	6,345,790	5,930,326	5,399,860	5,001,615	4,688,925
Essential Utilities stockholders' equity	3,880,860	2,009,364	1,957,621	1,850,068	1,725,930
Long-term debt, including current portion, excluding debt issuance costs (3)	3,077,400	2,563,660	2,143,127	1,910,633	1,779,205
Total debt, excluding debt issuance costs (3)	3,103,124	2,579,109	2,146,777	1,917,168	1,795,926
ADDITIONAL INFORMATION:					
Net cash flows from operating activities	\$ 338,523	\$ 368,522	\$ 381,318	\$ 396,163	\$ 370,794
Capital expenditures	550,273	495,737	478,089	382,996	364,689
Net cash expended for acquisitions of utility systems and other	59,687	145,693	5,860	9,423	28,989
Dividends on common stock	188,512	150,736	140,660	130,923	121,248
Number of utility customers served	1,026,704	1,005,590	982,849	972,265	957,866
Number of shareholders of common stock	22,752	23,476	23,511	24,750	25,269
Common shares outstanding (000)	220,759	178,092	177,714	177,394	176,544
Employees (full-time)	1,583	1,571	1,530	1,551	1,617

- (1) 2019 and 2018 results include mark-to-market fair value adjustment expense of \$18,756 (\$23,742 pre-tax) and \$47,225 (\$59,779 pre-tax) associated with our interest rate swap agreements that were entered into to mitigate interest rate risk associated with our debt issuances to fund a portion of the Peoples Gas Acquisition
- (2) 2015 results include Essential Utilities' share of a joint venture impairment charge of \$21,433 (\$32,975 pre-tax)
- (3) Debt issuance costs for the years ended December 31, 2019, 2018, 2017, 2016, and 2015 were \$29,022, \$20,651, \$21,605, \$22,357, and \$23,165, respectively

PART IItem 1. *Business**Name Change*

On February 3, 2020, Aqua America, Inc. changed its corporate name to Essential Utilities, Inc. to align the name of the Company with the anticipated business plan of the Company following the pending acquisition of Peoples Gas and to reflect the proposed combination of regulated water utilities and natural gas utilities that offer essential utility services to customers. After completion of the acquisition, the water and wastewater utility services will be provided through Essential Utilities' Aqua companies and the natural gas utility services will be provided through its Peoples natural gas companies.

The Company

Essential Utilities, Inc. (referred to as "Essential Utilities", the "Company", "we", "us", or "our"), a Pennsylvania corporation, is the holding company for regulated utilities providing water or wastewater services to an estimated three million people in Pennsylvania, Ohio, Texas, Illinois, North Carolina, New Jersey, Indiana, and Virginia. Our largest operating subsidiary is Aqua Pennsylvania, Inc., which accounted for approximately 54% of our operating revenues and approximately 72% of our Regulated water segment's income for 2019. As of December 31, 2019, 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 utility subsidiaries provide similar services in seven additional states. In addition, the Company's market-based activities are conducted through Aqua Infrastructure, LLC and Aqua Resources Inc. Aqua Infrastructure provides non-utility raw water supply services for firms in the natural gas drilling industry. Aqua Resources manages a water system operating and maintenance contract; and offers, through a third-party, water and sewer line protection solutions and repair services to households. In 2017, we completed the sale of business units that were reported within Aqua Resources, one which installed and tested devices that prevent the contamination of potable water and another that constructed, maintained, and repaired water and wastewater systems.

Essential Utilities, which prior to its name change on February 3, 2020 was known as Aqua America, Inc. was formed in 1968 as a holding company for its primary subsidiary, Aqua Pennsylvania, formerly known as Philadelphia Suburban Water Company. In the early 1990s, we embarked on a growth through acquisition strategy focused on water and wastewater operations. Our most significant water transactions to date have been the merger with Consumers Water Company in 1999, the acquisition of the regulated water and wastewater operations of AquaSource, Inc. in 2003, the acquisition of Heater Utilities, Inc. in 2004, and the acquisition of American Water Works Company, Inc.'s regulated water and wastewater operations in Ohio in 2012. Since the early 1990s, our business strategy has been primarily directed toward the regulated water and wastewater utility industry, where we have more than quadrupled the number of regulated customers we serve, and have extended our regulated operations from southeastern Pennsylvania to include our current regulated utility operations throughout Pennsylvania and in seven additional states. During 2010 through 2013, we sold our utility operations in six states, pursuant to a portfolio rationalization strategy to focus our operations in areas where we have critical mass and economic growth potential. Currently, the Company seeks to acquire businesses in the U.S. regulated sector, which includes water and wastewater utilities and other regulated utilities, and to pursue growth ventures in market-based activities, such as infrastructure opportunities that are supplementary and complementary to our regulated utility businesses. On October 22, 2018, we entered into a purchase agreement to acquire, from LDC Funding LLC, the parent company of PNG Companies, a natural gas distribution company consisting of Peoples Natural Gas Company LLC, Peoples Gas Company LLC, Peoples Gas West Virginia, Inc., Peoples Gas Kentucky, Inc., and Delta Natural Gas Company Inc. expanding the Company's regulated utility business to include natural gas distribution. This acquisition is referred to as the "Peoples Gas Acquisition," and collectively these businesses are referred to as "Peoples." Peoples serves approximately 747,000 gas utility customers in western Pennsylvania, West Virginia, and Kentucky. Approval from the United States Federal Trade Commission was obtained in December 2018, and approvals from the public utility commissions of Kentucky, West Virginia, and Pennsylvania were obtained in March 2019, April 2019, and January 2020, respectively. This acquisition is expected to close on March 16, 2020, and it is anticipated that this acquisition will result in the recording of goodwill.

udgeted mandatory utility plant expenditures, due to planned governmental highway projects, which require the relocation of Artesian Water's water service mains, expected to be incurred in 2020 through 2022 are as follows:

In thousands

2020	\$	3,000
2021		3,000
2022		3,000
	\$	9,000

The exact timing and extent of these relocation projects is controlled primarily by the Delaware Department of Transportation.

NOTE 13

GEOGRAPHIC CONCENTRATION OF CUSTOMERS

Artesian Water, Artesian Water Maryland and Artesian Water Pennsylvania provide water utility service to customers within their established service territory in all three counties of Delaware and in portions of Maryland and Pennsylvania, pursuant to rates filed with and approved by the DEPSC, the MDPSC and the PAPUC. As of December 31, 2019, Artesian Water was serving approximately 87,700 customers, Artesian Water Maryland was serving approximately 2,500 customers and Artesian Water Pennsylvania was serving approximately 40 customers.

Artesian Wastewater began providing wastewater services to a community in Sussex County, Delaware in July 2005. Artesian Wastewater provides wastewater utility service to customers within its established service territory in Sussex County, Delaware pursuant to rates filed with and approved by the DEPSC. As of December 31, 2019, Artesian Wastewater was serving approximately 2,400 customers, all of which are located in Sussex County, Delaware.

NOTE 14

REGULATORY PROCEEDINGS

Overview

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 requested level of rates by the Company.

We are subject to regulation by the following state regulatory commissions:

- The DEPSC, regulates both Artesian Water and Artesian Wastewater.
- 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 utilities 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. 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 Resources Corporation Reports First Quarter 2020 Results

[f](#) [t](#) [in](#) [G+](#) [p](#) | [@](#) Email | [Print Friendly](#) | [Share](#)

May 06, 2020 17:19 ET | **Source:** Artesian Resources Corporation

NEWARK, Del., May 06, 2020 (GLOBE NEWSWIRE) -- Artesian Resources Corporation (Nasdaq: ARTNA), a leading provider of water and wastewater services, and related services, on the Delmarva Peninsula, today announced first quarter results for 2020. Net income for the three months ended March 31, 2020 was \$4.1 million, a \$0.5 million, or 13.5%, increase compared to net income recorded during the first quarter of 2019. Diluted net income per share increased 12.8% to \$0.44 compared to \$0.39 for the first quarter of 2019.

The Company continues to provide essential utility services during the COVID-19 pandemic and is following social distancing and remote work directives to protect the well-being of its customers and employees. To support our customers and communities, we have suspended service disconnections and late fees. The full impact of the COVID-19 outbreak continues to evolve and management is actively monitoring the situation and impacts on its results of operations, customer billing and collections, suppliers, industry, and workforce.

"During these challenging times we remain committed to providing uninterrupted quality water service to our customers and community. We have modified our work practices and limited in-person customer interactions to safeguard the health and well-being of our employees and customers," said Dian C. Taylor, Chair, President & CEO.

Water sales revenue increased 2.7% to \$17.4 million for the three months ended March 31, 2020 from \$17.0 million for the same period in 2019, primarily due to increases in the number of customers served, overall water consumption and distribution system improvement charge revenue.

Other utility operating revenue increased 11.9% to \$1.3 million for the three months ended March 31, 2020 from \$1.1 million for the same period in 2019, primarily as a result of increases in wastewater revenue from additional customers and in inspection fee revenue related to new development.

Non-utility revenue decreased \$0.1 million, or 5.7%, for the three months ended March 31, 2020 compared to the same period in 2019, primarily due to a decrease in contract service revenue.

Operating expenses, excluding depreciation and income taxes, increased \$0.1 million, or 1.1%, for the three months ended March 31, 2020 compared to the same period in 2019. The majority of the increase is related to increases in payroll and employee benefit costs, partially offset by a decrease in repair and maintenance costs related to the painting of elevated water storage tanks under contract.

Federal and state income tax expense increased \$0.2 million, or 15.2%, for the three months ended March 31, 2020 compared to the same period in 2019, primarily due to increased pre-tax income in 2020 compared to 2019.

Miscellaneous income increased \$0.3 million, or 36.0%, for the three months ended March 31, 2020 compared to the same period in 2019 due to the annual patronage distribution from CoBank, ACB. An increased average loan volume with CoBank, ACB in 2020 compared to 2019 and its issuance in 2020 of a special patronage distribution equivalent to 0.1% of the 2019 average loan volume resulted in the increased patronage distribution.

Allowance for funds used during construction, or AFUDC, increased \$0.2 million, or 87.2%, as a result of higher long-term construction activity subject to AFUDC for the three months ended March 31, 2020 compared to the same period in 2019. "We remain focused on our long term growth strategy, investing in new sources of supply and new distribution mains to meet current and projected demands. We also recently completed the acquisition of the water assets of the town of Frankford, further expanding our customer base in our Sussex County service area," said Taylor.

Interest expense increased \$0.2 million during the three months ended March 31, 2020 compared to the same period in 2019, primarily due to an increase in long-term debt interest related to the Series V First Mortgage Bond issued on December 17, 2019. This increase is partially offset by a decrease in short-term debt interest, primarily related to lower short-term borrowing levels in 2020.

About Artesian Resources

Artesian Resources Corporation operates as a holding company of wholly-owned subsidiaries offering water and wastewater services, and related services, on the Delmarva Peninsula. Artesian Water Company, the principal subsidiary, is the oldest and largest regulated water utility on the Delmarva Peninsula and has been providing water service since 1905. Artesian supplies 8.3 billion gallons of water per year through 1,331 miles of main to over 300,000 people.

Forward Looking Statements

This release contains forward looking statements within the meaning of the Private

Securities Litigation Reform Act of 1995 regarding, among other things, the impact of the COVID-19 pandemic and the continued growth in our business and the number of customers served. These statements involve risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including: changes in weather, changes in our contractual obligations, changes in government policies, the timing and results of our rate requests, failure to receive regulatory approval, changes in economic and market conditions generally and other matters discussed in our filings with the Securities and Exchange Commission. While the Company may elect to update forward-looking statements, we specifically disclaim any obligation to do so and you should not rely on any forward-looking statement as representation of the Company's views as of any date subsequent to the date of this release.

Contact:

Nicki Taylor

Investor Relations

(302) 453-6900

ntaylor@artesianwater.com

Artesian Resources Corporation
Condensed Consolidated Statement of Operations
(In thousands, except per share amounts)
(Unaudited)

	Three months ended March 31,	
	2020	2019
Operating Revenues		
Water sales	\$ 17,392	\$ 16,934
Other utility operating revenue	1,253	1,120
Non-utility revenue	1,256	1,332
	19,901	19,386
Operating Expenses		
Utility operating expenses	9,235	9,121
Non-utility operating expenses	728	767
Depreciation and amortization	2,752	2,715
State and federal income taxes	1,359	1,180
Property and other taxes	1,365	1,319
	15,439	15,102
Operating Income	4,462	4,284

Allowance for funds used during construction	423	226
Miscellaneous	1,088	800
Income Before Interest Charges	<u>5,973</u>	<u>5,310</u>
Interest Charges	1,899	1,720
Net Income	<u>\$ 4,074</u>	<u>\$ 3,590</u>
Weighted Average Common Shares Outstanding - Basic	9,297	9,258
Net Income per Common Share - Basic	\$ 0.44	\$ 0.39
Weighted Average Common Shares Outstanding - Diluted	9,343	9,314
Net Income per Common Share - Diluted	\$ 0.44	\$ 0.39

Artesian Resources Corporation
Condensed Consolidated Balance Sheet
(In thousands)
(Unaudited)

	March 31, 2020	December 31, 2019
Assets		
Utility Plant, at original cost less accumulated depreciation	\$ 537,190	\$ 530,721
Current Assets	12,679	14,207
Regulatory and Other Assets	15,718	15,440
	<u>\$ 565,587</u>	<u>\$ 560,368</u>
Capitalization and Liabilities		
Stockholders' Equity	\$ 162,354	\$ 160,268
Long Term Debt, Net of Current Portion	143,563	144,156
Current Liabilities	27,923	25,599
Advances for Construction	5,302	5,421
Contributions in Aid of Construction	152,457	149,479
Other Liabilities	73,988	75,445
	<u>\$ 565,587</u>	<u>\$ 560,368</u>

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this annual report, as applicable. When considering forward-looking statements, investors should keep in mind the cautionary statements in this annual report and the documents incorporated by reference. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise.

Overview

California Water Service Group is a holding company incorporated in Delaware in 1999 with six 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), 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. 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. Cal Water was the original operating company and began operations in 1926.

Our business is conducted through our operating subsidiaries and we provide utility services to approximately two million people. The bulk of the business consists of the production, purchase, storage, treatment, testing, distribution and sale of water for domestic, industrial, public and irrigation uses, and for fire protection. In some areas, we provide wastewater collections and treatment services, including treatment which allows water recycling. We also provide non-regulated water-related services under agreements with municipalities and other private companies. The non-regulated services include full water system operation, billing and meter reading services. Non-regulated operations also include the lease of communication antenna sites, lab services and promotion of other non-regulated services.

During the year ended December 31, 2019, 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 489,600 customer connections in approximately 100 California communities through 21 separate districts, which are subject to regulation by the California Public Utilities Commission (CPUC). Cal Water operates two leased water systems, the City of Hawthorne and the City of Commerce, which are governed through their respective city councils and are outside of the CPUC's jurisdiction. California water operations accounted for approximately 94.0% of our total customer connections and 93.8% of our total consolidated operating revenue.

Hawaii Water provides service to approximately 5,000 water and wastewater customer connections on the islands of Maui 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 accounts for 1.0% of our total customer connections and approximately 3.8% of our total consolidated operating revenue.

Washington Water provides domestic water service to approximately 17,700 customer connections in the Tacoma and Olympia areas. Washington Water's utility operations are regulated by the Washington Utilities and Transportation Commission. Washington

Water accounts for approximately 3.4% of our total customer connections and approximately 1.8% of our total consolidated operating revenue. **Appendix A-5.2 (Gannett Fleming)** Page 57 of 73

Table of Contents

New Mexico Water provides service to approximately 8,300 water and wastewater customer connections in the Belen, Los Lunas, Indian Hills, and Elephant Butte areas in New Mexico. New Mexico's regulated operations are subject to the jurisdiction of the New Mexico Public Regulation Commission. New Mexico Water accounts for approximately 1.6% of our total customer connections and 0.6% of our total consolidated operating revenue.

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 be independently determined based on the cost of service, except in Washington, which has a statewide tariff. 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 distribute and treat 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 right-of-ways as necessary.

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 will 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 \$9.5 million, \$10.1 million and \$10.0 million in 2019, 2018, and 2017, 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 will retain title to the system and system improvements and remain 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 \$2.9 million, \$3.0 million, and \$3.4 million in 2019, 2018, and 2017, respectively. The agreement allows us to request a rate change annually in order to recover costs.

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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 for fire protection. In some areas, we provide wastewater collections and treatment services, including treatment which allows water recycling. We also provide non-regulated water-related services under agreements with municipalities and other private companies. The non-regulated services include full water system operation, billing and meter reading services. Non-regulated operations also include the lease of communication antenna sites, lab services and promotion of other non-regulated services.

During the year ended December 31, 2019, 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.

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Hawaii Water provides service to approximately 5,000 water and wastewater customer connections on the islands of Maui 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 accounts for 1.0% of our total customer connections and approximately 3.8% of our total consolidated operating revenue.

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5/26/2020

Inline XBRL Viewer

EXHIBIT 20

Water accounts for approximately 3.4% of our total customer connections and approximately 1.8% of our total consolidated operating revenue.

Appendix A-5.2 (Gannett Fleming)

Page 60 of 73

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 in New Jersey, Delaware and Pennsylvania. Middlesex also operates water and wastewater systems under contract on behalf of municipal and private clients in New Jersey, Delaware and Maryland.

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), Utility Service Affiliates (Perth Amboy) Inc., (USA-PA), Tidewater Environmental Services, Inc. (TESI) and Twin Lakes Utilities, Inc. (Twin Lakes).

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

The Middlesex System in New Jersey provides water services to approximately 61,000 retail customers, primarily in eastern Middlesex County, New Jersey and provides water 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 60% of our 2019 consolidated operating revenues.

The Middlesex System’s retail customers are located in an area of approximately 55 square miles in Woodbridge Township, the City of South Amboy, the Boroughs of Metuchen and Carteret, portions of the Township of Edison and the Borough of South Plainfield, all in Middlesex County, and a portion of the Township of Clark in Union County. Retail customers include a mix of residential customers, large industrial concerns and commercial and light industrial facilities. These customers are located in generally well-developed areas of central New Jersey.

The contract customers of the Middlesex System comprise an area of approximately 110 square miles with a population of over 200,000. Contract sales to the Townships of Edison and Marlboro, the City of Rahway and the Old Bridge Municipal Utilities Authority are supplemental to the water systems owned and operated by these customers. Middlesex is the sole source of water for the Borough of Highland Park and the Township of East Brunswick.

Middlesex provides water service to approximately 300 customers in Cumberland County, New Jersey. This system is referred to as Bayview, and is not physically interconnected with the Middlesex System. Bayview produced less than 1% of our 2019 consolidated operating revenues.

[Index](#)***Tidewater System***

Tidewater, together with its wholly-owned subsidiary, Southern Shores, provides water services to approximately 50,000 retail customers for residential, commercial and fire protection purposes in over 400 separate communities in New Castle, Kent and Sussex Counties, Delaware. The Tidewater System produced approximately 27% of our 2019 consolidated operating revenues.

USA-PA

USA-PA operates the City of Perth Amboy, New Jersey's (Perth Amboy) water and wastewater systems under a 10-year agreement, which expires in December 2028. There are approximately 12,000 customers comprised of residential, commercial and industrial connections, most of which are served by both the water and wastewater systems. In addition to performing day-to day operations, USA-PA is also responsible for emergency responses and management of capital projects funded by Perth Amboy. USA-PA produced approximately 5% of our 2019 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 2019 consolidated operating revenues.

Pinelands Wastewater provides wastewater collection and treatment services to approximately 2,500 residential customers. Under contract, it also services one municipal wastewater system in Burlington County, New Jersey with approximately 200 residential customers. Pinelands Wastewater produced approximately 1% of our 2019 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 2022. USA serves approximately 6,300 retail customers in Avalon, most of which are served by both the water system and wastewater collection system. In addition to performing day-to-day operations, USA is responsible for billing, collections, customer service, emergency responses and management of capital projects funded by Avalon.

USA also provides unregulated water and wastewater services under contract with several other smaller New Jersey municipalities.

Under a marketing agreement with HomeServe, 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. The agreement expires in 2021.

USA produced approximately 2% of our 2019 consolidated operating revenues.

TESI System

TESI provides wastewater collection and treatment services to approximately 3,700 retail customers in Sussex County, Delaware. TESI produced approximately 2% of our 2019 consolidated operating revenues.

White Marsh

White Marsh operates or maintains water and/or wastewater systems that serve approximately 1,700 retail customers under more than 40 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 2% of our 2019 consolidated operating revenues.

[Index](#)**Twin Lakes System**

Twin Lakes provides water services to approximately 115 residential customers in Shohola, Pennsylvania. Twin Lakes produced less than 1% of our 2019 consolidated operating revenues.

Financial Information

Consolidated operating revenues, operating income and net income are as follows:

	(Thousands of Dollars)		
	Years Ended December 31,		
	2019	2018	2017
Operating Revenues	\$ 134,598	\$ 138,077	\$ 130,775
Operating Income	\$ 35,520	\$ 37,142	\$ 37,798
Net Income	\$ 33,888	\$ 32,452	\$ 22,809

Operating revenues were earned from the following sources:

	Years Ended December 31,		
	2019	2018	2017
Residential	53.1%	50.5%	50.8%
Commercial	11.3	10.7	10.7
Industrial	7.0	7.4	7.1
Fire Protection	9.1	8.8	9.0
Contract Sales	10.6	10.6	10.4
Contract Operations	8.7	11.9	11.9
Other	0.2	0.1	0.1
Total	100.0%	100.0%	100.0%

Water Supplies and Contracts

Our New Jersey, Delaware and Pennsylvania water supply systems are physically separate and are not interconnected. In New Jersey, the Pinelands System and Bayview System are not interconnected with the Middlesex System or each other. We believe we have adequate sources of water supply to meet the current service requirements of our present customers in New Jersey, Delaware and Pennsylvania.

Middlesex System

Our Middlesex System, which produced approximately 13.2 billion gallons in 2019, obtains water from surface sources and wells (groundwater sources). In 2019, surface sources of water provided approximately 72% of the Middlesex System's water supply, groundwater sources provided approximately 20% from 31 Company-owned wells and the balance was purchased from a non-affiliated water utility regulated by the New Jersey Board of Public Utilities (NJBP) under an agreement which expires February 27, 2021. This agreement provides for minimum purchases of 3.0 million gallons per day (mgd) of treated water with provisions for additional purchases. The Middlesex System's distribution storage facilities are used to supply water to customers at times of peak demand, outages and emergencies.

The principal source of surface water for the Middlesex System is the Delaware & Raritan Canal, which is owned by the State of New Jersey and operated as a water resource by the New Jersey Water Supply Authority (NJWSA). Middlesex is under contract with the NJWSA, which expires November 30, 2023, and provides for average purchases of 27.0 mgd of untreated water from the Delaware & Raritan Canal, augmented by the Round

TEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following discussion of the Company's historical results of operations and financial condition should be read in conjunction with the Company's consolidated financial statements and related notes.

Management's Overview*Operations*

Middlesex Water Company (Middlesex or the Company) has operated as a water utility in New Jersey since 1897, in Delaware through our wholly-owned subsidiary, Tidewater Utilities, Inc. (Tidewater), since 1992 and in Pennsylvania through our wholly-owned subsidiary, Twin Lakes Utilities, Inc. (Twin Lakes), since 2009. We are in the business of collecting, treating and distributing water for domestic, commercial, municipal, industrial and fire protection purposes. We also operate water and wastewater systems under contract for governmental entities and private entities in New Jersey, Delaware and Maryland and provide regulated wastewater services in New Jersey and Delaware through five subsidiaries. We are regulated by public utility commissions as to rates charged to customers for water and wastewater services, as to the quality of water service we provide and as to certain other matters in New Jersey, Delaware and Pennsylvania. Only our Utility Service Affiliates, Inc. (USA), Utility Service Affiliates (Perth Amboy), Inc. (USA-PA) and White Marsh Environmental Services, Inc. (White

[Index](#)

Marsh) subsidiaries are not regulated public utilities as related to rates and services quality. All entities however, are subject to environmental regulation at the federal and state levels.

Our primary New Jersey water utility system (the Middlesex System) provides water services to approximately 61,000 retail customers, primarily in central New Jersey. The Middlesex System also provides water sales under contract to municipalities in central New Jersey with a total population of over 0.2 million. Our Bayview system provides water services in Downe Township, New Jersey. Our other New Jersey subsidiaries, Pinelands Water Company (Pinelands Water) and Pinelands Wastewater Company (Pinelands Wastewater) (collectively, Pinelands), provide water and wastewater services to approximately 2,500 customers in Southampton Township, New Jersey.

Our Delaware subsidiaries, Tidewater and Southern Shores Water Company, LLC (Southern Shores), provide water services to approximately 50,000 retail customers in New Castle, Kent and Sussex Counties, Delaware. Tidewater's subsidiary, White Marsh, services approximately 1,700 customers in Kent and Sussex Counties, as well as portions of Maryland, through various operations and maintenance contracts.

Our Tidewater Environmental Services, Inc. (TESI) subsidiary provides wastewater services to approximately 3,700 retail customers in Sussex Counties, Delaware.

USA-PA operates the water and wastewater systems for the City of Perth Amboy, New Jersey (Perth Amboy) under a 10-year operations and maintenance contract expiring in 2028. In addition to performing day-to day operations, USA-PA is also responsible for emergency response and management of capital projects funded by Perth Amboy.

USA operates the Borough of Avalon, New Jersey's (Avalon) water utility, sewer utility and storm water system under a 10-year operations and maintenance contract expiring in 2022. In addition to performing day-to-day operations, USA is responsible for billing, collections, customer service, emergency response and management of capital projects funded by Avalon. Under a marketing agreement with HomeServe, USA offers residential customers in New Jersey and Delaware water and wastewater related services and 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 also provides unregulated water and wastewater services under contract with several New Jersey municipalities.

Our Pennsylvania subsidiary, Twin Lakes, provides water services to 115 retail customers in the Township of Shohola, Pike County, Pennsylvania.

Recent Developments

Capital Construction Program - The Company's multi-year capital construction program encompasses numerous projects designed to upgrade and replace utility infrastructure as well as enhance the integrity and reliability of assets to better serve the current and future generations of water and wastewater customers. The Company plans to invest approximately \$124 million in 2020 in connection with this plan for projects that include, but are not limited to:

- Enhanced treatment process at the Company's largest water treatment plant in Edison, New Jersey, to mitigate the formation of disinfection by-products that can develop during the water treatment process;
- Enhanced treatment processes at the Company's primary wellfield in South Plainfield, New Jersey to comply with new more stringent water quality regulations and integrate surge mitigation along with revisions to corrosion control and chlorination;
- Replacement of approximately six miles of water mains including service lines, valves, fire hydrants and meters in Edison and South Amboy, New Jersey;
- Construction of a new replacement wastewater treatment plant to serve our customers in the Town of Milton, Delaware;

2019 vs. 2018

The revenue increase consists of \$22,868 from Water Utility Services offset by a decrease of \$85 from Real Estate Services.

The revenue increase for Water Utility Services is primarily due to the merger with CTWS which generated an increase of \$21,660, an increase in authorized rates which resulted in \$13,877 of additional revenue, and an increase of \$2,673 due to new customers. These increases were partially offset by a net decrease in revenue recognized from certain balancing and memorandum accounts, which included a decrease of \$19,841 in WCMA, partially offset by increases of \$6,366 from the Tax Act and \$1,349 in the Cost of Capital Memorandum Account.

2018 vs. 2017

The revenue increase consists of \$8,694 from Water Utility Services offset by a decrease of \$220 from Real Estate Services.

The revenue increase for Water Utility Services is primarily due to an increase in rates which resulted in \$17,516 of additional revenue and an increase of \$7,376 due to higher water usage. The Company also recognized a revenue increase due to new customers of \$2,298. These increases were partially offset by decreases in revenue recognized from certain balancing and memorandum accounts, which included a decrease of \$6,504 as a result of the Tax Act, a \$5,462 decrease in the WCMA, a \$3,864 decrease in cost recovery recorded in the prior year, a \$1,379 decrease in the Cost of Capital Memorandum Account, and a \$1,371 decrease due to the 2016 WCMA revision to new customer classification.

Water Utility Services' Operating Revenue and Customer Counts

The following tables present operating revenues and number of customers by customer group of Water Utility Services:

Operating Revenue by Customer Group

	2019	2018	2017
Residential and business	\$ 384,448	356,535	331,835
Industrial	2,514	2,215	1,987
Public authorities	17,892	18,049	16,448
Others	18,157	12,519	11,066
Balancing and memorandum accounts	(7,926)	2,899	22,187
	<u>\$ 415,085</u>	<u>392,217</u>	<u>383,523</u>

Number of Customers

	2019	2018	2017
Residential and business	370,074	241,253	238,231
Industrial	596	76	75
Public authorities	2,398	1,343	1,349
Others	13,539	4,595	4,478
	<u>386,607</u>	<u>247,267</u>	<u>244,133</u>

Operating Expense

Operating expense by segment was as follows:

Operating Expense

	2019	2018	2017
Water Utility Services	\$ 334,963	299,548	280,916
Real Estate Services	3,751	3,539	3,688
All Other	24,289	21,172	2,770
	<u>\$ 363,003</u>	<u>324,259</u>	<u>287,374</u>

Item 6. Selected Financial Data

FIVE YEAR FINANCIAL AND STATISTICAL REVIEW
SJW Group and Subsidiaries

	2019	2018	2017	2016	2015
CONSOLIDATED RESULTS OF OPERATIONS (in thousands)					
Operating revenue	\$ 420,482	397,699	389,225	339,706	305,082
Operating expense:					
Purchased water	99,118	97,378	86,456	72,971	61,089
Power	7,443	6,180	7,295	6,102	6,121
Groundwater extraction charges	43,917	46,770	47,817	32,088	31,240
Other production expenses	25,291	18,398	16,571	14,470	13,606
Administrative and general	66,301	48,933	48,940	41,529	40,388
Maintenance	20,505	18,414	18,361	18,361	15,926
Property taxes and other non-income taxes	19,068	14,975	13,642	12,123	11,667
Depreciation and amortization	65,592	54,601	48,292	44,625	40,740
Merger related expenses	15,768	18,610	—	—	—
Total operating expense	363,003	324,259	287,374	242,269	220,777
Operating income	57,479	73,440	101,851	97,437	84,305
Interest expense, other income and expense	(25,398)	(24,608)	(5,358)	(11,056)	(23,151)
Income before income taxes	32,081	48,832	96,493	86,381	61,154
Provision for income taxes	8,454	10,065	35,393	33,542	23,272
Net income before noncontrolling interest	23,627	38,767	61,100	52,839	37,882
Less net income attributable to the noncontrolling interest	224	—	1,896	—	—
SJW Group net income	\$ 23,403	38,767	59,204	52,839	37,882
Dividends paid	\$ 34,134	23,074	21,332	16,559	15,885
CONSOLIDATED PER SHARE DATA					
Earnings per share - diluted	0.82	1.82	2.86	2.57	1.85
Dividends paid	1.20	1.12	1.04	0.81	0.78
Book value per common share	31.28	31.31	22.57	20.61	18.83
CONSOLIDATED BALANCE SHEET (in thousands)					
Utility plant and intangible assets	\$ 3,168,505	1,935,911	1,792,323	1,666,381	1,524,422
Less accumulated depreciation and amortization	962,019	607,090	553,059	520,018	487,659
Net utility plant	2,206,486	1,328,821	1,239,264	1,146,363	1,036,763
Net real estate investment	44,102	44,009	45,081	50,459	61,434
Total assets	3,132,470	1,956,389	1,458,001	1,443,376	1,337,325
Capitalization:					
Stockholders' equity	889,984	889,312	463,209	421,646	383,783
Long-term debt, less current portion	1,283,597	431,424	431,092	433,335	377,187
Total capitalization	\$ 2,173,581	1,320,736	894,301	854,981	760,970
OTHER STATISTICS—WATER UTILITY SERVICES					
Average revenue per connection (in thousands)	\$ 1,087	1,609	1,594	1,402	1,263
Investment in gross utility plant per connection (in thousands)	\$ 8,195	7,832	7,340	6,874	6,311
Connections at year-end	386,607	247,267	244,133	242,421	241,555
Miles of main at year-end	5,465	3,091	3,082	3,069	3,031
Water production (million gallons)	42,216	40,053	38,584	35,847	36,535
Maximum daily production (million gallons)	206	149	148	136	130
Population served (estimate)	1,604,442	1,114,200	1,100,200	1,092,600	1,089,000

Note: 2019 information including Other Statistics includes CTWS for the period ended October 9, 2019 through December 31, 2019

rowth

During the three year period ended December 31, 2019, the Company continued to grow the number of customers and its distribution facilities.

The following table sets forth certain of the Company's summary statistical information.

(In thousands of dollars)

	For the Years Ended December 31		
	2019	2018	2017
Revenues:			
Residential	\$ 33,409	\$ 31,281	\$ 31,257
Commercial and industrial	14,441	13,578	13,729
Other	3,728	3,578	3,603
Total	<u>\$ 51,578</u>	<u>\$ 48,437</u>	<u>\$ 48,589</u>
Average daily water consumption (gallons per day)	20,157,000	19,517,000	18,378,000
Miles of water mains at year-end	984	980	973
Miles of wastewater mains at year-end	30	19	19
Additional water distribution mains installed/acquired (ft.)	21,676	36,598	31,709
Wastewater collection mains acquired (ft.)	55,952	-	57,386
Number of customers at year-end	71,411	70,263	69,604
Population served at year-end	201,000	199,000	198,000

Information About Our Executive Officers

The Company presently has 106 full time employees including the officers detailed in the information set forth under the caption "Executive Officers of the Company" of the 2020 Proxy Statement incorporated herein by reference.

Available Information

The Company makes available free of charge, on or through its website (www.yorkwater.com), its annual report on Form 10-K, its quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the SEC. The SEC also maintains a website at www.sec.gov that contains reports, proxy statements, and other information about SEC registrants, including the Company.

Shareholders may request, without charge, copies of the Company's financial reports. Such requests, as well as other investor relations inquiries, should be addressed to:

Molly E. Norton
Investor Relations &
Communications Administrator

The York Water Company
130 East Market Street
York, PA 17401

(717) 718-2942
(800) 750-5561
mollyn@yorkwater.com

[Table of Contents](#)

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 two wastewater collection systems and two wastewater collection and treatment systems. The Company operates within its franchised water territory, which covers 39 municipalities within York County, Pennsylvania and nine municipalities within Adams County, Pennsylvania. The Company's wastewater operations include portions of five municipalities in York County, Pennsylvania. The Company is regulated by the Pennsylvania Public Utility Commission, or PPUC, for both water and wastewater in the areas of billing, payment procedures, dispute processing, terminations, service territory, debt and equity financing and rate setting. The Company must obtain PPUC approval before changing any practices associated with the aforementioned areas.

Water service is supplied through the Company's own distribution system. The Company obtains the bulk of its water supply from both the South Branch and East Branch of the Codorus Creek, which together have an average daily flow of 73.0 million gallons. This combined watershed area is approximately 117 square miles. The Company has two reservoirs, Lake Williams and Lake Redman, which together hold up to approximately 2.2 billion gallons of water. The Company supplements its reservoirs with a 15-mile pipeline from the Susquehanna River to Lake Redman which provides access to an additional supply of 12.0 million gallons of untreated water per day. The Company also owns seven wells which are capable of providing a safe yield of approximately 366,000 gallons per day to supply water to its customers in Carroll Valley Borough and Cumberland Township, Adams County. As of December 31, 2019, the Company's average daily availability was 35.4 million gallons, and average daily consumption was approximately 20.1 million gallons. The Company's service territory had an estimated population of 201,000 as of December 31, 2019. Industry within the Company's service territory is diversified, manufacturing such items as fixtures and furniture, electrical machinery, food products, paper, ordnance units, textile products, air conditioning systems, laundry detergent, barbells and motorcycles.

The Company's water business is somewhat dependent on weather conditions, particularly the amount and timing of rainfall. Revenues are particularly vulnerable to weather conditions in the summer months. Prolonged periods of hot and dry weather generally cause increased water usage for watering lawns, washing cars, and keeping golf courses and sports fields irrigated. Conversely, prolonged periods of dry weather could lead to drought restrictions from governmental authorities. Despite the Company's adequate water supply, customers may be required to cut back water usage under such drought restrictions which would negatively impact revenues. The Company has addressed some of this vulnerability by instituting minimum customer charges which are intended to cover fixed costs of operations under all likely weather conditions.

The Company's business does not require large amounts of working capital and is not dependent on any single customer or a very few customers for a material portion of its business. Increases in revenues are generally dependent on the Company's ability to obtain rate increases from the PPUC in a timely manner and in adequate amounts and to increase volumes of water sold through increased consumption and increases in the number of customers served. The Company continuously looks for water and wastewater acquisition and expansion opportunities both within and outside its current service territory as well as additional opportunities to enter into bulk water contracts with municipalities and other entities to supply water.

The Company has agreements with several municipalities to provide sewer billing and collection services. The Company also has a service line protection program on a targeted basis in order to further diversify its business. Under this optional program, customers pay a fixed monthly fee, and the Company will repair or replace damaged customer service lines, as needed, subject to an annual maximum dollar amount. The Company continues to review and consider opportunities to expand both initiatives.

[Table of Contents](#)

Page 4

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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.



DEALS AUGUST 6, 2018 / 5:11 PM / 6 MONTHS AGO

SJW Group makes \$1.1 billion all-cash offer for Connecticut Water

3 MIN READ



NEW YORK (Reuters) - SJW Group (SJW.N) and Connecticut Water Service Inc (CTWS.O) said on Monday they were changing from a merger to an acquisition agreement, with SJW offering to buy the New England utility for \$1.1 billion in cash instead of combining stock.

The switch to an all-cash offer is worth \$70 per Connecticut Water share, a 33 percent premium to Connecticut Water's share price prior to the original deal announced in March, according to a joint statement.

It was also higher than the implied \$61.86 per share value of the Clinton, Connecticut-based firm under the merger-of-equals transaction, which would have created a combined company in which existing SJW shareholders would hold 60 percent of the stock.

SJW closed 2.3 percent lower, while Connecticut Water was 9 percent higher at \$68.50.

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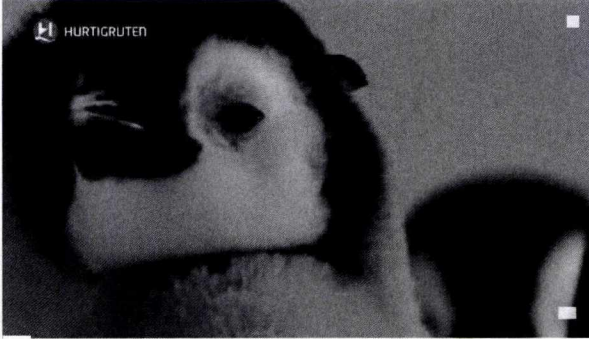
To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase (JPM.N). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

The new deal aims to conclude in the first quarter of 2019, subject to approvals from Connecticut Water's shareholders, as well as regulators in Connecticut and Maine.

The duo's original all-stock merger announcement in March triggered competing offers from Eversource Energy (ES.N) and California Water Service Group (CWT.N).

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"We have converted from a stock-for-stock deal to a cash offer, which will resolve any further market distractions from the inferior proposals," SJW Chief Executive Eric Thornburg told Reuters, in reference to the actions by Eversource and CalWater.

Switching to an acquisition, versus a merger structure, means that SJW shareholders will no longer be required to vote on approving the deal, the statement said.



CalWater has an open tender offer to acquire SJW that runs until Sept. 28.

However, asked if the change was aimed at heading off any shareholder challenge to the deal, Thornburg told Reuters it "wasn't a consideration" and it had received nothing but support from its shareholders.

RBS sounds alarm over Brexit

CalWater declined to comment. A spokesman for Eversource said the company was evaluating developments but, as it has made clear, it will be disciplined in pursuing this or any other transaction.

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker
Our Standards: The Thomson Reuters Trust Principles.

MORE FROM REUTERS

Wastewater treatment is provided by the Borough of West Chester pursuant to a Sewer Capacity Agreement dated November 14, 2017, by and between the Borough and East Bradford Township. Copies of West Chester's 2017 Chapter 94 Reports to DEP for the Goose Creek WWTP and for the Taylor Run WWTP are attached hereto as **Exhibit E3** and **Exhibit E4**.

15. The Goose Creek WWTP has a permitted treatment capacity of 1.672 MGD. The Taylor Run WWTP has a permitted treatment capacity of 1.50 MGD. The elevation of the Goose Creek WWTP is generally about EL 370. The elevation of the Taylor Run WWTP is generally about EL 260. The elevation of the Requested Territory ranges from approximately EL 365 to EL 280.

16. Water service in the Requested Territory is provided by both Aqua Pennsylvania, Inc. and private wells.

17. The original cost, by year and major plant category, of the East Bradford Township used and useful plant in service is \$8,294,931 with a related calculation depreciation reserve of \$2,820,983. The original cost value includes a series of capped sewers along the North Benjamin Drive area of the Township. The capped sewers include approximately 3,300 linear feet of 8" Gravity PVC pipe and 20 manholes, with an estimated original cost value of approximately \$100,000 as estimated by Aqua. The pipe and manholes are included in the totals on page 2-11 and 2-12 of Exhibit W. Aqua will categorize the capped sewer pipe and manholes as plant held for future use in its asset allocation upon closing. The area of capped sewers along North Benjamin Drive is not included in the Requested Territory.

18. Tentative journal entries to record the transaction are presented in Section IV.

IV. ASSET PURCHASE AGREEMENT

19. The *Assets Purchase Agreement* is dated December 20, 2017. The *First Amendment to Assets Purchase Agreement* is dated April 18, 2018. The purchase price is Five Million Dollars

(\$5,000,000.00). In addition to the purchase price, Section 1.5 of the Agreement provides that Aqua will assume certain defined liabilities and pay certain out-of-pocket costs incurred by East Bradford Township.

20. The purchase price and Agreement are based on arm's length negotiations. Aqua and East Bradford Township are not affiliated with each other. Aqua will use short term debt initially for the purchase of the assets with the expectation that the short term debt will be converted to long term debt and equity capital at a later date.

21. The wastewater system assets to be acquired are the "Assets" and have the meaning specified in Section 1.1 of the Agreement. The Assets include the assets, properties and rights of East Bradford Township that comprise the wastewater system or that are owned by East Bradford Township and used by it solely in connection with operation of the system.

22. "Excluded Assets," which are those assets not being transferred to Aqua, have the meaning specified in Section 1.4 of the Agreement. Excluded Assets include customer service laterals that run from the curb area to individual customer residences or structures; piping and fixtures internal to each customer residence or structure; cash and cash equivalents; and the items set forth in Schedule 1.4 of the Agreement.

23. "Assumed Liabilities" has the meaning specified in Section 1.6 of the Agreement and include the liabilities and obligations under the Assumed Contracts that arise after Closing, liabilities incurred or arising from and after Closing under or from failure to comply with permits, approvals or licenses related to the system that are transferred to Aqua and the obligation to provide wastewater service after Closing. The Assumed Contracts, which are listed in Schedule 1.6 of the APA and attached hereto as **Exhibit F1** and **Exhibit F2**, are the Sewer Capacity Agreement dated November 14, 2017, by and between the Borough of West Chester and East Bradford Township and the Intergovernmental Cooperation Agreement dated March 15, 1999, between East Bradford and Birmingham Township.

East Bradford Township

	# of Customers	Annual Gallons Treated (2017)
Residential- Single Family	399	23,783,560
Residential- Townhomes	814	36,390,635
Commercial		
Bradford Retail - The Bistro		112,800
Bradford Retail - Strip Stores		688,000
Brookworth Plaza - Dunkin Donuts		147,200
Brookworth Plaza - CVS		35,300
Brookworth Plaza - empty building		-
Brookworth Plaza - Strip Stores		142,000
Brookworth Plaza - PNC Bank		17,000
Countryside Food Mart		52,700
Antique Ice Museum		3,600
Mrs. Mike's Restaurant		103,110
Brandywine Hall Nursing Home		8,281,000
Daily Local News - now empty building		24,400
Bradford Plaza - Strip Stores		1,991,430
Bradford Plaza - Giant Food Store		2,527,700
Bradford Plaza - Walgreens		47,000
Bradford Plaza - Giant Gas Station		6,200
Chester County Art Association		120,100
Industrial		
Diesel Systems		66,300
Chem Service		173,400
Other Class(?)*		
Goddard School		252,800
Hillsdale Elementary School		649,700
WCU S Campus Apts - 144		24,200
WCU S Campus Apts - 167		583,900
WCU S Campus Apts - 168		500,900
WCU S Campus Apts - 169		441,900
WCU S Campus Apts - 170		570,900
WCU S Campus Apts - 171		318,900
WCU S Campus Apts - 172		422,000
WCU S Campus Apts - 173		306,400
WCU S Campus Apts - 174		424,500
WCU S Campus Apts - 175		323,400
WCU S Campus Apts - 176		340,000
WCU S Campus Apts - 177		356,000
University Student Housing 1		4,463,500
University Student Housing 2		5,429,000
Total		90,121,435

*May include church, school, public, etc... (please insert a line for each)

420,000
153,300,000

35
399
814
1,248

1 **Q. How many customers will the acquisition add?**

2 A. The acquisition of East Norriton will add 4,966 customers to Aqua's existing 28,000
3 wastewater customers. This is an increase in customers of 17.7% (or about 20%).²³

4 **Q. Will the acquisition increase rates for the customers to be acquired?**

5 A. Yes. Aqua witness Packer states that he reasonably expects that rates for East Norriton
6 customers will increase under Aqua ownership.²⁴ As discussed above, Aqua calculates
7 that if the entire revenue deficiency resulting from the acquisition is applied to East
8 Norriton Township customers, the adjusted average bill for customers using four thousand
9 gallons per month would increase from approximately \$39 per month to \$52 per month,
10 which would be a 35% rate increase.²⁵

11 **Q. Will the acquisition increase rates for existing Aqua customers?**

12 A. Yes. Mr. Packer's testimony shows that, as a result of the acquisition, rates for existing
13 Aqua water customers and existing Aqua wastewater customers will increase if the revenue
14 deficiency is not fully borne by the East Norriton Township customers. Mr. Packer's
15 schedules show estimated increases to existing total Aqua water and wastewater customers
16 ranging from \$0.17 per month to \$1.66 per month (\$2.04 per year to \$19.92 per year).²⁶ If
17 the costs were spread to only existing wastewater customers, and not water customers, the

²³ Exhibit U, Direct Testimony of William C. Packer, p. 9, lines 2-3 and 11-12, p. 16, lines 11-12.

²⁴ Exhibit U, Direct Testimony of William C. Packer, p. 18, lines 17-20 and Appendix A, p. 1; Response to OCA-II-4, Attachment 1, p. 22 (attached as OCA Exhibit DJG-12).

²⁵ Exhibit U, Direct Testimony of William C. Packer, Appendix A, pp. 1-2 ($\$38.52 + \$13.42 = \$51.94$). ($\$13.42 \div \$38.52 \times 100 = 34.84\%$).

²⁶ Exhibit U, Direct Testimony of William C. Packer, Appendix A, p. 1.

1 **Q. Describe the scope and organization of your testimony.**

2 A. My testimony addresses the application filed by Aqua Pennsylvania Wastewater, Inc.
3 (“Aqua” or the “Company”) for the acquisition of the East Norriton Township (the
4 “Township”) wastewater collection system assets. My testimony responds to the fair
5 market value (“FMV”) approaches addressed in the testimonies of Harold Walker, III of
6 Gannett Fleming, who sponsors the FMV appraisals commissioned by the Company, and
7 Jerome C. Weinert, who sponsors the appraisal commissioned by the Township. I also
8 discuss the sufficiency of the notices sent to the customers of Aqua and the Township
9 regarding the impact on rates of the proposed acquisition.

II. EXECUTIVE SUMMARY

A. Overview

10 **Q. Please summarize Aqua’s application in this proceeding.**

11 A. Aqua’s application proposes to acquire the Township’s wastewater assets under Sections
12 1102 and 1329 of the Public Utility Code (the “Code”). According to Section 1329(c)(2)
13 of the Code, the ratemaking rate base is the lesser of the negotiated purchase price and the
14 average of two FMV appraisals. The FMV estimated by Gannett Fleming and AUS
15 Consultants is \$24.2 million and \$25.1 million, respectively. The purchase price negotiated
16 by Aqua and the Township is \$21 million. Thus, the proposed rate base in the application
17 is \$21 million.

Report by Class

Account	Name Service Address	Tax ID	Book	Status	Alert Code
97990.00	F M BROWN SONS INC 790 DANIEL BOONE ROAD	43-5345-07-68-8539	BIRDSBORO PA	A	19508-8737
99991.00	DIEROLF, CANDACE 21 PINE AVENUE	BIRDSBORO	PA	A	19508
99992.00	TELFORD, MARK 19-6 CRANBERRY RIDGE	READING	PA	A	19606-3934

Total Class: R: 8,708


Class: TRAILER PARK

20000.00	KLIEWER, KIM B 4851 PERKIOMEN AVENUE	43-5325-08-79-	100 READING PA	A	19606
(610)670-0191					
20010.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34-	201 READING PA	A	19606-3655
20020.00	BORDIC MOBILE HOME PARK 214 BORDIC ROAD	43-5335-09-16-	200 READING PA	A	19606-3605
20030.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-10-35-	201 READING PA	A	19606-3655
20060.00	ALSACE TOWNSHIP 240 SPIES CHURCH ROAD		101 READING PA	A	19606
20070.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34-2494	PA	A	19606-3655
91230.00	PENN VIEW MOBILE PARK BROADWAY AVENUE	43-5327-14-42-	200 READING PA	A	19606
(610)779-4202					

Total Class: T: 7

Total: 8,984

Exeter Township supervisors agree to sell municipal wastewater system for \$96 million

 [readingeagle.com/news/article/exeter-township-supervisors-agree-to-sell-municipal-wastewater-system-for-96-million](https://www.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 1. The collection of a DSIC prior to inclusion of the acquired assets in a base
- 2 rate case;
- 3 2. The accrual of Allowance for Funds Used During Construction (AFUDC)
- 4 on non-DSIC eligible post-acquisition improvements; and
- 5 3. The deferral of depreciation for book and ratemaking purposes on non-
- 6 DSIC eligible post-acquisition improvements.

7
8 **Q. Please briefly summarize the Acquisition Transaction that the Joint Applicants**
9 **are proposing.**

10 A. Under the terms of the Proposed Transaction, PAWC would acquire the wastewater
11 utility assets of Kane for \$17.56 million.

12
13 **Q. Please describe the Kane wastewater utility.**

14 A. Kane owns and operates a sanitary wastewater collection system that provides
15 sanitary wastewater service to approximately 2,019 customers in Kane Borough and
16 a portion of Westmore Township in McKean County. The breakout of Kane's
17 customer count is: 1,847 residential, 162 commercial, 3 industrial, and 7 municipal.
18 The \$17.56 million purchase price for a wastewater utility assets serving 2,019
19 customers equates to a cost of approximately \$8,700 per customer.

20
21 **Q. Does the Application provide the terms of the Proposed Transaction?**

22 A. Yes, the Asset Purchase Agreement ("APA") dated November 4, 2019 was included
23 with the Application. The APA states that the purchase price is Seventeen Million,
24 Five Hundred Sixty Thousand Dollars (\$17,560,000). The Application indicates that
25 the purchase price is based on arm's length negotiations. PAWC and Kane Borough
26 are not affiliated with each other.

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

Appendix A-5.2 (Gannett Fleming)

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 & JESSIT\	214 ABBEY RD	Sewer	1	1	1437
11478.01	DAVID BULBIN & BARBARA	74 WOODLAND DR	Sewer	1	1	1438
11479.01	JEFFREY MOLINARO	1318 BLOOM RD	Sewer	1	1	1439
11480.01	CRYSTAL DOMETITA	91 WOODLAND DR	Sewer	1	1	1440
11482.01	AYUSA SINHA	672 LOWER ST	Sewer	1	1	1441
11483.01	MADIAN YAHYA	676 LOWER ST	Sewer	1	1	1442
11484.01	JEFF WATSON	168 KASEVILLE RD	Sewer	1	1	1443
11485.01	ANWER & SARAH QURESHI	656 LOWER ST	Sewer	1	1	1444
11486.01	ROSS & ASHLEY PETERS	83 TERRE LN	Sewer	1	1	1445
11488.01	QUESHI ANWER	664 LOWER STREET	Sewer	1	1	1446
11489.01	MATHUR HERSH	660 LOWER STREET	Sewer	1	1	1447
11490.01	PRASANNA SANKEPALLI & S	668 LOWER ST	Sewer	1	1	1448
11491.01	MARK GATSKI & CATHERINE	82 DELWOOD DR	Sewer	1	1	1449
11492.01	JONATHAN & LAURA SPAHF	78 TERRE LN	Sewer	1	1	1450
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	Sewer	0	1	1451
TOTALS					2195	1451

Report Criteria:

Customer.Final bill date = (IS NULL)

5/30/18

Customer #	Name	Service Address	Meter ID	Customer Type	Size
11104.01	ANIMAL CARE	32 ENTERPRISE DR	0049503582	Commercial	1
11107.01	EMMANUEL HOME	MONTOUR BLVD. 11107	8280982952	Commercial	1
11120.02	REDEEMER ORTHODOX PRESBYTER	1820 MONTOUR BLVD.	1540802894	Commercial	1
11121.01	FAB-TEX	29 WOODBINE LANE	0004695133	Commercial	1
11137.01	GEISINGER HEALTH SYSTEMS - MCB	MCBRIDE	1541355520	Commercial	1
11151.01	ROAT-KRINER ROAT	1133 BLOOM RD.	1541286282	Commercial	1
11157.01	TRINITY METHODIST CHURCH	84 LOMBARD AVE	1018010545	Commercial	1
11159.01	VINTAGE KNOLLS ASSISTED LIVING	9 JUSTIN DR 101	1541313242	Commercial	1
11160.01	GEISINGER COMMUNITY HEALTH - VI	44 WOODBINE LANE	0048920994	Commercial	1
11165.01	RINEHART DENTAL	20 WESNER LANE	1481726108	Commercial	1
Total 1:					
10					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
11139.01	GEORGE HEIM CAR WASH	1802 MONTOUR BLVD	1541551330	Commercial	1.5
Total 1.5:					
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
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

+ 1 = 15 Wesner Lane
added 5/24/18

Total Meters
= 1186

Page 88

Appendix A-5.2 (Gannett Fleming)
Page 88 of 273
EXHIBIT 20

21. Second, Ms. Vicari used inconsistent purchase price values to calculate the average costs per customer. Id. at 21-22.

(a) Incorrect Use of Projected Customers

Ms. Vicari used an incorrect number of customers for MACM. In Appendix A-17-a, it states that MACM has 12,780 customers, yet Ms. Vicari used 21,953 customers. OCA St. 1 at 20-21. She explained that she used that number because she counted the individual connections for each bulk customer. Id. She never supplied her calculation of the individual connections for the four bulk customers. Id.

Ms. Vicari does not necessarily apply that logic to the other acquisitions in her sample group by reflecting individual connections for any bulk customers. OCA St. 1S at 16-17. By using the actual number of customers for the other systems, she achieved a higher average cost per customer. She then multiplied this overstated cost per customer times the unsupported number of bulk customers' individual connection, compounding the error. Ms. Everette was not able to confirm whether all of the customer numbers in Ms. Vicari's sample group were consistently counted. She therefore used the 21,953 customer number used by Ms. Vicari to minimize the issues in the proceeding.

(b) Inconsistent Purchase Price Values

Similar to the problem with the customer count, MACM witness Vicari did not use consistent purchase price values. OCA St. 1 at 21-22. For the comparative acquisitions, she used the purchase price plus the value of capital improvements required by the agreement of sale. For MACM, however, she uses only the purchase price and does not consider the \$62.7 million of capital investments that PAWC anticipates making over the next 10 years. Including the cost

McKeesport sewer system to be sold for \$156 million

September 16, 2016 12:00 AM

By Deana Carpenter

The Municipal Authority of the City of McKeesport has agreed to sell its sewer system to Pennsylvania American Water for approximately \$156 million.

The sale is needed to bring the city to more stable financial ground and avoid Act 47, the program for financially distressed municipalities, or municipal bankruptcy, McKeesport Mayor Michael Cherepko said at the Sept. 7 council meeting.

"It became very clear to this administration that the only way to save our community from municipal bankruptcy, while continuing to offer the same level of services our residents deserve, would be to transfer our local sewage system to a regional or national utility company," Mr. Cherepko said in a news release.

A purchase agreement was signed by both parties last Friday following votes by city council and the municipal authority to sell the sewer system. The sale is expected to be finalized in the second half of next year pending regulatory approvals and other closing conditions.

The system serves 22,000 customers in McKeesport and the communities of Dravosburg, Duquesne, East McKeesport, Elizabeth Township, Glassport, Liberty, Lincoln, North Versailles, Port Vue, Versailles and White Oak.

"We look forward to closing the proposed acquisition and to providing wastewater services that reflect our commitment to environmental stewardship and quality customer service," said

Kathy L. Pape, president of Pennsylvania American Water, said that after the deal is closed, the company looks forward "to welcoming the Municipal Authority of the City of McKeesport's employees and customers to the Pennsylvania American Water family."

She said the company also looks forward to "providing wastewater services that reflect our commitment to environmental stewardship and quality customer service."

The next step is approval of the acquisition by the Pennsylvania Public Utility Commission along with other approvals, such as from the state Department of Environmental Protection.

In June, state Auditor General Eugene DePasquale said McKeesport erred when it accidentally spent \$729,275 in state funds earmarked for pension costs and subsequently couldn't pay its \$2.3 million annual pension obligation last year.

McKeesport officials said then they would remedy the shortfall through "the sale of an asset in the near future."

"The total proceeds of the pending sale of the Municipal Authority of the City of McKeesport will solidify the City of McKeesport's financial position for years to come," Mr. Cherepko said this week. "The down payment associated with this

3/5/2019

East - Pittsburgh Post-Gazette

EXHIBIT 20

Appendix A-5.2 (Gannett Fleming)
sale will generate enough revenue to cover all of the city's outstanding financial obligations, including the minimum municipal obligations associated with the city's pension funds." Page 91 of 273

Deana Carpenter, freelance writer: suburbanliving@post-gazette.com.

EAST END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	2,070,000	2,060,000	1,831,000	2,284,000	2,971,000	2,665,000	1,498,000	1,278,000
CO2	739,000	1,050,000	885,000	793,000	1,028,000	1,061,000	873,000	873,000
IND								
MIX	15,000	9,000	10,000	4,000	17,000	14,000	12,000	18,000
RES	13,780,000	13,367,000	12,924,000	13,280,000	12,700,000	14,137,000	14,241,000	12,874,000
Grand Total	16,604,000	16,486,000	15,650,000	16,361,000	16,716,000	17,877,000	16,624,000	15,043,000

# DAYS	94	90	89	91	87	94	93	91
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Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	22,021	22,889	20,573	25,099	34,149	28,351	16,108	14,044
CO2	7,862	11,667	9,944	8,714	11,816	11,287	9,387	9,593
IND								
MIX	160	100	112	44	195	149	129	198
RES	146,596	148,522	145,213	145,934	145,977	150,394	153,129	141,473
Grand Total	176,638	183,178	175,843	179,791	192,138	190,181	178,753	165,308

Type	Total Units	Total Active Units	Total Accounts	Type	2015 Total	2014 Total
CO1	145	109	65	CO1	8,245,000	8,412,000
CO2	40	16	13	CO2	3,467,000	3,835,000
IND				IND		
MIX	8	7	3	MIX	38,000	61,000
RES	1,043	1012	823	RES	53,351,000	53,952,000
Grand Total	1,236	1,144	904	Grand Total	65,101,000	66,260,000

Service Area	Total Units	Total Active Units	Total Accounts
BP	290	282	107
BR	52	51	52
BW	99	90	56
CR	5	4	5
CW	110	109	110
EE	1		1
GL	132	110	70
HD	127	110	112
PD	31	31	31
PM	48	47	48
PS	66	66	66
SC	65	37	40
SH	132	132	132
SRO	2	2	2
WB	76	73	72
Grand Total	1,236	1,144	904

SOUTH END SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	163,000	68,000	33,000	27,000	277,000	265,000	28,000	25,000
RES	7,444,000	7,494,000	7,172,000	7,565,000	7,109,000	7,576,000	7,233,000	7,750,000
Grand Total	7,607,000	7,562,000	7,205,000	7,592,000	7,386,000	7,841,000	7,261,000	7,775,000

# DAYS	94	90	89	91	87	94	93	91
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Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	1,734	756	371	297	3,184	2,819	301	275
RES	79,191	83,267	80,584	83,132	81,713	80,596	77,774	85,165
Grand Total	80,926	84,022	80,955	83,429	84,897	83,415	78,075	85,440

Type	Total Units	Total Active Units	Total Accounts
CO1	6	2	2
RES	611	605	607
Grand Total	617	607	609

Type	2015 Total	2014 Total
CO1	291,000	595,000
RES	29,675,000	29,668,000
Grand Total	29,966,000	30,263,000

Service Area	Total Units	Total Active Units	Total Accounts
ES	178	174	174
HGN	129	125	125
HGS	30	29	30
MG	21	21	21
WS	259	258	259
Grand Total	617	607	609

AVONDALE SEWER ACCOUNTS SEWER ACCOUNTS

Type	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
CO1	2,833,000	3,044,000	2,895,000	3,014,000	2,844,000	2,681,000	2,598,000	2,992,000
CO2	191,000	208,000	235,000	228,000	224,000	195,000	192,000	179,000
MIX	301,000	312,000	255,000	273,000	227,000	258,000	276,000	332,000
RES	4,090,000	3,750,000	3,588,000	4,089,000	3,506,000	4,183,000	4,716,000	3,705,000
TWP	31,000	24,000	20,000	19,000	21,000	22,000	19,000	74,000
Grand Total	7,446,000	7,338,000	6,993,000	7,623,000	6,822,000	7,339,000	7,801,000	7,282,000

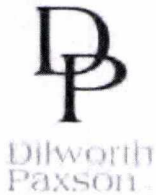
# DAYS	2015-4	2015-3	2015-2	2015-1	2014-4	2014-3	2014-2	2014-1
	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	2015-2 GPD	2015-1 GPD	2014-4 GPD	2014-3 GPD	2014-2 GPD	2014-1 GPD
CO1	30,138	33,822	32,528	33,121	32,690	28,521	27,935	32,879
CO2	2,032	2,311	2,640	2,505	2,575	2,074	2,065	1,967
MIX	3,202	3,467	2,865	3,000	2,609	2,745	2,968	3,648
RES	43,511	41,667	40,315	44,934	40,299	44,500	50,710	40,714
TWP	330	267	225	209	241	234	204	813
Grand Total	79,213	81,533	78,573	83,769	78,414	78,074	83,882	80,022

Type	Total Units	Total Active Units	Total Accounts
CO1	397	48	38
CO2	4	4	4
MIX	8	22	8
RES	306	282	230
TWP	3	3	3
Grand Total	718	359	283

Type	2015 Total	2014 Total
CO1	11,786,000	11,115,000
CO2	862,000	790,000
MIX	1,141,000	1,093,000
RES	15,517,000	16,110,000
TWP	94,000	136,000
Grand Total	29,400,000	29,244,000

Service Area	Total Units	Total Active Units	Total Accounts
41	308	76	46
BH	123	120	121
BH2	6	6	6
RR	130	119	79
TK	151	38	31
Grand Total	718	359	283



Home > News / Events > Press Releases > The PA PUC Approves First Wastewater Sale Under New Act 12

The PA PUC Approves First Wastewater Sale Under New Act 12

06/14/2017

June 14, 2017 (Philadelphia, PA) - On June 14, 2017, the Pennsylvania Public Utility Commission approved, in a four-to-one vote, Aqua Pennsylvania Wastewater, Inc.'s application to acquire the wastewater system of New Garden Township and its Sewer Authority, and to begin providing wastewater service to the residents of New Garden and Kennett Townships in Chester County. The transaction is the first to be approved using the fair market valuation approach established by the Pennsylvania State Legislature and Governor Tom Wolf with Act 12 of 2016 (Act of Apr. 14, 2016, P.L. 76, No. 12, 66 Pa. C.S. § 1329).

Act 12 is changing the landscape for municipal sales of water and wastewater systems to PUC-regulated public utility companies. The new law allows the parties to the transaction to opt in to a new method of valuation, which takes the value of the system for ratemaking purposes as either the lower of the average of two independent fair market value appraisals—one obtained by the utility buyer and one by the municipal seller—or by the negotiated purchase price. Prior to Act 12, system value for ratemaking was based on depreciated original cost, which would likely always result in a lower sale price than fair market value. In addition, the new law requires the PUC to act within six months of the acceptance of the application.

Act 12 became effective mid-June 2016, and the PUC issued its final implementation order in October 2016. The New Garden transaction was the first Act 12 application, submitted for approval in December 2016. Aqua, New Garden, and the Authority agreed to a negotiated purchase price of \$29,500,000, which turned out to be less than the average of the two appraisals commissioned by Aqua and New Garden. The valuation for ratemaking purposes was therefore set at \$29,500,000.

A protest to Aqua's application for PUC approval pursuant to Act 12 in the New Garden transaction was filed by the Bureau of Investigation and Enforcement, which sought a review of both of the fair market appraisals used, additional information about the proposed rate freeze agreed to by the parties, and a determination of whether the transaction was in the public interest under Section 1102 of the Public Utility Code.

An additional protest was filed by the Office of Consumer Advocates requesting further information to determine whether supplementary conditions should be imposed on the transaction to ensure that Aqua's existing customers are treated in a fair and just manner; how the transaction will substantially and affirmatively benefit Aqua's existing customers; and whether the agreement sufficiently provides for safe, adequate, and reasonable service at just and reasonable rates.

An evidentiary hearing was held before an administrative law judge on February 16, 2017. After the hearing, the judge recommended the denial of Aqua's application, concluding that Aqua had failed to demonstrate by a preponderance of the evidence that the acquisition was in the public interest because it failed to demonstrate that the transaction will result in affirmative public benefits to its existing customers. The judge also concluded that Aqua had failed to support its rate stabilization plan with evidence to show its basis and impact. The judge did

Related Lawyers

Skye C.A. Nickalls

Marc A. Feller

Related Practices

Corporate and Business

Related Offices

Philadelphia, PA

1 invest in necessary capital improvements and resources, and experienced managerial and
2 operating personnel necessary to provide safe and reliable sewer services to the residents of
3 the TOS and surrounding areas. PAWC is currently the water provider within TOS and is
4 the operator of TOS's System pump station.

5

6 **Q. PLEASE DESCRIBE PAWC'S HISTORICAL RELATIONSHIP WITH TOS.**

7 A. Since PAWC's acquisition of the water and wastewater assets of the City of Coatesville
8 Authority ("CCA") in March 2001, PAWC has been the regional wastewater (and water)
9 provider in the City of Coatesville and surrounding communities. . PAWC's treats the
10 wastewater from the communities of Sadsbury Township, City of Coatesville, East
11 Fallowfield Township, Caln Township, West Caln Township, Valley Township, West
12 Sadsbury Township, Highland Township, West Brandywine Township and Parksburg
13 Borough. TOS has been a bulk wastewater customer of PAWC since PAWC's acquisition
14 of CCA's water and wastewater system assets. We maintain a relationship with TOS and
15 other local municipalities by participating in local events, providing environmental and
16 firefighting grants, offering the "H2O Assistance Program," and supporting economic
17 growth through infrastructure improvements in the communities we serve.

18

19 **Q. HOW MANY CUSTOMERS DOES THE TOS SYSTEM CURRENTLY SERVE**
20 **AND HOW MANY CUSTOMERS DOES PAWC CURRENTLY SERVE?**

21 A. As of December 31, 2016, TOS furnished wastewater services to 998 customers. This
22 number includes 950 residential and 48 commercial customer connections. Of these

1 interest in discussing the potential acquisition of the System and the use of Section 1329,
2 the fair market value approach. TOS's representatives executed the Letter of Interest on
3 December 6 and 7, 2016 and returned it to PAWC. This "Letter of Interest" was extended
4 through amendments on March 9, 2017, May 2, 2017, June 6, 2017, and July 5, 2017 to
5 allow the parties to enter into a definitive agreement. Through these extensions, PAWC
6 and TOS jointly retained the services of Herbert E. MacCombie, Jr., P.E., of Media
7 Pennsylvania to complete the Engineer's Assessment of Tangible Assets pursuant to
8 Section 1329. The Engineer's Assessment of Tangible Assets is included as **Schedule 1.1**
9 of the APA and included with the UVE fair market valuation reports at **Appendix A-5**.
10 PAWC, pursuant to Section 1329, retained the services of AUS Consultants of Greenfield
11 Wisconsin to complete an appraisal of the System. TOS retained the services of Herbert,
12 Rowland & Grubic, Inc. of Harrisburg, Pennsylvania to also complete an appraisal of the
13 System. These appraisals accompany the Application at **Appendix A-5** (together with
14 electronic working documents at **Appendix A-4**) and are included as **Schedule 2.2** of the
15 APA. After receipt of the two appraisals and subsequent arms-length negotiations, on May
16 1, 2018 TOS's Board of Supervisors approved the APA, which was subsequently executed
17 by PAWC and TOS that day too. This APA includes a negotiated purchase price of
18 \$9,250,000.

19
20 **Q. CAN YOU PLEASE PROVIDE AN OVERVIEW OF THE APA?**

21 **A.** Yes. The APA is attached as **Appendix A-24-a** to the Application (**PAWC Exhibit KEG-**
22 **1**). The APA sets forth the terms and conditions pursuant to which the TOS will sell, and
23 PAWC will purchase, the System, as well as substantially all assets, properties and rights

Elizabeth Rose Triscari, Esquire
Pennsylvania-American Water Company
800 West Hersheypark Drive
Hershey, PA 17033
(717) 520-4606
elizabeth.triscari@amwater.com

The Applicant's attorneys are authorized to receive all notices and communications regarding this Application.

6. PAWC is a regulated public utility corporation duly organized and existing under the laws of the Commonwealth of Pennsylvania, and is engaged in the business of collecting, treating, storing, supplying, distributing and selling water to the public, and collecting, treating, transporting and disposing of wastewater for the public. Water and wastewater services are furnished by PAWC to the public in a service territory encompassing more than 400 communities across the Commonwealth with a combined population of over 2,400,000. A description of PAWC's existing certificated water and wastewater service territory is found in **Appendix B**, along with a detailed corporate history, outlining all of the mergers, acquisitions and consolidations, which have created PAWC as it exists on the date of this Application.

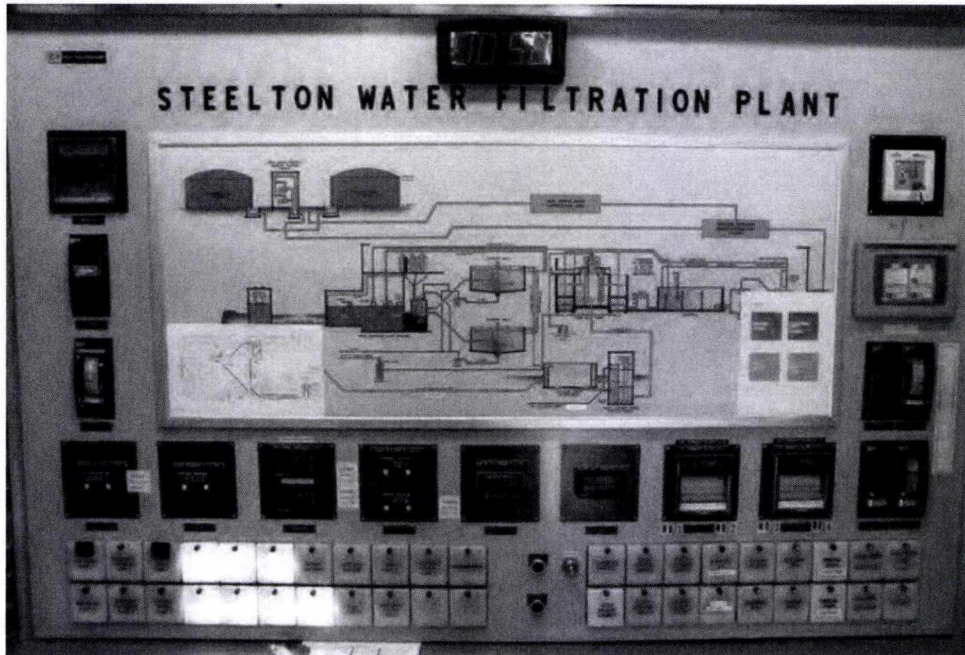
7. Steelton is a municipal water authority, organized by the Borough of Steelton in accordance with the Municipality Authorities Act, 53 Pa. C.S. §5601, et seq., with its offices located at 123 North Front Street, Steelton, Pennsylvania. Steelton owns and operates the Steelton System, providing water service to the public in the Borough of Steelton and a portion of Swatara Township (the "Service Area"), in Dauphin County, Pennsylvania.

8. As of November 30, 2018, Steelton furnishes water service to 2,472 customers including 2,289 residential, 124 commercial, 13 industrial, 34 institutional, 11 municipal, and one bulk sales customer connection.

PENNSYLVANIA REAL-TIME NEWS

Steelton water sale closer to completion as Pa. American Water signs \$22.5 million agreement

Updated Nov 15, 2018;
Posted Nov 15, 2018



Pennsylvania American Water announced today it signed an agreement to acquire the water assets of the Steelton Borough Authority. Pending regulatory approvals, the sale should be complete by the third quarter of 2019.

1

8
shares

By [Steve Marroni | smarroni@pennlive.com](#)

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.



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Consensus Forecast of U.S. Interest Rates and Key Assumptions

Interest Rates	History								Consensus Forecasts-Quarterly Avg.						
	Average For Week Ending				Average For Month				Latest Qtr	1Q	2Q	3Q	4Q	1Q	2Q
	Feb 21	Feb 14	Feb 7	Jan 31	Jan	Dec	Nov	4Q 2019	2020	2020	2020	2020	2021	2021	
Federal Funds Rate	1.58	1.58	1.59	1.55	1.55	1.55	1.55	1.64	1.6	1.6	1.5	1.5	1.5	1.5	
Prime Rate	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.83	4.8	4.7	4.6	4.6	4.6	4.6	
LIBOR, 3-mo.	1.69	1.70	1.74	1.77	1.82	1.91	1.90	1.93	1.8	1.7	1.7	1.7	1.7	1.7	
Commercial Paper, 1-mo.	1.55	1.55	1.56	1.56	1.56	1.62	1.62	1.70	1.6	1.6	1.6	1.5	1.6	1.6	
Treasury bill, 3-mo.	1.58	1.58	1.57	1.56	1.55	1.57	1.57	1.61	1.6	1.5	1.5	1.4	1.5	1.5	
Treasury bill, 6-mo.	1.55	1.56	1.57	1.57	1.56	1.58	1.59	1.61	1.6	1.5	1.5	1.5	1.5	1.5	
Treasury bill, 1 yr.	1.46	1.48	1.49	1.50	1.53	1.55	1.57	1.58	1.5	1.5	1.5	1.5	1.6	1.6	
Treasury note, 2 yr.	1.39	1.42	1.41	1.41	1.52	1.61	1.61	1.59	1.5	1.5	1.5	1.6	1.6	1.7	
Treasury note, 5 yr.	1.37	1.42	1.42	1.41	1.56	1.68	1.64	1.62	1.5	1.5	1.6	1.7	1.7	1.8	
Treasury note, 10 yr.	1.52	1.59	1.61	1.59	1.76	1.86	1.81	1.79	1.7	1.7	1.8	1.9	1.9	2.0	
Treasury note, 30 yr.	1.97	2.06	2.08	2.05	2.22	2.30	2.28	2.26	2.1	2.2	2.3	2.4	2.4	2.5	
Corporate Aaa bond	2.84	2.90	2.93	2.91	3.04	3.12	3.16	3.13	2.9	3.0	3.2	3.3	3.4	3.4	
Corporate Baa bond	3.48	3.53	3.57	3.54	3.66	3.78	3.86	3.83	3.8	3.9	4.1	4.2	4.3	4.3	
State & Local bonds	2.93	2.96	2.97	2.93	3.00	3.10	3.15	3.13	2.6	2.8	2.9	3.0	3.1	3.1	
Home mortgage rate	3.49	3.47	3.45	3.51	3.62	3.72	3.70	3.70	3.5	3.6	3.7	3.7	3.8	3.8	
	History								Consensus Forecasts-Quarterly						
Key Assumptions	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	
	2018	2018	2018	2018	2019	2019	2019	2019	2020	2020	2020	2020	2021	2021	
Fed's AFE Index	102.9	105.5	107.8	109.4	109.4	110.3	110.5	110.3	110.9	110.5	109.9	109.2	109.2	108.9	
Real GDP	2.5	3.5	2.9	1.1	3.1	2.0	2.1	2.1	1.4	1.8	1.9	2.1	2.0	2.0	
GDP Price Index	2.3	3.2	2.0	1.6	1.1	2.4	1.8	1.4	1.8	1.9	1.9	1.9	2.0	2.0	
Consumer Price Index	3.2	2.2	2.1	1.3	0.9	3.0	1.8	2.4	1.8	1.9	2.1	2.0	2.1	2.1	

Blue Chip Financial Forecasts, March 1, 2020. Copyright © 2020 CCH Incorporated. All Rights Reserved.

NetPlant Advances CIAC DefTax ITC

	2019 Net Property, Plant & Equipment	Advances for construction	Contributions in aid of construction	Deferred income taxes, net	Deferred investment tax credits	2019 Known "Cost Free" Capital	2019 Percentage of Known "Cost Free" Capital
	(Millions of \$)						
<u>Comparable Group</u>							
1 American States Water Co	\$1,415.705	\$63.989	\$134.706	\$127.806	\$1.295	\$327.796	23%
2 American Water Works Co Inc	\$18,232.000	\$240.000	\$1,355.000	\$1,893.000	\$0.000	\$3,488.000	19%
3 Aqua America Inc	\$6,345.790	\$95.556	\$555.526	\$936.158	\$0.000	\$1,587.240	25%
4 Artesian Resources -CL A	\$534.533	\$5.421	\$149.479	\$52.259	\$0.490	\$207.649	39%
5 California Water Service Gp	\$2,406.370	\$191.062	\$241.537	\$222.590	\$1.575	\$656.764	27%
6 Middlesex Water Co	\$705.730	\$23.905	\$97.830	\$54.408	\$0.000	\$176.143	25%
7 SJW Corp	\$2,250.588	\$112.339	\$286.035	\$195.598	\$0.000	\$593.972	26%
8 York Water Co	\$313.993	\$7.844	\$40.029	\$40.426	\$0.000	\$88.299	28%
Median							26%

CONSOLIDATED BALANCE SHEETS - USD (\$)'s in Thousands	Dec. 31, 2019	Dec. 31, 2018
Regulated utility plant, at cost		
Water	\$ 1,700,442	\$ 1,649,535
Electric	108,425	106,064
Total	1,808,867	1,755,599
Non-regulated utility property, at cost	30,554	24,511
Total utility plant, at cost	1,839,421	1,780,110
Less — accumulated depreciation	(543,263)	(561,855)
Utility plant before construction work in progress	1,296,158	1,218,255
Construction work in progress	119,547	78,055
Net utility plant	1,415,705	1,296,310
Other Property and Investments		
Goodwill	1,116	1,116
Other property and investments	30,293	25,356
Total other property and investments	31,409	26,472
Current Assets		
Cash and cash equivalents	1,334	7,141
Accounts receivable — customers, less allowance for doubtful accounts	20,907	23,395
Unbilled revenue — receivable	20,482	23,588
Receivable from U.S. government, less allowance for doubtful accounts (Note 2)	22,613	21,543
Other accounts receivable, less allowance for doubtful accounts	3,096	3,103
Income taxes receivable	5,685	2,164
Materials and supplies	6,429	5,775
Regulatory assets — current	20,930	16,527
Prepayments and other current assets	5,413	6,063
Contract assets (Note 2)	15,567	22,169
Total current assets	122,456	131,468
Regulatory and Other Assets		
Unbilled revenue, receivable from U.S. government	8,621	0
Receivable from U.S. government (Note 2)	42,206	39,583
Contract assets (Note 2)	64	2,278
Operating lease right-of-use assets	13,168	0
Other	7,702	5,322
Total other assets	71,761	47,183
Total Assets	1,641,331	1,501,433
Capitalization		
Common shareholder's equity	601,530	558,223
Long-term debt	280,996	281,087
Total capitalization	882,526	839,310
Current Liabilities		
Notes payable to banks	5,000	0
Long-term debt — current	344	40,320
Accounts payable	55,616	58,532
Income taxes payable	95	360
Accrued other taxes	11,110	10,094
Accrued employee expenses	14,255	13,842
Accrued interest	3,050	3,865
Unrealized loss on purchased power contracts	3,171	911
Contract liabilities (Note 2)	11,167	7,530
Operating lease liabilities	1,849	0
Other	10,341	10,731
Total current liabilities	115,998	146,585
Other Credits		
Notes payable to banks	200,000	95,500
Advances for construction	63,989	66,305
Contributions in aid of construction — net	134,706	124,385
Deferred income taxes	125,304	114,216
Regulatory liabilities	23,380	44,867
Unamortized investment tax credits	1,295	1,367
Accrued pension and other post-retirement benefits	68,469	57,636
Operating lease liabilities	11,739	0
Other	13,925	11,262
Total other credits	642,807	515,538
Commitments and Contingencies	0	0
Total Capitalization and Liabilities	1,641,331	1,501,433
Regulated utility plant, at cost		
Water	1,700,442	1,649,535
Electric	108,425	106,064
Total utility plant, at cost	1,808,867	1,755,599
Less — accumulated depreciation	(531,801)	(551,244)
Utility plant before construction work in progress	1,277,066	1,204,355
Construction work in progress	117,676	76,737
Net utility plant	1,394,742	1,281,092
Other Property and Investments		
Other property and investments	28,212	23,263
Total other property and investments	28,212	23,263
Current Assets		
Cash and cash equivalents	401	4,187
Accounts receivable — customers, less allowance for doubtful accounts	20,907	23,395
Unbilled revenue — receivable	18,636	17,892
Other accounts receivable, less allowance for doubtful accounts	1,857	1,959
Income taxes receivable	7,727	5,617
Materials and supplies	4,920	4,797
Regulatory assets — current	20,930	16,527
Prepayments and other current assets	4,497	5,275
Total current assets	79,875	79,649
Regulatory and Other Assets		
Operating lease right-of-use assets	12,745	0
Other	6,880	5,218
Total other assets	19,625	5,218
Total Assets	1,522,454	1,389,222
Capitalization		
Common shareholder's equity	551,188	503,575
Long-term debt	280,996	281,087
Total capitalization	832,184	784,662
Current Liabilities		
Intercompany payable to Parent	158,845	0
Long-term debt — current	344	40,320
Accounts payable	45,756	47,865
Accrued other taxes	10,640	9,911
Accrued employee expenses	12,386	11,910
Accrued interest	2,736	3,550
Unrealized loss on purchased power contracts	3,171	311
Operating lease liabilities	1,612	0
Other	9,745	9,432
Total current liabilities	245,235	123,299
Other Credits		
Inter-company payable to Parent	0	57,289
Advances for construction	63,989	66,305
Contributions in aid of construction — net	134,706	124,385
Deferred income taxes	127,806	118,241
Regulatory liabilities	23,380	44,867
Unamortized investment tax credits	1,295	1,367
Accrued pension and other post-retirement benefits	68,469	57,636
Operating lease liabilities	11,588	0
Other	13,802	11,171
Total other credits	445,035	481,261
Total Capitalization and Liabilities	\$ 1,522,454	\$ 1,389,222
NetPlant	1,415,705	1,296,310
Advances	63,989	66,305
CIAC	134,706	124,385
Deffax	127,806	118,241
ITC	1,295	1,367

Consolidated Balance Sheets - USD (\$) \$ in Millions	Dec. 31, 2019	Dec. 31, 2018
ASSETS		
Property, plant and equipment	\$ 23,941	\$ 23,204
Accumulated depreciation	(5,709)	(5,795)
Property, plant and equipment, net	18,232	17,409
Current assets:		
Cash and cash equivalents	60	130
Restricted funds	31	28
Accounts receivable, net	294	301
Unbilled revenues	172	186
Materials and supplies	44	41
Assets held for sale	566	0
Other	118	95
Total current assets	1,285	781
Regulatory and other long-term assets:		
Regulatory assets	1,128	1,156
Operating lease right-of-use assets	103	
Goodwill	1,501	1,575
Postretirement benefit asset	159	155
Intangible assets	67	84
Other	207	63
Total regulatory and other long-term assets	3,165	3,033
Total assets	22,682	21,223
Capitalization:		
Common stock (\$0.01 par value, 500,000,000 shares authorized, 185,903,727 and 185,367,158 shares issued, respectively)	2	2
Paid-in-capital	6,700	6,657
Accumulated deficit	(207)	(464)
Accumulated other comprehensive loss	(36)	(34)
Treasury stock, at cost (5,090,855 and 4,683,156 shares, respectively)	(338)	(297)
Total common shareholders' equity	6,121	5,864
Long-term debt	8,639	7,569
Redeemable preferred stock at redemption value	5	7
Total long-term debt	8,644	7,576
Total capitalization	14,765	13,440
Current liabilities:		
Short-term debt	786	964
Current portion of long-term debt	28	71
Accounts payable	203	175
Accrued liabilities	596	556
Accrued taxes	46	45
Accrued interest	84	87
Liabilities related to assets held for sale	128	0
Other	174	196
Total current liabilities	2,045	2,094
Regulatory and other long-term liabilities:		
Advances for construction	240	252
Deferred income taxes and investment tax credits	1,893	1,740
Regulatory liabilities	1,806	1,907
Operating lease liabilities	89	
Accrued pension expense	411	390
Other	78	78
Total regulatory and other long-term liabilities	4,517	4,367
Contributions in aid of construction	1,355	1,322
Commitments and contingencies (See Note 16)		
Total capitalization and liabilities	\$ 22,682	\$ 21,223
	NetPlant	18,232
	Advances	240
	CIAC	1,355
	DefTax	1,893
	ITC	0
		17,409
		252
		1,322
		1,740
		0

Consolidated Balance Sheets - USD (\$) \$ in Thousands	Dec. 31, 2019	Dec. 31, 2018
Assets		
Property, plant and equipment, at cost	\$ 8,201,936	\$ 7,648,469
Less: accumulated depreciation	1,856,146	1,718,143
Net property, plant and equipment	6,345,790	5,930,326
Current assets:		
Cash and cash equivalents	1,868,922	3,627
Accounts receivable, net	67,137	65,825
Unbilled revenues	40,483	35,400
Inventory, materials and supplies	18,379	15,844
Prepayments and other current assets	16,259	23,337
Assets held for sale	1,558	3,139
Total current assets	2,012,738	147,172
Regulatory assets	878,132	788,076
Deferred charges and other assets, net	42,652	39,237
Investment in joint venture	5,984	6,959
Goodwill	63,822	52,726
Operating lease right-of-use assets	12,867	
Total assets	9,361,985	6,964,496
Essential Utilities stockholders' equity:		
Common stock at \$0.50 par value, authorized 300,000,000 shares, issued 223,871,	111,935	90,576
Capital in excess of par value	2,636,555	820,378
Retained earnings	1,210,072	1,174,245
Treasury stock, at cost, 3,112,565 and 3,060,206 shares as of December 31, 2019	(77,702)	(75,835)
Accumulated other comprehensive income		
Total stockholders' equity	3,880,860	2,009,364
Long-term debt, excluding current portion	2,972,349	2,419,115
Less: debt issuance costs	29,022	20,651
Long-term debt, excluding current portion, net of debt issuance costs	2,943,327	2,398,464
Commitments and contingencies (See Note 9)		
Current liabilities:		
Current portion of long-term debt	105,051	144,545
Loans payable	25,724	15,449
Accounts payable	74,919	77,331
Book overdraft	10,944	8,950
Accrued interest	29,818	23,300
Accrued taxes	22,775	22,234
Interest rate swap agreements		59,779
Other accrued liabilities	49,618	47,389
Total current liabilities	318,849	398,977
Deferred credits and other liabilities:		
Deferred income taxes and investment tax credits	936,158	845,403
Customers' advances for construction	95,556	93,343
Regulatory liabilities	517,599	531,027
Operating lease liabilities	11,645	
Other	102,465	97,182
Total deferred credits and other liabilities	1,663,423	1,566,955
Contributions in aid of construction	555,526	590,736
Total liabilities and equity	\$ 9,361,985	\$ 6,964,496
NetPlant	6,345,790	5,930,326
Advances	95,556	93,343
CIAC	555,526	590,736
DefTax	936,158	845,403
ITC	0	0

CONSOLIDATED BALANCE SHEETS - USD (\$) \$ in Thousands	Dec. 31, 2019	Dec. 31, 2018
ASSETS		
Utility plant, at original cost (less accumulated depreciation - 2019 - \$136,588; 2018 - \$126,114)	\$ 530,721	\$ 498,678
Current assets		
Cash and cash equivalents	596	293
Accounts receivable (less allowance for doubtful accounts 2019 - \$264; 2018-\$232)	6,913	8,159
Income tax receivable	19	772
Unbilled operating revenues	1,211	1,441
Materials and supplies	1,264	1,459
Prepaid property taxes	1,954	1,870
Prepaid expenses and other	2,250	2,124
Total current assets	14,207	16,118
Other assets		
Non-utility property (less accumulated depreciation - 2019- \$790; 2018 - \$734)	3,812	3,849
Other deferred assets	4,257	3,931
Operating lease right of use asset	480	0
Total other assets	8,549	7,780
Regulatory assets, net	6,891	7,254
Total assets	560,368	529,830
Stockholders' equity		
Common stock	9,292	9,250
Preferred stock	0	0
Additional paid-in capital	101,811	100,639
Retained earnings	49,165	43,362
Total stockholders' equity	160,268	153,251
Long-term debt, net of current portion	144,156	115,862
Total stockholders' equity and long-term debt	304,424	269,113
Current liabilities		
Lines of credit	7,500	15,942
Current portion of long-term debt	1,706	1,725
Accounts payable	8,176	8,187
Accrued expenses	3,113	3,902
Overdraft payable	15	117
Accrued interest	830	784
Income taxes payable	343	0
Customer and other deposits	1,970	1,850
Revenue reserve for refund	0	3,298
OtherLiabilitiesCurrent	1,946	1,926
Total current liabilities	25,599	37,731
Commitments and contingencies (Note 12)		
Deferred credits and other liabilities		
Net advances for construction	5,421	6,596
OperatingLeaseLiabilityNoncurrent	450	0
Regulatory liabilities	22,246	22,813
Deferred investment tax credits	490	508
Deferred income taxes	52,259	55,054
Total deferred credits and other liabilities	80,866	84,971
Net contributions in aid of construction	149,479	138,015
Total Liabilities and Stockholders' Equity	\$ 560,368	\$ 529,830
	NetPlant	534,533
	Advances	5,421
	CIAC	149,479
	DefTax	52,259
	ITC	490
		502,527
		6,596
		138,015
		55,054
		508

Consolidated Balance Sheets - USD (\$) \$ in Thousands	Dec. 31, 2019	Dec. 31, 2018
Utility plant:		
Land	\$ 45,047	\$ 44,019
Depreciable plant and equipment	3,235,415	2,950,424
Construction work in progress	245,169	210,260
Intangible assets	24,854	24,743
Total utility plant	3,550,485	3,229,446
Less accumulated depreciation and amortization	(1,144,115)	(996,723)
Net utility plant	2,406,370	2,232,723
Current assets:		
Cash and cash equivalents	42,653	47,176
Receivables: net of allowance for doubtful accounts of \$771 and \$757 in 2019 and 2018, respectively		
Customers	32,058	30,037
Regulatory balancing accounts	38,225	42,394
Other	14,187	17,101
Unbilled revenue	34,879	33,427
Materials and supplies at weighted average cost	7,745	6,586
Taxes, prepaid expenses, and other assets	14,965	11,981
Total current assets	184,712	188,702
Other assets:		
Regulatory assets	433,322	353,569
Goodwill	2,615	2,615
Other	84,289	60,095
Total other assets	520,226	416,279
TOTAL ASSETS	3,111,308	2,837,704
Capitalization:		
Common stock, \$0.01 par value; 68,000 shares authorized, 48,532 and 48,065 outstanding i	485	481
Additional paid-in capital	362,275	337,623
Retained earnings	417,146	392,053
Total common stockholders' equity	779,906	730,157
Long-term debt, net	786,754	710,027
Total capitalization	1,566,660	1,440,184
Current liabilities:		
Current maturities of long-term debt, net	21,868	104,911
Short-term borrowings	175,100	65,100
Accounts payable	108,463	95,580
Regulatory balancing accounts	4,462	12,213
Accrued other taxes	4,445	4,182
Accrued interest	5,810	5,674
Other accrued liabilities	38,573	33,506
Total current liabilities	358,721	321,166
Unamortized investment tax credits	1,575	1,649
Deferred income taxes	222,590	213,033
Regulatory liabilities	211,413	211,275
Pension and postretirement benefits other than pensions	258,907	193,538
Advances for construction	191,062	186,342
Contributions in aid of construction	241,537	225,270
Other long-term liabilities	58,843	45,247
Commitments and contingencies		
TOTAL CAPITALIZATION AND LIABILITIES	\$ 3,111,308	\$ 2,837,704
	NetPlant	2,406,370
	Advances	191,062
	CIAC	241,537
	DefTax	222,590
	ITC	1,575
		2,232,723
		186,342
		225,270
		213,033
		1,649

CONSOLIDATED BALANCE SHEETS - USD (\$) \$ in Thousands	Dec. 31, 2019	Dec. 31, 2018
UTILITY PLANT:		
Water Production	\$ 160,870	\$ 156,423
Transmission and Distribution	556,517	512,202
General	83,043	74,371
Construction Work in Progress	75,520	32,878
TOTAL	875,950	775,874
Less Accumulated Depreciation	170,220	157,387
UTILITY PLANT - NET	705,730	618,487
CURRENT ASSETS:		
Cash and Cash Equivalents	2,230	3,705
Accounts Receivable, net	11,908	11,762
Unbilled Revenues	7,183	7,293
Materials and Supplies (at average cost)	5,445	5,411
Prepayments	2,367	2,644
TOTAL CURRENT ASSETS	29,133	30,815
Operating Lease Right of Use Asset	5,944	
Preliminary Survey and Investigation Charges	2,054	5,254
Regulatory Assets	110,479	99,236
Restricted Cash	44,269	1,956
Non-utility Assets - Net	10,370	9,989
Other	1,899	2,093
TOTAL DEFERRED CHARGES AND OTHER ASSETS	175,015	118,528
TOTAL ASSETS	909,878	767,830
CAPITALIZATION:		
Common Stock, No Par Value	215,125	157,354
Retained Earnings	108,667	91,433
TOTAL COMMON EQUITY	323,792	248,787
Preferred Stock	2,084	2,433
Long-term Debt	230,777	152,851
TOTAL CAPITALIZATION	556,653	404,071
CURRENT LIABILITIES:		
Current Portion of Long-term Debt	7,178	7,343
Notes Payable	20,000	48,500
Accounts Payable	23,306	19,325
Accrued Taxes	7,635	14,230
Accrued Interest	2,031	1,289
Unearned Revenues and Advanced Service Fees	1,211	1,036
Other	3,620	2,640
TOTAL CURRENT LIABILITIES	64,981	94,363
DEFERRED CREDITS AND OTHER LIABILITIES:		
Customer Advances for Construction	23,905	22,572
Lease Obligations	5,732	
Accumulated Deferred Income Taxes	54,408	47,270
Employee Benefit Plans	34,671	30,661
Regulatory Liabilities	69,152	79,112
Other	2,546	2,730
TOTAL DEFERRED CREDITS AND OTHER LIABILITIES	190,414	182,345
CONTRIBUTIONS IN AID OF CONSTRUCTION	97,830	87,051
TOTAL CAPITALIZATION AND LIABILITIES	\$ 909,878	\$ 767,830
NetPlant	705,730	618,487
Advances	23,905	22,572
CIAC	97,830	87,051
DefTax	54,408	47,270
ITC	0	0

Consolidated Balance Sheets - USD (\$)	Dec. 31, 2019	Dec. 31, 2018
Utility plant:		
Land	\$ 34,395,000	\$ 18,296,000
Depreciable plant and equipment	2,988,454,000	1,833,051,000
Construction in progress	112,232,000	68,765,000
Intangible assets	33,424,000	15,799,000
Property, Plant and Equipment, Gross	3,168,505,000	1,935,911,000
Less accumulated depreciation and amortization	962,019,000	607,090,000
Public Utilities, Property, Plant and Equipment, Net	2,206,486,000	1,328,821,000
Real estate investments	57,699,000	56,336,000
Less accumulated depreciation and amortization	13,597,000	12,327,000
Property, Plant and Equipment, Net	44,102,000	44,009,000
Current assets:		
Cash	12,944,000	8,722,000
Restricted fund	5,000,000	0
Money market fund	0	412,000,000
Accounts receivable:		
Customers, net of allowances for uncollectible accounts of \$1,512 and \$	36,305,000	19,154,000
Income tax	8,837,000	1,888,000
Other	2,833,000	1,203,000
Accrued unbilled utility revenue	40,102,000	27,974,000
Current regulatory assets, net	6,472,000	26,910,000
Other current assets	9,553,000	4,871,000
Assets, Current	122,046,000	502,722,000
Other assets:		
Net regulatory assets, less current portion	113,945,000	76,715,000
Investments	12,928,000	0
Goodwill	628,287,000	1,680,000
Other	4,676,000	2,442,000
Assets, Noncurrent	759,836,000	80,837,000
Assets	3,132,470,000	1,956,389,000
Stockholders' equity:		
Common stock, \$0.001 par value; authorized 70,000,000 shares in 2019	28,000	28,000
Additional paid-in capital	506,639,000	495,366,000
Retained earnings	383,191,000	393,918,000
Accumulated other comprehensive income	126,000	0
Total stockholders' equity	889,984,000	889,312,000
Long-term debt, less current portion	1,283,597,000	431,424,000
Capitalization, Long-term Debt and Equity	2,173,581,000	1,320,736,000
Current liabilities:		
Lines of credit	117,209,000	100,000,000
Current portion of long-term debt	22,272,000	0
Accrued groundwater extraction charges, purchased water and power	17,211,000	13,694,000
Accounts payable	34,886,000	24,937,000
Accrued interest	13,140,000	7,132,000
Accrued property taxes and other non-income taxes	2,039,000	1,926,000
Accrued payroll	11,570,000	7,181,000
Other current liabilities	16,240,000	9,115,000
Liabilities, Current	234,567,000	163,985,000
Deferred income taxes	195,598,000	79,651,000
Advances for construction	112,339,000	80,610,000
Contributions in aid of construction	286,035,000	168,243,000
Postretirement benefit plans	108,044,000	70,490,000
Regulatory liabilities, net	0	59,149,000
Other noncurrent liabilities	22,306,000	13,525,000
Commitments and contingencies	0	0
Liabilities and Equity	\$ 3,132,470,000	\$ 1,956,389,000
NetPlant	2,250,588,000	1,372,830,000
Advances	112,339,000	80,610,000
CIAC	286,035,000	168,243,000
DefTax	195,598,000	79,651,000
ITC	0	0

Balance Sheets - USD (\$) \$ in Thousands	Dec. 31, 2019	Dec. 31, 2018
ASSETS		
UTILITY PLANT, at original cost	\$ 401,383	\$ 380,784
Plant acquisition adjustments	(3,318)	(3,108)
Accumulated depreciation	(84,841)	(78,519)
Net utility plant	313,224	299,157
OTHER PHYSICAL PROPERTY, net of accumulated depreciation of \$435 in 2019 and \$410 in 2018	769	714
CURRENT ASSETS:		
Cash and cash equivalents	2	2
Accounts receivable, net of reserves of \$305 in 2019 and \$305 in 2018	4,421	4,811
Unbilled revenues	2,276	2,427
Recoverable income taxes	547	0
Materials and supplies inventories, at cost	1,007	876
Prepaid expenses	1,131	895
Total current assets	9,384	9,011
OTHER LONG-TERM ASSETS:		
Note receivable	255	255
Deferred regulatory assets	34,189	32,353
Other assets	5,708	3,650
Total other long-term assets	40,152	36,258
Total Assets	363,529	345,140
COMMON STOCKHOLDERS' EQUITY:		
Common stock, no par value, authorized 46,500,000 shares, issued and outstanding 13,014,898 shares in 2019 and 12,9	83,976	81,305
Retained earnings	50,209	44,890
Total common stockholders' equity	134,185	126,195
PREFERRED STOCK, authorized 500,000 shares, no shares issued	0	0
LONG-TERM DEBT, excluding current portion	94,535	93,328
COMMITMENTS		
CURRENT LIABILITIES:		
Short-term borrowings	0	1,000
Current portion of long-term debt	6,500	30
Accounts payable	3,452	3,030
Dividends payable	2,096	1,999
Accrued compensation and benefits	1,247	1,191
Accrued income taxes	0	150
Accrued interest	914	992
Deferred regulatory liabilities	609	2,104
Other accrued expenses	338	345
Total current liabilities	15,156	10,841
DEFERRED CREDITS:		
Customers' advances for construction	7,844	6,849
Deferred income taxes	40,426	36,962
Deferred employee benefits	4,317	4,715
Deferred regulatory liabilities	24,790	24,710
Other deferred credits	2,247	1,815
Total deferred credits	79,624	75,051
Contributions in aid of construction	40,029	39,725
Total Stockholders' Equity and Liabilities	\$ 363,529	\$ 345,140
	NetPlant	313,993
	Advances	7,844
	CIAC	40,029
	DefTax	40,426
	ITC	0
		299,871
		6,849
		39,725
		36,962
		0

CPI for All Urban Consumers (CPI-U)

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
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										



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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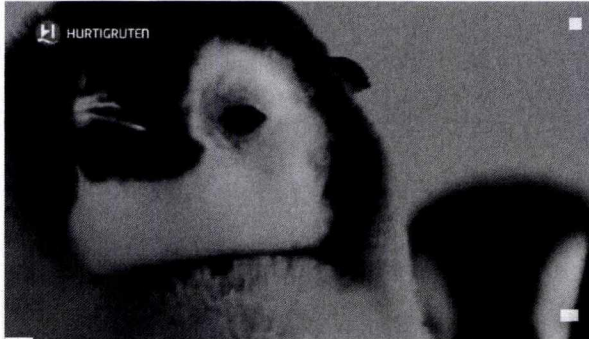
To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase (JPM.N). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

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.



RBS sounds alarm over Brexit

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.

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

[Table Of Contents](#)

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

**Township Of Valley Data & Demographics
(As of July 1, 2019)**

POPULATION

Total Population	7,493
Population in Households	7,449
Population in Families	6,157
Population in Group Qtrs	44
Population Density	1,263
Diversity Index ¹	59

INCOME

Median Household Income	\$78,470
Average Household Income	\$91,342
Per Capita Income	\$35,778
Wealth Index ³	103

HOUSING

Total Housing Units	3,140 (100%)
Owner Occupied HU	2,431 (77.4%)
Renter Occupied HU	502 (16.0%)
Vacant Housing Units	207 (6.6%)
Median Home Value	\$219,133
Housing Affordability Index ²	163

HOUSEHOLDS

Total Households	2,933
Average Household Size	2.54
Family Households	2,034
Average Family Size	3

U.S. States :

State	1790	1800	1810	1820	1830	1840	1850
Alabama	-	1,250	9,046	127,901	309,527	590,756	771,623
Alaska	-	-	-	-	-	-	-
Arizona	-	-	-	-	-	-	-
Arkansas	-	-	1,062	14,273	30,388	97,574	209,897
California	-	-	-	-	-	-	92,597
Colorado	-	-	-	-	-	-	-
Connecticut	237,946	251,002	261,942	275,248	297,675	309,978	370,792
Delaware	59,096	64,273	72,674	72,749	76,748	78,085	91,532
District of Columbia	-	8,144	15,471	23,336	30,261	33,745	51,687
Florida	-	-	-	-	34,730	54,477	87,445
Georgia	82,548	162,686	252,433	340,989	516,823	691,392	906,185
Hawaii	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-
Illinois	-	-	12,282	55,211	157,445	476,183	851,470
Indiana	-	5,641	24,520	147,718	343,031	685,866	988,416
Iowa	-	-	-	-	-	43,112	192,914
Kansas	-	-	-	-	-	-	-
Kentucky	73,677	220,955	406,511	564,317	687,917	779,828	982,405
Louisiana	-	-	76,556	153,407	215,739	352,411	517,762
Maine	96,540	151,719	228,705	298,335	399,455	501,793	583,169
Maryland	319,728	341,548	380,546	407,350	447,040	470,019	583,034
Massachusetts	378,787	422,845	472,040	523,287	610,408	737,699	994,514
Michigan	-	-	4,762	8,896	31,639	212,267	397,654
Minnesota	-	-	-	-	-	-	6,077
Mississippi	-	7,600	31,306	75,448	136,621	375,651	606,526
Missouri	-	-	19,783	66,586	140,455	383,702	682,044
Montana	-	-	-	-	-	-	-
Nebraska	-	-	-	-	-	-	-
Nevada	-	-	-	-	-	-	-
New Hampshire	141,885	183,858	214,460	244,161	269,328	284,574	317,976
New Jersey	184,139	211,149	245,562	277,575	320,823	373,306	489,555
New Mexico	-	-	-	-	-	-	61,547
New York	340,120	589,051	959,049	1,372,812	1,918,608	2,428,921	3,097,394
North Carolina	393,751	478,103	555,500	638,829	737,987	753,419	869,039
North Dakota	-	-	-	-	-	-	-
Ohio	-	45,365	230,760	581,434	937,903	1,519,467	1,980,329
Oklahoma	-	-	-	-	-	-	-
Oregon	-	-	-	-	-	-	12,093
Pennsylvania	434,373	602,365	810,091	1,049,458	1,348,233	1,724,033	2,311,786
Rhode Island	68,825	69,122	76,931	83,059	97,199	108,830	147,545
South Carolina	249,073	345,591	415,115	502,741	581,185	594,398	668,507
South Dakota	-	-	-	-	-	-	-
Tennessee	35,691	105,602	261,727	422,823	681,904	829,210	1,002,717
Texas	-	-	-	-	-	-	212,592
Utah	-	-	-	-	-	-	11,380
Vermont	85,425	154,465	217,895	235,981	280,652	291,948	314,120
Virginia	691,737	807,557	877,683	938,261	1,044,054	1,025,227	1,119,348
Washington	-	-	-	-	-	-	1,201
West Virginia	55,873	78,592	105,469	136,808	176,924	224,537	302,313
Wisconsin	-	-	-	-	-	30,945	305,391
Wyoming	-	-	-	-	-	-	-
Total - States & D.C.	3,929,214	5,308,483	7,239,881	9,638,993	12,860,702	17,063,353	23,192,576

and District of Columbia Population Census

State	1860	1870	1880	1890	1900	1910
Alabama	964,201	996,992	1,262,505	1,513,401	1,828,697	2,138,093
Alaska	-	-	33,426	32,052	63,592	64,356
Arizona	-	9,658	40,440	88,243	122,931	204,354
Arkansas	435,450	484,471	802,525	1,128,211	1,311,564	1,574,449
California	379,994	560,247	864,694	1,213,398	1,485,053	2,377,549
Colorado	34,277	39,864	194,327	413,249	539,700	799,024
Connecticut	460,147	537,454	622,700	746,258	908,420	1,114,756
Delaware	112,216	125,015	146,608	168,493	184,735	202,322
District of Columbia	75,080	131,700	177,624	230,392	278,718	331,069
Florida	140,424	187,748	269,493	391,422	528,542	752,619
Georgia	1,057,286	1,184,109	1,542,180	1,837,353	2,216,331	2,609,121
Hawaii	-	-	-	-	154,001	191,874
Idaho	-	14,999	32,610	88,548	161,772	325,594
Illinois	1,711,951	2,539,891	3,077,871	3,826,352	4,821,550	5,638,591
Indiana	1,350,428	1,680,637	1,978,301	2,192,404	2,516,462	2,700,876
Iowa	674,913	1,194,020	1,624,615	1,912,297	2,231,853	2,224,771
Kansas	107,206	364,399	996,096	1,428,108	1,470,495	1,690,949
Kentucky	1,155,684	1,321,011	1,648,690	1,858,635	2,147,174	2,289,905
Louisiana	708,002	726,915	939,946	1,118,588	1,381,625	1,656,388
Maine	628,279	626,915	648,936	661,086	694,466	742,371
Maryland	687,049	780,894	934,943	1,042,390	1,188,044	1,295,346
Massachusetts	1,231,066	1,457,351	1,783,085	2,238,947	2,805,346	3,366,416
Michigan	749,113	1,184,059	1,636,937	2,093,890	2,420,982	2,810,173
Minnesota	172,023	439,706	780,773	1,310,283	1,751,394	2,075,708
Mississippi	791,305	827,922	1,131,597	1,289,600	1,551,270	1,797,114
Missouri	1,182,012	1,721,295	2,168,380	2,679,185	3,106,665	3,293,335
Montana	-	20,595	39,159	142,924	243,329	376,053
Nebraska	28,841	122,993	452,402	1,062,656	1,066,300	1,192,214
Nevada	6,857	42,491	62,266	47,355	42,335	81,875
New Hampshire	326,073	318,300	346,991	376,530	411,588	430,572
New Jersey	672,035	906,096	1,131,116	1,444,933	1,883,669	2,537,167
New Mexico	93,516	91,874	119,565	160,282	195,310	327,301
New York	3,880,735	4,382,759	5,082,871	6,003,174	7,268,894	9,113,614
North Carolina	992,622	1,071,361	1,399,750	1,617,949	1,893,810	2,206,287
North Dakota	-	2,405	36,909	190,983	319,146	577,056
Ohio	2,339,511	2,665,260	3,198,062	3,672,329	4,157,545	4,767,121
Oklahoma	-	-	-	258,657	790,391	1,657,155
Oregon	52,465	90,923	174,768	317,704	413,536	672,765
Pennsylvania	2,906,215	3,521,951	4,282,891	5,258,113	6,302,115	7,665,111
Rhode Island	174,620	217,353	276,531	345,506	428,556	542,610
South Carolina	703,708	705,606	995,577	1,151,149	1,340,316	1,515,400
South Dakota	4,837	11,776	98,268	348,600	401,570	583,888
Tennessee	1,109,801	1,258,520	1,542,359	1,767,518	2,020,616	2,184,789
Texas	604,215	818,579	1,591,749	2,235,527	3,048,710	3,896,542
Utah	40,273	86,786	143,963	210,779	276,749	373,351
Vermont	315,098	330,551	332,286	332,422	343,641	355,956
Virginia	1,219,630	1,225,163	1,512,565	1,655,980	1,854,184	2,061,612
Washington	11,594	23,955	75,116	357,232	518,103	1,141,990
West Virginia	376,688	442,014	618,457	762,794	958,800	1,221,119
Wisconsin	775,881	1,054,670	1,315,497	1,693,330	2,069,042	2,333,860
Wyoming	-	9,118	20,789	62,555	92,531	145,965
Total - States & D.C.	31,443,321	38,558,371	50,189,209	62,979,766	76,212,168	92,228,496

is Counts: 1790 to 2010

State	1920	1930	1940	1950	1960	1970
Alabama	2,348,174	2,646,248	2,832,961	3,061,743	3,266,740	3,444,165
Alaska	55,036	59,278	72,524	128,643	226,167	300,382
Arizona	334,162	435,573	499,261	749,587	1,302,161	1,770,900
Arkansas	1,752,204	1,854,482	1,949,387	1,909,511	1,786,272	1,923,295
California	3,426,861	5,677,251	6,907,387	10,586,223	15,717,204	19,953,134
Colorado	939,629	1,035,791	1,123,296	1,325,089	1,753,947	2,207,259
Connecticut	1,380,631	1,606,903	1,709,242	2,007,280	2,535,234	3,031,709
Delaware	223,003	238,380	266,505	318,085	446,292	548,104
District of Columbia	437,571	486,869	663,091	802,178	763,956	756,510
Florida	968,470	1,468,211	1,897,414	2,771,305	4,951,560	6,789,443
Georgia	2,895,832	2,908,506	3,123,723	3,444,578	3,943,116	4,589,575
Hawaii	255,881	368,300	422,770	499,794	632,772	768,561
Idaho	431,866	445,032	524,873	588,637	667,191	712,567
Illinois	6,485,280	7,630,654	7,897,241	8,712,176	10,081,158	11,113,976
Indiana	2,930,390	3,238,503	3,427,796	3,934,224	4,662,498	5,193,669
Iowa	2,404,021	2,470,939	2,538,268	2,621,073	2,757,537	2,824,376
Kansas	1,769,257	1,880,999	1,801,028	1,905,299	2,178,611	2,246,578
Kentucky	2,416,630	2,614,589	2,845,627	2,944,806	3,038,156	3,218,706
Louisiana	1,798,509	2,101,593	2,363,880	2,683,516	3,257,022	3,641,306
Maine	768,014	797,423	847,226	913,774	969,265	992,048
Maryland	1,449,661	1,631,526	1,821,244	2,343,001	3,100,689	3,922,399
Massachusetts	3,852,356	4,249,614	4,316,721	4,690,514	5,148,578	5,689,170
Michigan	3,668,412	4,842,325	5,256,106	6,371,766	7,823,194	8,875,083
Minnesota	2,387,125	2,563,953	2,792,300	2,982,483	3,413,864	3,804,971
Mississippi	1,790,618	2,009,821	2,183,796	2,178,914	2,178,141	2,216,912
Missouri	3,404,055	3,629,367	3,784,664	3,954,653	4,319,813	4,676,501
Montana	548,889	537,606	559,456	591,024	674,767	694,409
Nebraska	1,296,372	1,377,963	1,315,834	1,325,510	1,411,330	1,483,493
Nevada	77,407	91,058	110,247	160,083	285,278	488,738
New Hampshire	443,083	465,293	491,524	533,242	606,921	737,681
New Jersey	3,155,900	4,041,334	4,160,165	4,835,329	6,066,782	7,168,164
New Mexico	360,350	423,317	531,818	681,187	951,023	1,016,000
New York	10,385,227	12,588,066	13,479,142	14,830,192	16,782,304	18,236,967
North Carolina	2,559,123	3,170,276	3,571,623	4,061,929	4,556,155	5,082,059
North Dakota	646,872	680,845	641,935	619,636	632,446	617,761
Ohio	5,759,394	6,646,697	6,907,612	7,946,627	9,706,397	10,652,017
Oklahoma	2,028,283	2,396,040	2,336,434	2,233,351	2,328,284	2,559,229
Oregon	783,389	953,786	1,089,684	1,521,341	1,768,687	2,091,385
Pennsylvania	8,720,017	9,631,350	9,900,180	10,498,012	11,319,366	11,793,909
Rhode Island	604,397	687,497	713,346	791,896	859,488	946,725
South Carolina	1,683,724	1,738,765	1,899,804	2,117,027	2,382,594	2,590,516
South Dakota	636,547	692,849	642,961	652,740	680,514	665,507
Tennessee	2,337,885	2,616,556	2,915,841	3,291,718	3,567,089	3,923,687
Texas	4,663,228	5,824,715	6,414,824	7,711,194	9,579,677	11,196,730
Utah	449,396	507,847	550,310	688,862	890,627	1,059,273
Vermont	352,428	359,611	359,231	377,747	389,881	444,330
Virginia	2,309,187	2,421,851	2,677,773	3,318,680	3,966,949	4,648,494
Washington	1,356,621	1,563,396	1,736,191	2,378,963	2,853,214	3,409,169
West Virginia	1,463,701	1,729,205	1,901,974	2,005,552	1,860,421	1,744,237
Wisconsin	2,632,067	2,939,006	3,137,587	3,434,575	3,951,777	4,417,731
Wyoming	194,402	225,565	250,742	290,529	330,066	332,416
Total - States & D.C.	106,021,537	123,202,624	132,164,569	151,325,798	179,323,175	203,211,926

State	1980	1990	2000	2010
Alabama	3,893,888	4,040,587	4,447,351	4,779,736
Alaska	401,851	550,043	626,931	710,231
Arizona	2,718,215	3,665,228	5,130,632	6,392,017
Arkansas	2,286,435	2,350,725	2,673,400	2,915,918
California	23,667,902	29,760,021	33,871,653	37,253,956
Colorado	2,889,964	3,294,394	4,302,015	5,029,196
Connecticut	3,107,576	3,287,116	3,405,602	3,574,097
Delaware	594,338	666,168	783,600	897,934
District of Columbia	638,333	606,900	572,059	601,723
Florida	9,746,324	12,937,926	15,982,824	18,801,310
Georgia	5,463,105	6,478,216	8,186,816	9,687,653
Hawaii	964,691	1,108,229	1,211,537	1,360,301
Idaho	943,935	1,006,749	1,293,956	1,567,582
Illinois	11,426,518	11,430,602	12,419,647	12,830,632
Indiana	5,490,224	5,544,159	6,080,517	6,483,802
Iowa	2,913,808	2,776,755	2,926,382	3,046,355
Kansas	2,363,679	2,477,574	2,688,824	2,853,118
Kentucky	3,660,777	3,685,296	4,042,285	4,339,367
Louisiana	4,205,900	4,219,973	4,468,958	4,533,372
Maine	1,124,660	1,227,928	1,274,923	1,328,361
Maryland	4,216,975	4,781,468	5,296,507	5,773,552
Massachusetts	5,737,037	6,016,425	6,349,105	6,547,629
Michigan	9,262,078	9,295,297	9,938,480	9,883,640
Minnesota	4,075,970	4,375,099	4,919,492	5,303,925
Mississippi	2,520,638	2,573,216	2,844,656	2,967,297
Missouri	4,916,686	5,117,073	5,596,683	5,988,927
Montana	786,690	799,065	902,195	989,415
Nebraska	1,569,825	1,578,385	1,711,265	1,826,341
Nevada	800,493	1,201,833	1,998,257	2,700,551
New Hampshire	920,610	1,109,252	1,235,786	1,316,470
New Jersey	7,364,823	7,730,188	8,414,347	8,791,894
New Mexico	1,302,894	1,515,069	1,819,046	2,059,179
New York	17,558,072	17,990,455	18,976,821	19,378,102
North Carolina	5,881,766	6,628,637	8,046,485	9,535,483
North Dakota	652,717	638,800	642,200	672,591
Ohio	10,797,630	10,847,115	11,353,145	11,536,504
Oklahoma	3,025,290	3,145,585	3,450,652	3,751,351
Oregon	2,633,105	2,842,321	3,421,436	3,831,074
Pennsylvania	11,863,895	11,881,643	12,281,054	12,702,379
Rhode Island	947,154	1,003,464	1,048,319	1,052,567
South Carolina	3,121,820	3,486,703	4,011,816	4,625,364
South Dakota	690,768	696,004	754,844	814,180
Tennessee	4,591,120	4,877,185	5,689,267	6,346,105
Texas	14,229,191	16,986,510	20,851,790	25,145,561
Utah	1,461,037	1,722,850	2,233,198	2,763,885
Vermont	511,456	562,758	608,827	625,741
Virginia	5,346,818	6,187,358	7,079,030	8,001,024
Washington	4,132,156	4,866,692	5,894,141	6,724,540
West Virginia	1,949,644	1,793,477	1,808,350	1,852,994
Wisconsin	4,705,767	4,891,769	5,363,715	5,686,986
Wyoming	469,557	453,588	493,782	563,626
Total - States & D.C.	226,545,805	248,709,873	281,424,603	308,745,538

Pennsylvania Municipalities, Total Decennial Population, 2010 & 2000

Prepared by The Pennsylvania State Data Center

Source: U.S. Census Bureau, Census 2000 & 2010 Redistricting Data (Public Law 94-171) Summary File.

March 9, 2011

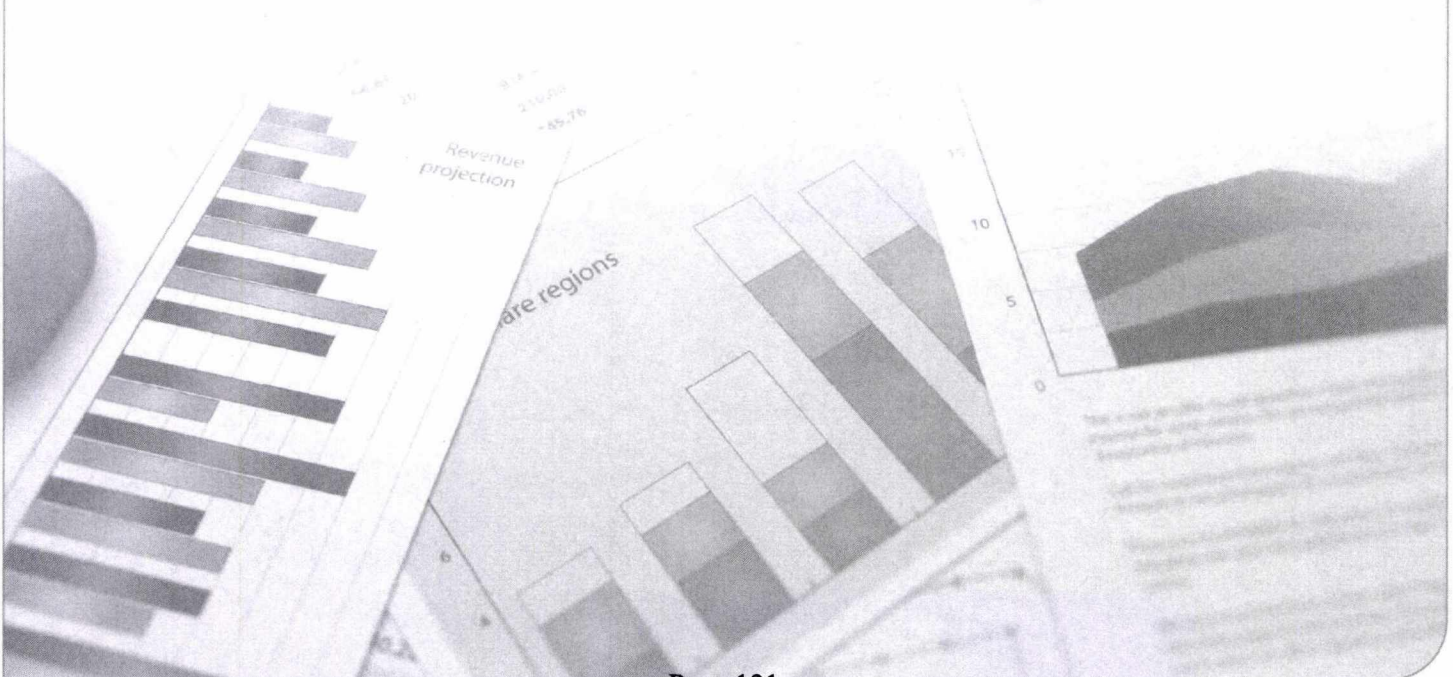
2010 State, County & Munic. FIPS Code	Geographic Area	Census: April 1, 2010			Census: April 1, 2000			Change: 2000 to 2010			
		Number	Percent Share of State Total	Munic. Pop. Rank	Number	Percent Share of State Total	Munic. Pop. Rank	Number	Munic. Rank	Percent	Munic. Rank
4202900000	Chester County	498,886	3.9%	-	433,501	3.5%	-	65,385	-	15.1%	-
4202979544	Valley township	6,794	0.1%	409	5,116	0.0%	530	1,678	127	32.8%	97

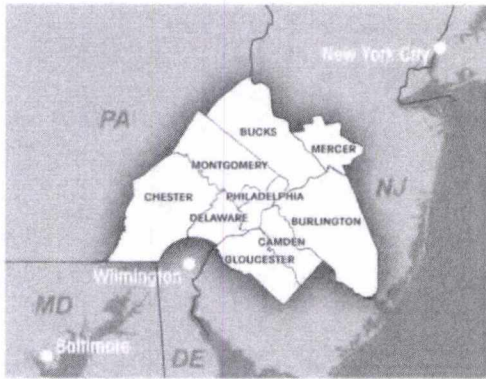


ADR 022 | July 2016

Analytical Data Report

County- and Municipal-Level
Population Forecasts, 2015-2045





The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region – leading the way to a better future.



The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources, including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA); the Pennsylvania and New Jersey departments of transportation; and DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

The Delaware Valley Regional Planning Commission (DVRPC) fully complies with Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, Executive Order 12898 on Environmental Justice, and related nondiscrimination statutes and regulations in all programs and activities. DVRPC's website, www.dvrpc.org, may be translated into multiple languages. Publications and other public documents can be made available in alternative languages and formats, if requested.

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As the region's metropolitan planning organization, DVRPC provides technical assistance and services to its member state and local governments. *Delaware Valley Data* is our periodic series of free data bulletins, analytical data reports, data reference guides, and data snapshots.

Background

Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of the Delaware Valley Regional Planning Commission's (DVRPC's) long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. DVRPC last adopted forecasts through the year 2040 in January 2012. Since that time, the Census Bureau has released 2015 population estimates, and both the nation and the region have continued to recover from the significant economic recession that officially began in December 2007 and ended in June 2009.

In order to incorporate the 2015 Census estimates and maintain a 30-year planning horizon, DVRPC has prepared 2045 population forecasts for its member counties and municipalities. These forecasts were formally adopted by the DVRPC Board on July 28, 2016, and serve as the basis for DVRPC planning and modeling activities. Employment forecasts in five-year increments through 2045 are scheduled to be adopted in October 2016.

Three alternative sets of county- and municipal-level 2045 population forecasts were developed based on the method described below, and sent to the county planning staffs for review and comment. Agreement was first reached on the county- and municipal-level 2045 population forecasts; forecasts for 2020, 2025, 2030, 2035, and 2040 were then calculated by DVRPC, based on the population growth rate predicted over each five-year increment by the Commission's age-cohort survival model. These mid-cycle forecasts were again sent to the counties for review, and their suggested revisions were incorporated to produce the final set of 2045 forecasts.

Method for Calculating County-Level 2045 Population Forecasts

Three alternative 2045 population forecasts were calculated for each county based on three separate methods, the results of which define a reasonable range of values within which each county's 2045 population total is expected to fall. This process replicates the process employed in 2007 and again in 2011, to develop the Commission's adopted 2035 and 2040 population forecasts. The three alternative methods are as follows:

- An initial set of draft county-level 2045 forecasts was obtained by running the traditional age-cohort survival model used in the previously forecasted round, but updating the model to incorporate 2000, 2005, 2010, and 2015 population data in five-year age/sex cohorts. When the analysis for this report was conducted, the Census Bureau had released 2015 estimates of the total population in each county, but had not yet released 2015 estimates by age/sex cohorts. The percentage of the population in each age/sex cohort in 2014 was therefore applied to the 2015 county estimates, to approximate 2015 age/sex breakdowns. The model incorporates birth, death, survival, and migration rates as follows:

- **Birth rate:** The model uses the number of live births per 1,000 women by five-year age cohort in New Jersey in 2013, assuming that New Jersey state-wide data is a better proxy for the Greater Philadelphia region's fertility rate than state-wide data from Pennsylvania (which has many non-metropolitan counties).
- **Survival rate:** Survival rate data (and, conversely, mortality rate data) was obtained from the National Vital Statistics System of the Center for Disease Control and Prevention (CDC). Future survival rates were adjusted to account for expected improvements in mortality related to medical advances and lifestyle changes, based on average increases in life expectancy over the past 20 years.
- **Migration:** The model assumes that migration (the change in the population that cannot be accounted for through births and deaths) in future years will be the same as the average migration rate experienced by each five-year age/sex cohort in each county between 2000 and 2015. Using the average migration rates between 2000 and 2015 accounts for changes in migration experienced prior to the economic recession, during the recession, and post-recession.

This age-cohort model replicates the model used in 2007 and again in 2011, but incorporates recent data to more accurately portray recent demographic trends. These trends include higher in-migration of seniors to certain areas of the region, declining overall fertility rates but higher fertility rates among women over age 35, and in-migration to Philadelphia and some of the region's older suburbs.

- A second set of county-level forecasts was developed utilizing the region-wide 2045 population forecast from the age-cohort model described above, but redistributing the total 2045 regional population to each of the nine counties based on the county percentages from the adopted 2040 forecasts. This alternative acknowledges that the longer-term development trends agreed upon during the process of developing the 2040 forecasts may be more important in some counties than the age-cohort births/deaths and shorter-term migration trends reflected in the county-level age-cohort method described above. It therefore continues those longer-term growth trends by reassigning the 2045 regional population among the nine counties, essentially adjusting migration rates to compensate for birth-death effects.
- A third alternative set of county-level forecasts was developed by applying the growth rates between each five-year time period from DVRPC's adopted 2040 forecasts to the previous five-year total, but using 2015 American Community Survey data as the base. The expected growth rate between 2040 and 2045 was based on the average change in the forecasted growth rate for each five-year increment between 2015 and 2040.

This alternative ignores the results of the most recent age-cohort model and simply extends to 2045 the growth rates agreed upon during the process of developing the 2040 forecasts, as applied to the new 2015 base. This method assumes future population growth will follow previously adopted trends but adjusts for the differences in growth that actually occurred between 2010 and 2015.

The two alternatives to the age-cohort model incorporate the value of local planning knowledge and recognize that the adopted 2040 forecasts did not simply reflect the age-cohort results, but included significant input from the county planning staffs. Based on the above steps, three alternative sets of 2045 forecasts were developed for each of the nine counties, creating expected minimum and maximum 2045 county-level forecasts.

Method for Calculating Municipal-Level 2045 Population Forecasts

Each set of alternative county-level 2045 forecasts was disaggregated to the municipal level using the following method:

- The difference between the municipal-level 2015 Census population estimate and DVRPC's 2015 population forecast was calculated for each municipality.
- These differences were added or subtracted as appropriate from the adopted municipal-level 2040 forecasts. These adjusted 2040 forecasts were then used as a base for the calculation of the 2045 municipal forecasts.
- The adjusted 2040 population forecasts were summed and, for each set of alternatives, the percentage of the population forecasted to live in each municipality in 2040 (based on the adjusted 2040 forecasts) was applied to each of the 2045 county-level alternatives to create preliminary 2045 municipal forecasts, with the sum of all municipalities within each county matching the county-level 2045 forecast for each of the three alternatives.

This method assumes that the proportion of the county's population living in each municipality in 2040 will remain the same in 2045 and, when applied to the three alternative county-level forecasts, produced three alternative sets of municipal-level 2045 forecasts. These alternatives were sent to DVRPC's member counties' planning staff for review and comment, and consensus was reached on a full set of 2045 county and municipal forecasts.

Method for Developing Mid-Year Population Forecasts

Once agreement was reached on the county- and municipal-level 2045 population forecasts, forecasts for 2020, 2025, 2030, 2035, and 2040 were developed by DVRPC, based on the population growth predicted for each mid-year increment by the regional age-cohort survival model. The age-cohort model predicted a slight curve (rather than a straight line), with slightly more growth in the early years and a slight slowing near the end.

Obviously, the population of every municipality is not going to increase at exactly the same rate during each five-year interval. These mid-year numbers were simply intended to provide a logical starting point for discussion, and were sent to the county planning staffs for final review, based on their local knowledge of pending and approved development proposals and population growth trends. Their suggested revisions were incorporated to produce the final set of 2045 forecasts. Table 1 summarizes DVRPC's adopted regional and county forecasts in five-year increments through 2045, and municipal-level forecasts are provided in Appendix A.

Table 1: Forecasted Population by County, 2015-2045

County	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	2015-2045	
									Absolute Change	Percentage Change
Bucks County	625,249	627,367	640,495	654,792	669,299	681,273	691,111	699,498	72,131	11.5%
Chester County	498,886	515,939	543,702	571,641	599,932	624,832	645,562	662,283	146,344	28.4%
Delaware County	558,979	563,894	568,337	572,758	577,248	581,136	584,329	587,037	23,143	4.1%
Montgomery County	799,874	819,264	840,934	863,327	884,387	903,114	918,918	932,820	113,556	13.9%
Philadelphia County	1,526,006	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	128,690	8.2%
Five Pennsylvania Counties	4,008,994	4,093,907	4,188,255	4,279,333	4,374,837	4,457,645	4,523,322	4,577,771	483,864	11.8%
Burlington County	448,734	450,226	459,344	468,428	475,978	482,560	488,026	492,709	42,483	9.4%
Camden County	513,657	510,923	514,006	517,073	520,189	522,886	525,101	526,997	16,074	3.1%
Gloucester County	288,288	291,479	307,766	323,969	340,425	354,677	366,383	376,308	84,829	29.1%
Mercer County	367,511	371,398	377,328	383,227	389,219	394,407	398,669	402,283	30,885	8.3%
Four New Jersey Counties	1,618,190	1,624,026	1,658,444	1,692,697	1,725,811	1,754,530	1,778,179	1,798,296	174,270	10.7%
Nine-County DVRPC Region	5,627,184	5,717,933	5,846,699	5,972,030	6,100,648	6,212,175	6,301,501	6,376,067	658,134	11.5%

Source: Delaware Valley Regional Planning Commission, July 2016.

Table 2 identifies the 20 municipalities expected to gain the most residents between 2015 and 2045, and Table 3 identifies municipalities with the highest forecasted percentage change in population. Figure 1 illustrates the 2040 population forecasts by municipality, with concentrations of population seen 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. Figures 2 and 3 illustrate absolute and percent change in population by municipality between 2015 and 2045, respectively.

Figure 4 illustrates the absolute increase in population per square mile in each of the region's 352 municipalities. This map illustrates not just where the population is increasing, but also the impact of relatively small population increases on the population density in specific municipalities. Significant increases in density are forecast not just in the City of Philadelphia, but also in many of the region's smaller boroughs, including Phoenixville, Atglen, Parkesburg, Oxford, Avondale, West Grove, and Kennett Square in Chester County; Bridgeport and Conshohocken in Montgomery County; and Riverside and Beverly in Burlington County.

Highlights

- The DVRPC region is forecast to gain over 658,000 residents between 2015 and 2045 (an 11.5 percent increase).
- As it has since the mid-2000s, the population of the City of Philadelphia increased between 2010 and 2015, with the city adding more than 41,000 residents. This trend is forecast to continue, with the city's population expected to increase by over 8 percent by 2045, adding over 128,000 residents. The share of the region's population living in the city is expected to increase slightly by 2045, from 26 percent, in 2015, to 27 percent.
- The population of the region's five southeastern Pennsylvania counties is forecast to increase by 11.8 percent between 2015 and 2045, while the population of the four New Jersey counties is expected to increase by 10.7 percent.
- The largest percentage increases in population are expected in municipalities in Gloucester County, New Jersey (where the county's population is forecast to increase by over 29 percent) and Chester County, Pennsylvania (where the population is forecast to increase by more than 28 percent).

- The largest absolute increase in population is forecast for Chester County, which is expected to gain over 146,000 residents and surpass Delaware County to become the region's fourth most populous county by 2045. Other counties forecast to see a significant number of additional residents include Philadelphia (as mentioned above), Montgomery County (with a forecasted increase of over 113,000 people), and Gloucester County, New Jersey (forecast to add almost 85,000 residents).

Table 2: Municipalities with the Greatest Forecasted Absolute Change in Population, 2015–2045

Rank	Municipality or City Planning Area	County	Absolute Change	Rank	Municipality or City Planning Area	County	Absolute Change
1	Central	Philadelphia	30,406	11	Harrison Township	Gloucester	7,666
2	Lower North	Philadelphia	16,360	12	Washington Township	Gloucester	7,504
3	University/Southwest	Philadelphia	14,586	13	Bristol Township	Bucks	6,766
4	Monroe Township	Gloucester	13,519	14	Mantua Township	Gloucester	6,667
5	Woolwich Township	Gloucester	12,362	15	River Wards	Philadelphia	6,566
6	Phoenixville Borough	Chester	9,052	16	East Whiteland Township	Chester	6,250
7	North	Philadelphia	8,607	17	Glassboro Borough	Gloucester	6,063
8	West	Philadelphia	8,278	18	Lower Merion Township	Montgomery	6,054
9	Bensalem Township	Bucks	7,838	19	Upper Providence Township	Montgomery	6,050
10	South	Philadelphia	7,767	20	Horsham Township	Montgomery	5,954

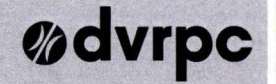
Source: Delaware Valley Regional Planning Commission, July 2016.

Table 3: Municipalities with the Greatest Forecasted Percentage Change in Population, 2015–2045

Rank	Municipality or City Planning Area	County	Absolute Change	Rank	Municipality or City Planning Area	County	Absolute Change
1	Woolwich Township	Gloucester	100.5%	11	London Grove Township	Chester	52.4%
2	Elk Township	Gloucester	70.3%	12	South Coatesville Borough	Chester	50.5%
3	Atglen Borough	Chester	63.9%	13	West Brandywine Township	Chester	48.2%
4	Elverson Borough	Chester	62.6%	14	East Vincent Township	Chester	47.6%
5	Modena Borough	Chester	62.5%	15	East Brandywine Township	Chester	47.0%
6	Sadsbury Township	Chester	62.3%	16	Penn Township	Chester	46.5%
7	Harrison Township	Gloucester	59.0%	17	Charlestown Township	Chester	46.5%
8	East Whiteland Township	Chester	58.4%	18	New Hanover Township	Montgomery	46.3%
9	West Sadsbury Township	Chester	54.5%	19	Hainesport Township	Burlington	45.5%
10	Phoenixville Borough	Chester	54.3%	20	Mantua Township	Gloucester	44.3%

Source: Delaware Valley Regional Planning Commission, July 2016.

Figure 1:
2045 Municipal Population Forecast



- People**
- 3,000 or Fewer
 - 3,001 to 6,000
 - 6,001 to 12,000
 - 12,001 to 24,000
 - 24,001 or More

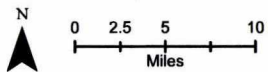
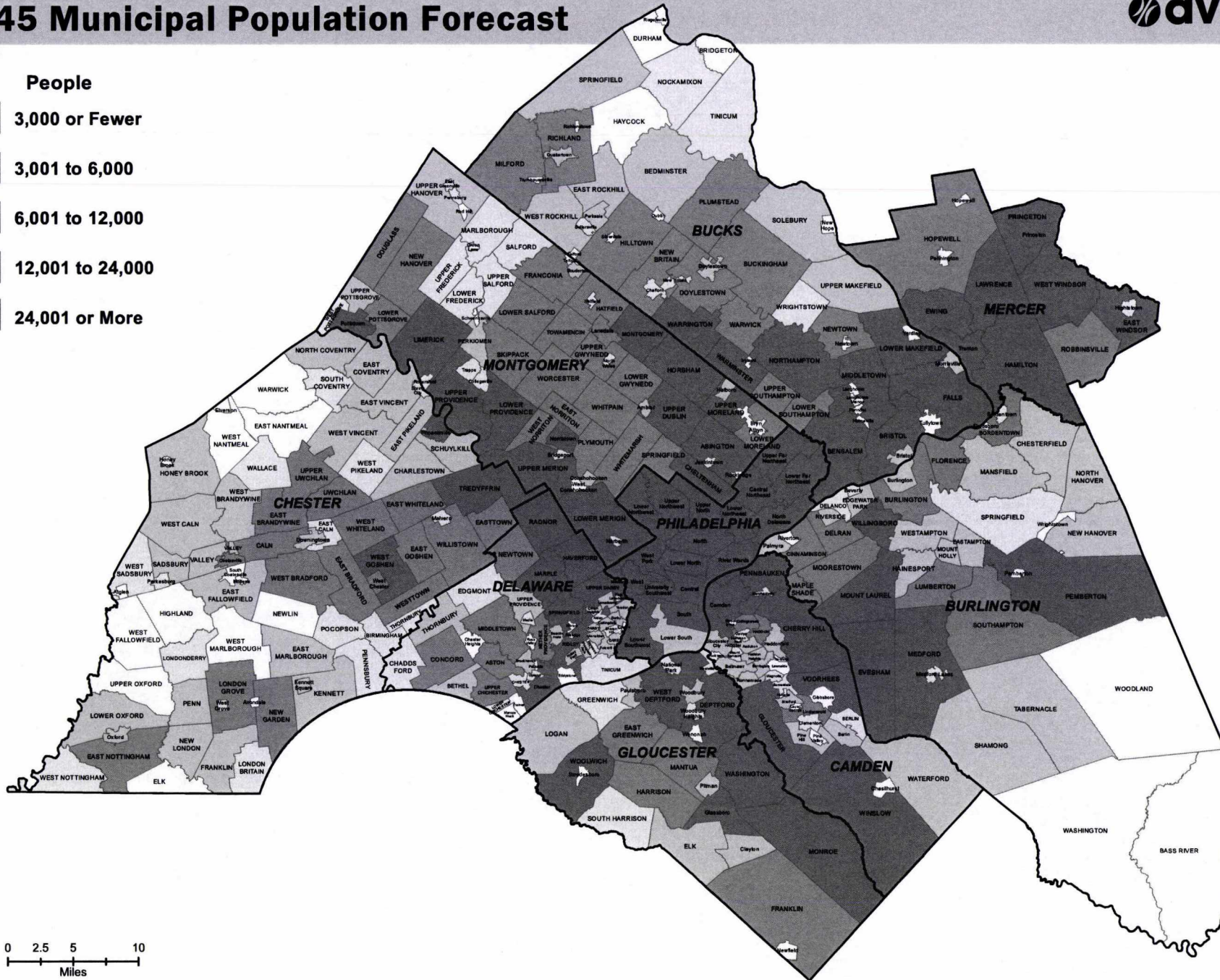


Figure 2:
2045 Municipal Population Forecast
Absolute Change: 2015–2045



- People**
- 501 or Fewer
 - 500 to 500
 - 501 to 1,500
 - 1,501 to 5,000
 - 5,001 or More

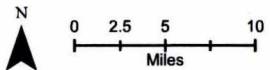
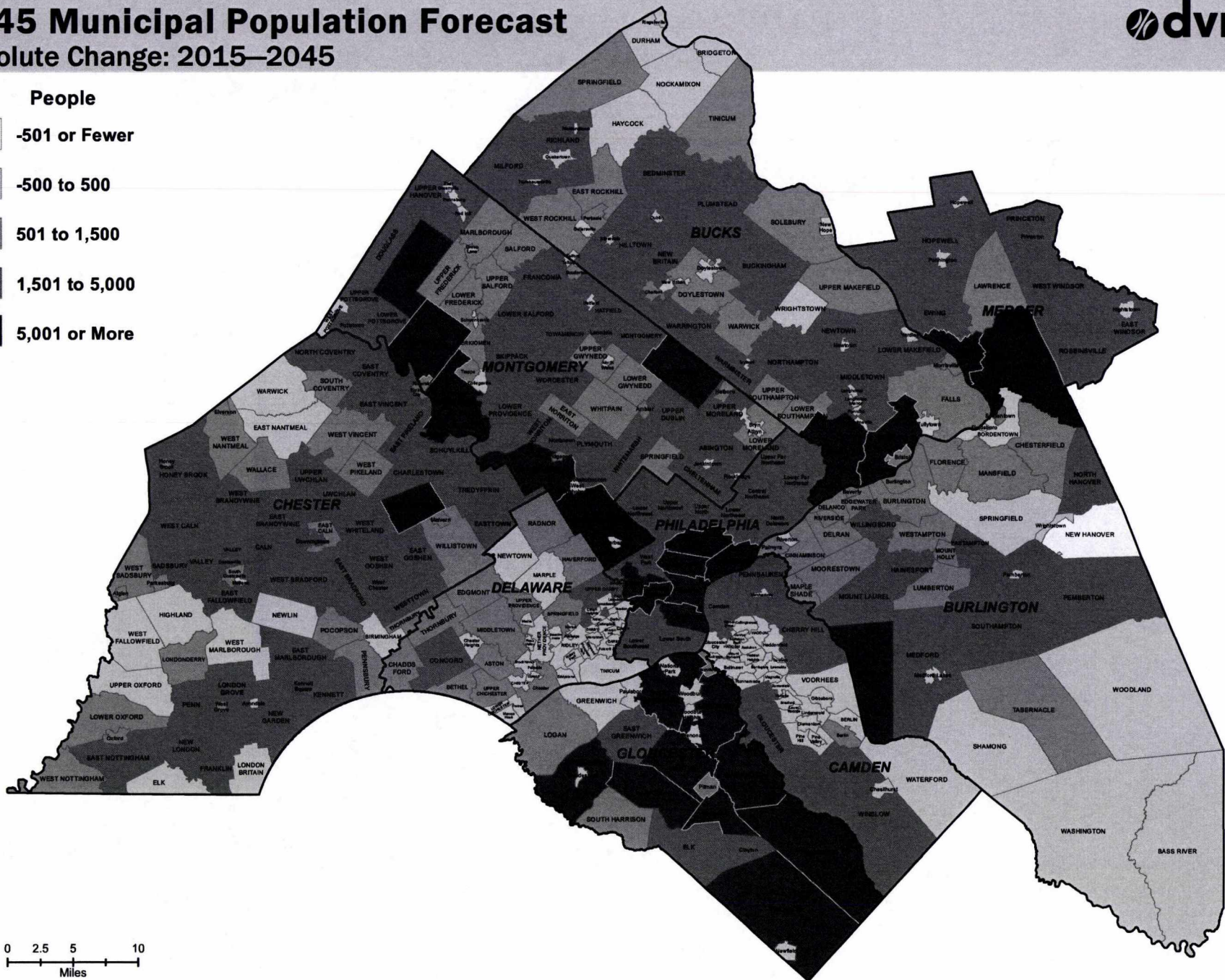


Figure 3:
2045 Municipal Population Forecast
Percentage Change: 2015–2045



- Decline (Below -5%)
- Stable (-5% to +5%)
- Moderate Growth (+6% to +25%)
- Significant Growth (+26% to +50%)
- Exceptional Growth (Above +50%)

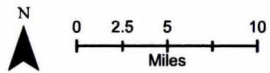
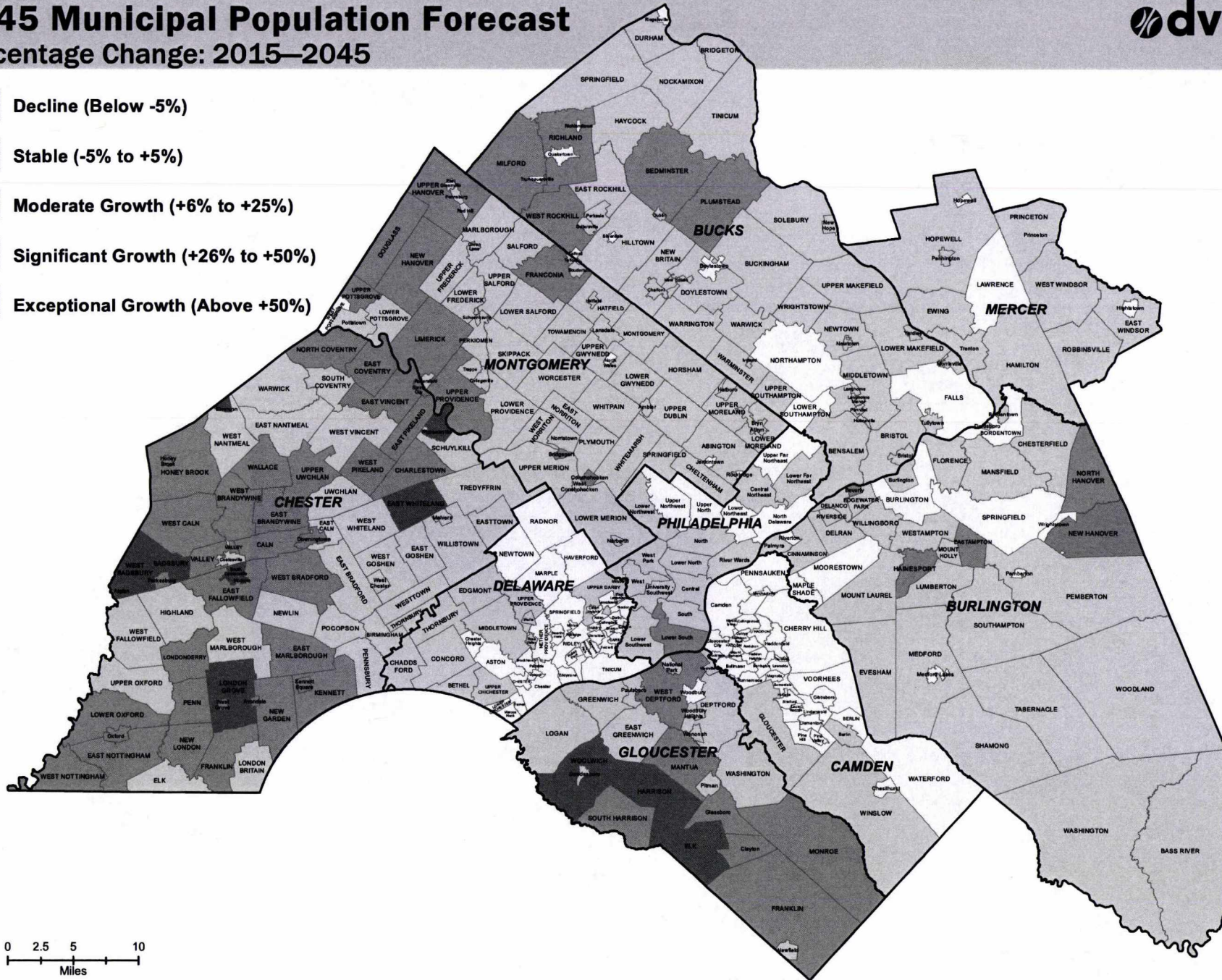
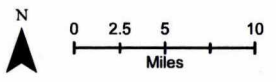
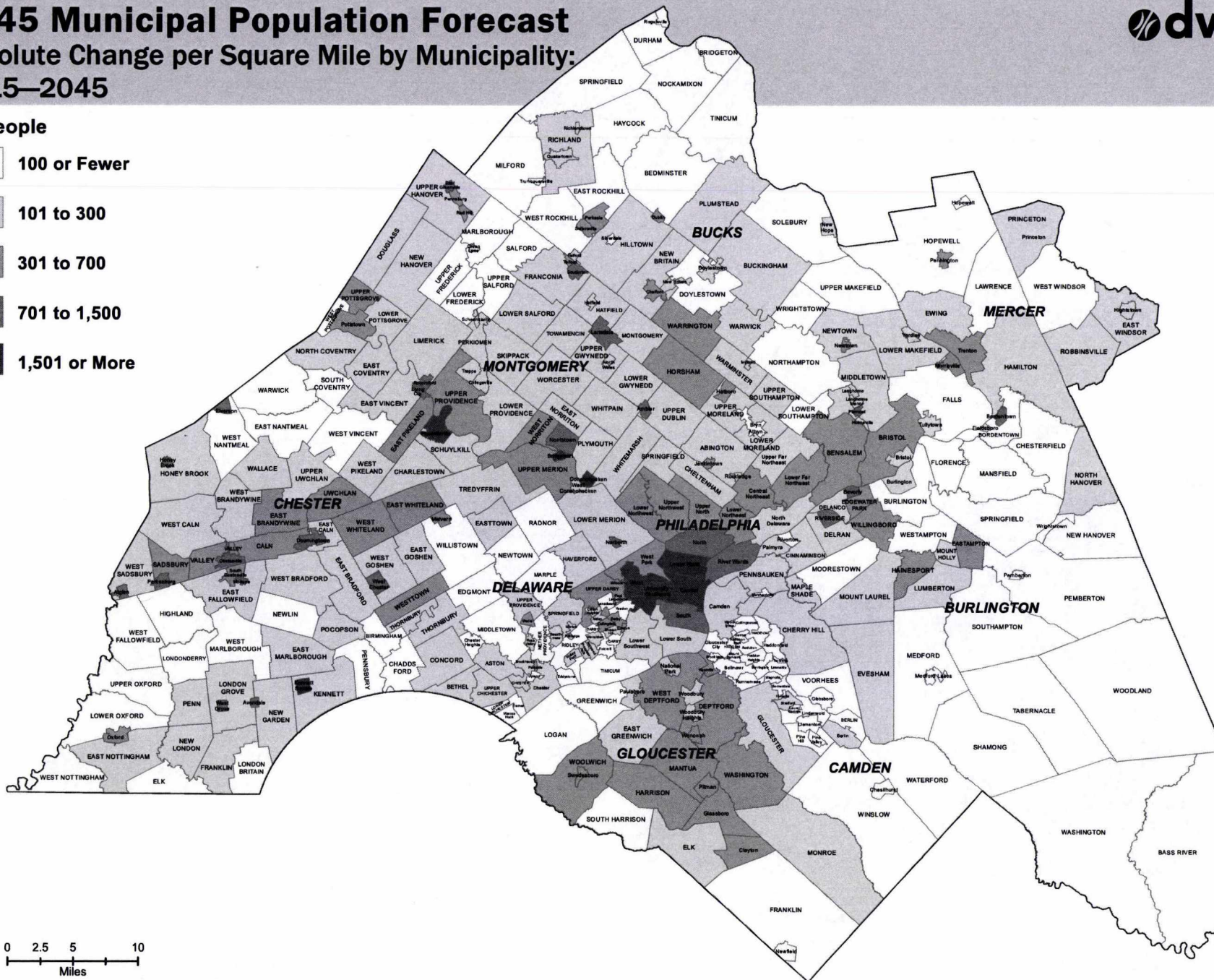
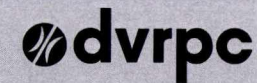


Figure 4:
2045 Municipal Population Forecast
Absolute Change per Square Mile by Municipality:
2015–2045



Summary

This report summarizes the method used to develop 2045 and interim-year population forecasts, which were adopted by the DVRPC Board on July 28, 2016. The population of the nine-county DVRPC region is forecast to increase by 11.5 percent between 2015 and 2045, with much of this growth concentrated in the suburbs, particularly in Chester County, Pennsylvania, and Gloucester County, New Jersey. The population of the City of Philadelphia is expected to increase by over 8 percent by 2045, and the share of the region's population living in the city is expected to increase slightly, from 26 percent in 2015 to 27 percent in 2045.

Population and employment forecasts are a critical component of long-range land use and transportation planning. The adopted population forecasts provided in this report will serve as the basis for DVRPC's planning and modeling activities. Employment forecasts in five-year increments through 2045 will be prepared and adopted in October 2016. The population and employment forecasts will be included in and support *Connections 2045*, the region's long-range plan update, scheduled for adoption in July 2017.

Appendix A: Forecasted Population by County and Municipality, 2015-2045

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Bucks County	597,636	625,249	627,367	640,495	654,792	669,299	681,273	691,111	699,498	72,131	11.5%
Bedminster Township	4,800	6,574	7,037	7,407	7,775	8,149	8,473	8,739	8,965	1,928	27.4%
Bensalem Township	58,435	60,427	60,374	61,878	63,377	64,898	66,212	67,296	68,212	7,838	13.0%
Bridgeton Township	1,410	1,277	1,283	1,309	1,335	1,361	1,384	1,402	1,418	135	10.5%
Bristol Borough	9,923	9,726	9,569	9,674	9,778	9,884	9,976	10,051	10,115	546	5.7%
Bristol Township	55,521	54,582	54,086	54,360	56,166	57,990	59,127	60,060	60,852	6,766	12.5%
Buckingham Township	16,440	20,075	20,385	21,079	21,770	22,471	23,078	23,577	24,000	3,615	17.7%
Chalfont Borough	3,900	4,009	4,069	4,496	4,559	4,625	4,672	4,699	4,726	657	16.1%
Doylestown Borough	8,230	8,380	8,301	8,368	8,435	8,502	8,561	8,609	8,650	349	4.2%
Doylestown Township	18,387	17,565	17,563	17,806	18,048	18,293	18,506	18,681	18,829	1,266	7.2%
Dublin Borough	2,085	2,158	2,169	2,221	2,273	2,325	2,371	2,408	2,440	271	12.5%
Durham Township	1,313	1,144	1,144	1,175	1,206	1,238	1,265	1,288	1,307	163	14.2%
East Rockhill Township	5,200	5,706	5,742	5,924	6,106	6,290	6,450	6,581	6,692	950	16.5%
Falls Township	34,865	34,300	33,901	34,074	34,245	34,420	34,571	34,695	34,800	899	2.7%
Haycock Township	2,190	2,225	2,218	2,266	2,315	2,363	2,406	2,441	2,470	252	11.4%
Hilltown Township	12,100	15,029	15,262	15,807	16,349	16,900	17,376	17,768	18,100	2,838	18.6%
Hulmeville Borough	895	1,003	996	1,007	1,017	1,028	1,037	1,045	1,051	55	5.5%
Ivyland Borough	492	1,041	1,053	1,071	1,089	1,108	1,124	1,137	1,148	95	9.0%
Langhorne Borough	1,980	1,622	1,599	1,618	1,638	1,657	1,674	1,688	1,700	101	6.3%
Langhorne Manor Borough	925	1,442	1,431	1,449	1,467	1,485	1,501	1,514	1,525	94	6.6%
Lower Makefield Township	32,691	32,559	32,755	33,683	34,074	34,474	34,855	35,181	35,500	2,745	8.4%
Lower Southampton Township	19,275	18,909	19,142	19,266	19,389	19,515	19,623	19,712	19,788	646	3.4%
Middletown Township	44,140	45,436	45,407	46,097	46,784	47,480	48,084	48,580	49,000	3,593	7.9%
Milford Township	8,810	9,902	10,053	10,555	11,055	11,562	12,002	12,363	12,669	2,616	26.0%
Morrisville Borough	10,020	8,728	8,605	8,623	8,796	8,968	9,074	9,160	9,234	629	7.3%
New Britain Borough	2,358	3,152	3,017	3,080	3,143	3,207	3,263	3,308	3,347	330	10.9%
New Britain Township	10,695	11,070	11,236	11,653	12,068	12,489	12,854	13,154	13,408	2,172	19.3%
New Hope Borough	2,250	2,528	2,510	2,550	2,590	2,631	2,666	2,695	2,719	209	8.3%
Newtown Borough	2,310	2,248	2,222	2,284	2,345	2,407	2,461	2,505	2,543	321	14.4%
Newtown Township	18,206	19,299	19,704	20,059	20,412	20,770	21,081	21,336	21,552	1,848	9.4%
Nockamixon Township	3,520	3,441	3,413	3,491	3,568	3,647	3,715	3,771	3,818	405	11.9%
Northampton Township	39,384	39,726	39,587	39,841	40,262	40,691	41,012	41,276	41,500	1,913	4.8%
Pennel Borough	2,420	2,328	2,221	2,283	2,345	2,408	2,462	2,507	2,545	324	14.6%
Perkasie Borough	8,830	8,511	8,471	8,671	8,869	9,071	9,246	9,389	9,511	1,040	12.3%
Plumstead Township	11,410	12,442	13,511	14,417	15,318	16,233	17,025	17,676	18,228	4,717	34.9%
Quakertown Borough	8,935	8,979	8,855	8,912	8,968	9,025	9,075	9,115	9,150	295	3.3%
Richland Township	9,920	13,052	13,155	13,855	14,551	15,258	15,871	16,374	16,800	3,645	27.7%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Richlandtown Borough	1,285	1,327	1,312	1,319	1,327	1,334	1,340	1,346	1,350	38	2.9%
Riegelsville Borough	863	868	858	865	873	880	886	892	896	38	4.4%
Sellersville Borough	4,564	4,249	4,212	4,297	4,382	4,469	4,544	4,605	4,657	445	10.6%
Silverdale Borough	1,000	871	856	863	869	876	881	886	890	34	4.0%
Solebury Township	7,740	8,692	8,639	8,766	8,892	9,020	9,131	9,223	9,300	661	7.7%
Springfield Township	4,965	5,035	5,036	5,239	5,440	5,645	5,823	5,968	6,092	1,056	21.0%
Telford Borough (part)	2,201	2,207	2,193	2,214	2,234	2,255	2,273	2,287	2,300	107	4.9%
Tinicum Township	4,205	3,995	3,963	4,136	4,307	4,482	4,633	4,757	4,862	899	22.7%
Trumbauersville Borough	1,060	974	959	967	975	983	990	995	1,000	41	4.3%
Tullytown Borough	2,035	1,872	1,859	1,906	1,953	2,000	2,042	2,075	2,104	245	13.2%
Upper Makefield Township	7,180	8,190	8,255	8,477	8,697	8,921	9,115	9,275	9,410	1,155	14.0%
Upper Southampton Township	15,765	15,152	15,121	15,271	15,419	15,570	15,701	15,809	15,900	779	5.2%
Warminster Township	31,383	32,682	32,594	33,035	33,473	33,918	34,304	34,620	34,889	2,295	7.0%
Warrington Township	17,580	23,418	23,942	24,796	25,646	26,510	27,257	27,871	28,392	4,450	18.6%
Warwick Township	11,975	14,437	14,694	14,972	15,249	15,531	15,774	15,974	16,144	1,450	9.9%
West Rockhill Township	4,230	5,256	5,277	5,369	5,733	6,098	6,337	6,534	6,700	1,423	27.0%
Wrightstown Township	2,840	2,995	3,110	3,197	3,284	3,373	3,449	3,512	3,565	455	14.6%
Yardley Borough	2,500	2,434	2,441	2,497	2,554	2,611	2,660	2,701	2,735	294	12.0%
Chester County	433,512	498,886	515,939	543,702	571,641	599,932	624,832	645,562	662,283	146,344	28.4%
Atglen Borough	1,215	1,406	1,408	1,532	1,683	1,858	2,030	2,203	2,308	900	63.9%
Avondale Borough	1,110	1,265	1,399	1,490	1,581	1,672	1,752	1,818	1,873	474	33.9%
Birmingham Township	4,220	4,208	4,262	4,320	4,377	4,435	4,486	4,527	4,562	300	7.0%
Caln Township	11,916	13,817	14,115	15,025	15,929	16,848	17,644	18,299	18,852	4,737	33.6%
Charlestown Township	4,050	5,671	5,690	6,198	6,703	7,217	7,661	8,026	8,336	2,646	46.5%
Coatesville City	10,838	13,100	13,148	13,666	14,182	14,706	15,160	15,532	15,848	2,700	20.5%
Downingtown Borough	7,590	7,891	7,946	8,508	9,068	9,636	10,128	10,532	10,875	2,929	36.9%
East Bradford Township	9,405	9,942	10,038	10,470	10,900	11,336	11,714	12,025	12,288	2,250	22.4%
East Brandywine Township	5,825	6,742	8,295	9,044	9,789	10,545	11,201	11,739	12,195	3,900	47.0%
East Caln Township	2,855	4,838	4,873	5,073	5,273	5,475	5,651	5,795	5,917	1,044	21.4%
East Coventry Township	4,565	6,636	6,753	7,173	7,592	8,017	8,385	8,687	8,943	2,190	32.4%
East Fallowfield Township	5,160	7,449	7,570	7,992	8,412	8,839	9,208	9,512	9,769	2,199	29.0%
East Goshen Township	16,825	18,028	18,339	18,685	19,028	19,378	19,680	19,928	20,139	1,800	9.8%
East Marlborough Township	6,315	7,026	7,283	7,850	8,414	8,986	9,482	9,890	10,235	2,952	40.5%
East Nantmeal Township	1,785	1,803	1,842	1,871	1,899	1,929	1,954	1,974	1,992	150	8.1%
East Nottingham Township	5,515	8,650	8,930	9,571	10,208	10,855	11,415	11,876	12,266	3,336	37.4%
East Pikeland Township	6,550	7,079	7,359	7,932	8,502	9,081	9,583	9,995	10,344	2,985	40.6%
East Vincent Township	5,493	6,821	6,920	7,552	8,182	8,821	9,374	9,829	10,214	3,294	47.6%
East Whiteland Township	9,335	10,650	10,702	12,002	13,196	14,309	15,358	16,221	16,952	6,250	58.4%

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Easttown Township	10,265	10,477	10,620	10,966	11,309	11,659	11,961	12,209	12,420	1,800	16.9%
Elk Township	1,490	1,681	1,695	1,753	1,810	1,868	1,919	1,960	1,995	300	17.7%
Elverson Borough	960	1,225	1,314	1,472	1,629	1,788	1,926	2,040	2,136	822	62.6%
Franklin Township	3,850	4,352	4,518	4,861	5,202	5,548	5,848	6,094	6,303	1,785	39.5%
Highland Township	1,125	1,272	1,289	1,332	1,375	1,419	1,457	1,488	1,514	225	17.5%
Honey Brook Borough	1,285	1,713	1,758	1,873	1,988	2,104	2,205	2,288	2,358	600	34.1%
Honey Brook Township	6,280	7,647	8,124	8,510	8,980	9,523	10,058	10,596	10,924	2,800	34.5%
Kennett Square Borough	5,275	6,072	6,167	6,666	7,163	7,667	8,104	8,463	8,767	2,600	42.2%
Kennett Township	6,450	7,565	8,172	8,690	9,206	9,730	10,184	10,556	10,872	2,700	33.0%
London Britain Township	2,795	3,139	3,268	3,314	3,360	3,406	3,447	3,480	3,508	240	7.3%
London Grove Township	5,265	7,475	8,592	9,213	9,969	10,842	11,702	12,566	13,092	4,500	52.4%
Londonderry Township	1,630	2,149	2,400	2,553	2,706	2,860	2,995	3,105	3,198	798	33.3%
Lower Oxford Township	4,320	5,200	5,001	5,289	5,576	5,867	6,119	6,326	6,501	1,500	30.0%
Malvern Borough	3,060	2,998	3,430	3,557	3,684	3,813	3,924	4,015	4,093	663	19.3%
Modena Borough	610	535	528	591	654	718	774	819	858	330	62.5%
New Garden Township	9,080	11,984	12,096	12,730	13,360	14,000	14,555	15,010	15,396	3,300	27.3%
New London Township	4,585	5,631	5,944	6,438	6,930	7,429	7,862	8,217	8,518	2,574	43.3%
Newlin Township	1,150	1,285	1,356	1,415	1,474	1,534	1,586	1,629	1,665	309	22.8%
North Coventry Township	7,380	7,866	8,024	8,397	8,851	9,375	9,891	10,409	10,724	2,700	33.6%
Oxford Borough	4,315	5,077	5,385	5,571	5,798	6,060	6,318	6,577	6,735	1,350	25.1%
Parkesburg Borough	3,375	3,593	3,687	3,974	4,260	4,551	4,802	5,009	5,184	1,497	40.6%
Penn Township	2,810	5,364	5,475	5,964	6,451	6,945	7,373	7,724	8,022	2,547	46.5%
Pennsbury Township	3,505	3,604	3,659	3,763	3,867	3,972	4,064	4,138	4,202	543	14.8%
Phoenixville Borough	14,795	16,440	16,658	18,696	20,725	22,481	24,002	25,051	25,710	9,052	54.3%
Pocopson Township	3,350	4,582	4,856	5,060	5,264	5,471	5,649	5,796	5,921	1,065	21.9%
Sadsbury Township	2,580	3,570	3,850	4,311	4,769	5,235	5,638	5,969	6,250	2,400	62.3%
Schuylkill Township	6,965	8,516	8,576	8,922	9,265	9,615	9,917	10,165	10,376	1,800	21.0%
South Coatesville Borough	995	1,303	1,435	1,574	1,713	1,853	1,975	2,075	2,160	725	50.5%
South Coventry Township	1,895	2,604	2,616	2,721	2,825	2,931	3,023	3,098	3,162	546	20.9%
Spring City Borough	3,305	3,323	3,322	3,514	3,705	3,898	4,066	4,204	4,321	999	30.1%
Thornbury Township	2,678	3,017	3,343	3,503	3,662	3,824	3,964	4,079	4,177	834	24.9%
Tredyffrin Township	29,065	29,332	29,559	30,232	30,900	31,578	32,165	32,648	33,059	3,500	11.8%
Upper Oxford Township	2,095	2,484	2,504	2,594	2,684	2,776	2,855	2,920	2,975	471	18.8%
Upper Uwchlan Township	6,850	11,227	11,545	12,179	12,809	13,449	14,004	14,459	14,845	3,300	28.6%
Uwchlan Township	16,575	18,088	19,072	19,763	20,451	21,149	21,754	22,251	22,672	3,600	18.9%
Valley Township	5,115	6,794	7,632	8,187	8,740	9,301	9,787	10,186	10,524	2,892	37.9%
Wallace Township	3,240	3,458	3,698	3,985	4,270	4,560	4,811	5,017	5,192	1,494	40.4%
Warwick Township	2,555	2,507	2,550	2,610	2,671	2,732	2,785	2,828	2,865	315	12.4%
West Bradford Township	10,775	12,223	12,779	13,519	14,255	15,003	15,651	16,183	16,634	3,855	30.2%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
West Brandywine Township	7,160	7,394	7,468	8,159	8,847	9,545	10,150	10,647	11,068	3,600	48.2%
West Caln Township	7,055	9,014	9,085	9,539	9,990	10,449	10,846	11,172	11,449	2,364	26.0%
West Chester Borough	17,861	18,461	19,842	20,361	20,876	21,400	21,853	22,225	22,542	2,700	13.6%
West Fallowfield Township	2,485	2,566	2,596	2,625	2,653	2,683	2,708	2,728	2,746	150	5.8%
West Goshen Township	20,495	21,866	23,137	23,713	24,284	24,868	25,369	25,786	26,137	3,000	13.0%
West Grove Borough	2,650	2,854	2,859	3,002	3,144	3,288	3,413	3,516	3,603	744	26.0%
West Marlborough Township	855	814	821	830	838	847	855	861	866	45	5.5%
West Nantmeal Township	2,030	2,170	2,190	2,294	2,397	2,502	2,592	2,667	2,730	540	24.7%
West Nottingham Township	2,634	2,722	2,706	2,879	3,051	3,225	3,377	3,501	3,606	900	33.3%
West Pikeland Township	3,550	4,024	4,085	4,324	4,562	4,803	5,013	5,184	5,330	1,245	30.5%
West Sadsbury Township	2,440	2,444	2,475	2,661	2,888	3,150	3,408	3,667	3,825	1,350	54.5%
West Vincent Township	3,170	4,567	5,038	5,230	5,422	5,616	5,784	5,923	6,040	1,002	19.9%
West Whiteland Township	16,500	18,274	18,450	19,266	20,077	20,901	21,614	22,201	22,698	4,248	23.0%
Westtown Township	10,352	10,827	10,913	11,426	11,936	12,454	12,902	13,271	13,583	2,670	24.5%
Willistown Township	10,015	10,497	10,905	11,177	11,448	11,724	11,962	12,158	12,324	1,419	13.0%
Delaware County	551,989	558,979	563,894	568,337	572,758	577,248	581,136	584,329	587,037	23,143	4.1%
Aldan Borough	4,315	4,152	4,165	4,186	4,208	4,230	4,248	4,264	4,277	112	2.7%
Aston Township	16,205	16,592	16,799	16,942	17,083	17,227	17,352	17,455	17,541	742	4.4%
Bethel Township	6,420	8,791	9,166	9,359	9,550	9,745	9,914	10,052	10,170	1,004	11.0%
Brookhaven Borough	7,985	8,006	8,078	8,138	8,198	8,259	8,311	8,355	8,391	313	3.9%
Chadds Ford Township	3,170	3,640	3,740	3,848	3,955	4,064	4,159	4,237	4,302	562	15.0%
Chester City	36,855	33,972	34,092	34,281	34,468	34,659	34,824	34,960	35,075	983	2.9%
Chester Heights Borough	2,481	2,531	2,626	2,647	2,667	2,688	2,706	2,721	2,733	107	4.1%
Chester Township	4,605	3,940	4,103	4,140	4,178	4,216	4,248	4,275	4,298	195	4.8%
Clifton Heights Borough	6,780	6,652	6,684	6,709	6,733	6,758	6,780	6,798	6,813	129	1.9%
Collingdale Borough	8,665	8,786	8,792	8,866	8,939	9,014	9,079	9,132	9,177	385	4.4%
Colwyn Borough	2,455	2,546	2,553	2,584	2,615	2,646	2,673	2,695	2,714	161	6.3%
Concord Township	11,235	17,231	17,663	18,150	18,635	19,127	19,554	19,904	20,201	2,538	14.4%
Darby Borough	10,300	10,687	10,687	10,756	10,825	10,896	10,956	11,006	11,049	362	3.4%
Darby Township	9,625	9,264	9,318	9,322	9,326	9,330	9,333	9,336	9,338	20	0.2%
East Lansdowne Borough	2,585	2,668	2,665	2,673	2,682	2,690	2,697	2,703	2,709	44	1.7%
Eddystone Borough	2,440	2,410	2,407	2,414	2,420	2,427	2,433	2,438	2,442	35	1.5%
Edgmont Township	3,915	3,987	4,069	4,214	4,358	4,504	4,631	4,735	4,823	754	18.5%
Folcroft Borough	6,980	6,606	6,637	6,631	6,625	6,619	6,614	6,610	6,606	-31	-0.5%
Glenolden Borough	7,475	7,153	7,173	7,194	7,215	7,236	7,255	7,270	7,283	110	1.5%
Haverford Township	49,608	48,491	49,057	49,279	49,500	49,724	49,918	50,078	50,213	1,156	2.4%
Lansdowne Borough	11,044	10,620	10,639	10,655	10,671	10,688	10,702	10,714	10,724	85	0.8%
Lower Chichester Township	3,590	3,469	3,477	3,488	3,499	3,510	3,519	3,527	3,534	57	1.6%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Marcus Hook Borough	2,315	2,397	2,397	2,415	2,433	2,451	2,466	2,479	2,490	93	3.9%
Marple Township	23,735	23,428	23,743	23,794	23,846	23,898	23,942	23,979	24,011	268	1.1%
Media Borough	5,530	5,327	5,363	5,445	5,526	5,608	5,679	5,738	5,788	425	7.9%
Middletown Township	16,065	15,807	15,998	16,185	16,371	16,560	16,724	16,858	16,972	974	6.1%
Millbourne Borough	945	1,159	1,162	1,178	1,194	1,210	1,223	1,235	1,244	82	7.1%
Morton Borough	2,715	2,669	2,695	2,707	2,720	2,732	2,743	2,752	2,760	65	2.4%
Nether Providence Township	13,456	13,706	13,808	13,893	13,977	14,063	14,138	14,199	14,251	443	3.2%
Newtown Township	11,705	12,216	12,754	12,849	12,943	13,038	13,121	13,189	13,246	492	3.9%
Norwood Borough	5,985	5,890	5,898	5,917	5,935	5,954	5,970	5,984	5,995	97	1.6%
Parkside Borough	2,265	2,328	2,334	2,349	2,365	2,380	2,394	2,405	2,414	80	3.4%
Prospect Park Borough	6,595	6,454	6,481	6,515	6,548	6,582	6,612	6,636	6,656	175	2.7%
Radnor Township	30,880	31,531	31,612	31,808	32,003	32,201	32,373	32,513	32,633	1,021	3.2%
Ridley Park Borough	7,195	7,002	7,035	7,071	7,106	7,143	7,174	7,200	7,221	186	2.6%
Ridley Township	30,790	30,768	31,053	31,129	31,205	31,281	31,348	31,402	31,449	396	1.3%
Rose Valley Borough	945	913	949	970	991	1,012	1,031	1,046	1,058	109	11.5%
Rutledge Borough	860	784	795	798	801	804	807	809	811	16	2.0%
Sharon Hill Borough	5,465	5,697	5,702	5,733	5,764	5,795	5,822	5,845	5,863	161	2.8%
Springfield Township	23,675	24,211	24,401	24,612	24,822	25,035	25,220	25,372	25,500	1,099	4.5%
Swarthmore Borough	6,170	6,194	6,211	6,249	6,287	6,325	6,359	6,386	6,409	198	3.2%
Thornbury Township	5,787	8,028	7,857	8,039	8,219	8,403	8,562	8,692	8,803	946	12.0%
Tinicum Township	4,355	4,091	4,109	4,113	4,117	4,120	4,124	4,126	4,129	20	0.5%
Trainer Borough	1,905	1,828	1,844	1,833	1,822	1,810	1,801	1,793	1,786	-58	-3.1%
Upland Borough	2,980	3,239	3,251	3,263	3,274	3,286	3,296	3,304	3,311	60	1.8%
Upper Chichester Township	16,845	16,738	17,003	17,177	17,350	17,526	17,678	17,803	17,909	906	5.3%
Upper Darby Township	81,821	82,795	82,878	83,699	84,521	85,354	86,073	86,662	87,167	4,289	5.2%
Upper Providence Township	10,510	10,142	10,448	10,592	10,735	10,881	11,007	11,110	11,198	750	7.2%
Yeadon Borough	11,762	11,443	11,523	11,528	11,533	11,539	11,543	11,547	11,550	27	0.2%
Montgomery County	748,978	799,874	819,264	840,934	863,327	884,387	903,114	918,918	932,820	113,556	13.9%
Abington Township	56,105	55,310	55,590	56,172	56,754	57,336	57,918	58,500	59,083	3,493	6.3%
Ambler Borough	6,425	6,417	6,505	6,657	6,810	6,963	7,116	7,269	7,422	917	14.1%
Bridgeport Borough	4,370	4,554	4,564	4,964	5,464	5,533	5,602	5,671	5,740	1,176	25.8%
Bryn Athyn Borough	1,350	1,375	1,392	1,408	1,423	1,439	1,453	1,464	1,474	82	5.9%
Cheltenham Township	36,880	36,793	37,014	37,364	37,714	38,146	38,578	39,092	39,607	2,593	7.0%
Collegeville Borough	4,930	5,089	5,287	5,360	5,432	5,506	5,569	5,622	5,666	379	7.2%
Conshohocken Borough	7,590	7,833	7,956	8,706	9,456	9,877	10,297	10,567	10,837	2,881	36.2%
Douglass Township	9,104	10,195	10,432	10,950	11,464	11,987	12,440	12,812	13,128	2,696	25.8%
East Greenville Borough	3,105	2,951	2,985	3,047	3,109	3,171	3,233	3,295	3,358	373	12.5%
East Norriton Township	13,211	13,590	14,082	14,256	14,430	14,606	14,759	14,884	14,990	908	6.4%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Franconia Township	11,525	13,064	13,241	13,798	14,355	14,912	15,469	16,026	16,584	3,343	25.2%
Green Lane Borough	580	508	500	508	515	523	530	535	540	40	8.0%
Hatboro Borough	7,390	7,360	7,411	7,591	7,770	7,952	8,110	8,240	8,349	938	12.7%
Hatfield Borough	2,605	3,290	3,306	3,342	3,378	3,415	3,447	3,473	3,495	189	5.7%
Hatfield Township	16,712	17,249	17,558	18,057	18,553	19,057	19,493	19,851	20,155	2,597	14.8%
Horsham Township	24,234	26,147	26,587	26,987	28,319	29,668	31,023	31,845	32,541	5,954	22.4%
Jenkintown Borough	4,475	4,422	4,431	4,467	4,504	4,541	4,572	4,599	4,621	190	4.3%
Lansdale Borough	16,070	16,269	16,512	17,019	17,523	18,035	18,479	18,843	19,152	2,640	16.0%
Limerick Township	13,535	18,074	18,798	19,854	20,904	21,970	22,894	23,653	24,296	5,498	29.2%
Lower Frederick Township	4,795	4,840	4,892	4,985	5,078	5,171	5,263	5,355	5,447	555	11.3%
Lower Gwynedd Township	10,420	11,405	11,548	11,732	11,916	12,100	12,284	12,468	12,651	1,103	9.6%
Lower Merion Township	58,740	57,825	58,177	59,676	61,027	62,135	62,983	63,732	64,231	6,054	10.4%
Lower Moreland Township	11,280	12,982	13,220	13,426	13,631	13,839	14,020	14,168	14,294	1,074	8.1%
Lower Pottsgrove Township	11,213	12,059	12,174	12,565	12,954	13,350	13,692	13,973	14,212	2,038	16.7%
Lower Providence Township	22,390	25,436	26,187	26,679	27,168	27,664	28,094	28,448	28,747	2,560	9.8%
Lower Salford Township	12,895	14,959	15,344	15,922	16,497	17,081	17,587	18,002	18,355	3,011	19.6%
Marlborough Township	3,110	3,178	3,308	3,405	3,501	3,599	3,683	3,753	3,812	504	15.2%
Montgomery Township	22,025	24,790	26,025	26,545	27,063	27,588	28,044	28,418	28,735	2,710	10.4%
Narberth Borough	4,235	4,282	4,309	4,378	4,447	4,517	4,578	4,627	4,669	360	8.4%
New Hanover Township	7,365	10,939	12,495	13,605	14,708	15,829	16,800	17,598	18,274	5,779	46.3%
Norristown Borough	31,280	34,324	34,412	34,777	35,212	35,737	36,344	36,942	37,543	3,131	9.1%
North Wales Borough	3,340	3,229	3,250	3,277	3,304	3,332	3,356	3,375	3,392	142	4.4%
Pennsburg Borough	2,730	3,843	3,873	3,942	4,010	4,080	4,140	4,190	4,232	359	9.3%
Perkiomen Township	7,095	9,139	9,245	9,486	9,726	9,969	10,180	10,354	10,501	1,256	13.6%
Plymouth Township	16,045	16,525	17,653	18,091	18,527	18,969	19,353	19,668	19,934	2,281	12.9%
Pottstown Borough	21,859	22,377	22,664	22,959	23,253	23,551	23,809	24,021	24,201	1,537	6.8%
Red Hill Borough	2,195	2,383	2,383	2,441	2,498	2,557	2,607	2,649	2,684	301	12.6%
Rockledge Borough	2,575	2,543	2,541	2,553	2,565	2,577	2,588	2,596	2,604	63	2.5%
Royersford Borough	4,245	4,752	4,771	4,893	5,014	5,136	5,243	5,330	5,404	633	13.3%
Salford Township	2,365	2,504	2,954	3,088	3,222	3,358	3,475	3,572	3,654	700	23.7%
Schwenksville Borough	1,395	1,385	1,398	1,422	1,445	1,469	1,489	1,506	1,521	123	8.8%
Skipack Township	9,915	13,715	14,992	15,475	15,958	16,441	16,924	17,407	17,891	2,899	19.3%
Souderton Borough	6,725	6,618	6,747	6,917	7,086	7,258	7,406	7,528	7,632	885	13.1%
Springfield Township	19,530	19,418	19,574	19,766	19,957	20,151	20,319	20,457	20,574	1,000	5.1%
Telford Borough (pt.)	2,474	2,665	2,668	2,720	2,771	2,823	2,868	2,905	2,937	269	10.1%
Towamencin Township	17,600	17,578	18,272	18,755	19,235	19,723	20,146	20,493	20,787	2,515	13.8%
Trappe Borough	3,210	3,509	3,553	3,656	3,758	3,862	3,952	4,026	4,089	536	15.1%
Upper Dublin Township	25,875	25,569	26,211	26,890	27,715	28,501	28,995	29,383	29,745	3,534	13.5%
Upper Frederick Township	3,140	3,523	3,564	3,662	3,760	3,860	3,946	4,016	4,076	512	14.4%

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Upper Gwynedd Township	14,245	15,552	15,928	16,116	16,304	16,492	16,679	16,866	17,053	1,125	7.1%
Upper Hanover Township	4,885	6,464	7,287	7,696	8,103	8,516	8,874	9,168	9,417	2,130	29.2%
Upper Merion Township	26,863	28,395	28,620	30,147	31,668	32,607	33,393	34,003	34,491	5,871	20.5%
Upper Moreland Township	24,990	24,015	24,231	24,522	24,812	25,107	25,362	25,572	25,749	1,518	6.3%
Upper Pottsgrove Township	4,105	5,315	5,483	5,774	6,065	6,357	6,649	6,941	7,233	1,750	31.9%
Upper Providence Township	15,395	21,219	23,460	24,622	25,777	26,951	27,967	28,802	29,510	6,050	25.8%
Upper Salford Township	3,025	3,299	3,378	3,507	3,636	3,765	3,894	4,024	4,154	776	23.0%
West Conshohocken Borough	1,445	1,320	1,381	1,411	1,442	1,472	1,499	1,521	1,539	158	11.4%
West Norriton Township	14,900	15,663	15,779	16,145	16,509	16,878	17,198	17,461	17,684	1,905	12.1%
West Pottsgrove Township	3,815	3,874	3,884	3,915	3,945	3,976	4,003	4,025	4,044	160	4.1%
Whitemarsh Township	16,702	17,349	17,663	18,503	19,040	19,486	19,859	20,197	20,476	2,813	15.9%
Whitpain Township	18,562	18,875	19,180	19,464	19,747	20,034	20,283	20,487	20,661	1,481	7.7%
Worcester Township	7,789	9,750	10,435	10,917	11,396	11,882	12,304	12,650	12,943	2,508	24.0%
Philadelphia County	1,517,550	1,526,006	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	128,690	8.2%
Central	100,188	117,132	126,629	132,848	137,233	143,015	148,841	153,321	157,035	30,406	24.0%
Central Northeast	72,179	78,266	79,870	81,333	82,568	83,813	84,123	84,490	84,713	4,843	6.1%
Lower Far Northeast	71,657	70,340	70,596	71,526	72,319	73,060	73,588	74,087	74,502	3,906	5.5%
Lower North	95,139	95,176	101,692	105,069	108,227	111,507	114,601	116,878	118,052	16,360	16.1%
Lower Northeast	93,471	100,232	102,654	103,621	104,301	104,837	105,110	105,080	105,424	2,770	2.7%
Lower Northwest	51,869	50,799	52,319	53,241	54,072	54,730	55,162	55,406	55,811	3,492	6.7%
Lower South	4,318	5,150	5,499	5,747	5,998	6,501	6,749	7,001	7,335	1,836	33.4%
Lower Southwest	41,642	42,117	42,462	43,288	43,711	44,054	44,854	45,183	45,439	2,977	7.0%
North	141,061	137,849	138,049	138,663	140,022	142,561	144,724	145,520	146,656	8,607	6.2%
North Delaware	96,005	100,631	101,251	102,210	102,553	102,944	102,909	103,041	103,280	2,029	2.0%
River Wards	66,321	68,489	70,385	72,380	73,004	74,203	75,613	76,270	76,951	6,566	9.3%
South	131,616	132,904	137,110	138,842	140,432	141,898	143,712	144,223	144,877	7,767	5.7%
University/Southwest	83,639	81,746	87,719	92,546	94,735	97,599	99,607	101,667	102,305	14,586	16.6%
Upper Far Northeast	64,469	66,605	67,986	68,387	69,071	69,893	69,943	70,370	70,660	2,674	3.9%
Upper North	154,560	144,381	145,913	146,533	147,898	149,046	149,501	150,207	150,422	4,509	3.1%
Upper Northwest	89,851	85,093	85,633	86,048	87,079	88,209	89,309	89,432	89,915	4,282	5.0%
West	111,973	105,642	106,922	107,403	108,060	109,844	112,163	114,009	115,200	8,278	7.7%
West Park	47,592	43,454	44,754	45,102	45,533	46,257	46,781	47,217	47,556	2,802	6.3%
Burlington County	423,397	448,734	450,226	459,344	468,428	475,978	482,560	488,026	492,709	42,483	9.4%
Bass River Township	1,510	1,443	1,449	1,483	1,516	1,550	1,580	1,604	1,624	175	12.1%
Beverly City	2,660	2,577	2,559	2,710	2,859	3,011	3,143	3,251	3,343	784	30.6%
Bordentown City	3,970	3,924	3,882	4,012	4,141	4,273	4,387	4,480	4,559	677	17.4%
Bordentown Township	8,375	11,367	11,935	11,965	11,996	12,027	12,053	12,075	12,094	159	1.3%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Burlington City	9,740	9,920	9,808	10,010	10,210	10,414	10,590	10,735	10,858	1,050	10.7%
Burlington Township	20,190	22,594	22,826	22,936	23,045	23,156	23,252	23,331	23,398	572	2.5%
Chesterfield Township	5,955	7,699	7,572	7,715	7,857	8,002	8,127	8,230	8,317	745	9.8%
Cinnaminson Township	14,595	15,569	16,651	16,880	17,108	17,339	17,540	17,704	17,844	1,193	7.2%
Delanco Township	3,335	4,283	4,541	4,644	4,746	4,849	4,939	5,013	5,075	534	11.8%
Delran Township	15,535	16,896	16,767	16,959	17,150	17,343	17,511	17,649	17,766	999	6.0%
Eastampton Township	6,205	6,069	6,011	6,450	6,887	7,331	7,715	8,031	8,298	2,287	38.0%
Edgewater Park Township	7,865	8,881	8,788	8,995	9,200	9,409	9,590	9,738	9,864	1,076	12.2%
Evesham Township	42,275	45,538	45,577	47,546	49,519	49,847	50,175	50,504	50,831	5,254	11.5%
Fieldsboro Borough	522	540	532	539	547	554	560	565	570	38	7.1%
Florence Township	10,745	12,109	12,688	12,864	13,038	13,216	13,369	13,495	13,602	914	7.2%
Hainesport Township	4,125	6,110	6,053	6,582	7,108	7,643	8,105	8,486	8,808	2,755	45.5%
Lumberton Township	10,455	12,559	12,428	12,712	12,995	13,281	13,530	13,734	13,907	1,479	11.9%
Mansfield Township	5,090	8,544	8,574	8,735	8,896	9,058	9,200	9,315	9,414	840	9.8%
Maple Shade Township	19,080	19,131	18,963	19,071	19,178	19,287	19,381	19,459	19,524	561	3.0%
Medford Lakes Borough	4,175	4,146	4,085	4,097	4,109	4,122	4,132	4,141	4,149	64	1.6%
Medford Township	22,250	23,033	23,414	23,916	24,415	24,922	25,361	25,721	26,027	2,613	11.2%
Moorestown Township	19,020	20,726	20,564	20,745	20,925	21,107	21,265	21,395	21,505	941	4.6%
Mount Holly Township	10,728	9,536	9,493	9,620	9,747	9,875	9,987	10,078	10,156	663	7.0%
Mount Laurel Township	40,225	41,864	41,842	42,342	42,839	43,346	43,784	44,146	44,449	2,607	6.2%
New Hanover Township	9,744	7,385	8,078	7,927	7,777	7,625	7,493	7,384	7,292	-786	-9.7%
North Hanover Township	7,347	7,678	7,609	8,049	8,486	8,930	9,315	9,630	9,898	2,289	30.1%
Palmyra Borough	7,090	7,398	7,314	7,420	7,525	7,632	7,725	7,801	7,865	551	7.5%
Pemberton Borough	1,210	1,409	1,383	1,390	1,397	1,404	1,410	1,415	1,419	36	2.6%
Pemberton Township	28,575	27,912	27,771	28,279	28,784	29,297	29,741	30,106	30,416	2,645	9.5%
Riverside Township	7,910	8,079	7,997	8,254	8,511	8,771	8,996	9,181	9,338	1,341	16.8%
Riverton Borough	2,760	2,779	2,748	2,753	2,758	2,763	2,768	2,771	2,774	26	0.9%
Shamong Township	6,465	6,490	6,419	6,494	6,568	6,644	6,709	6,763	6,809	390	6.1%
Southampton Township	10,388	10,464	10,337	10,735	11,131	11,533	11,881	12,167	12,409	2,072	20.0%
Springfield Township	3,225	3,414	3,355	3,386	3,417	3,448	3,475	3,498	3,517	162	4.8%
Tabernacle Township	7,170	6,949	6,954	7,051	7,147	7,244	7,329	7,398	7,457	503	7.2%
Washington Township	621	687	674	681	689	697	703	708	713	39	5.8%
Westampton Township	7,217	8,813	8,726	8,932	9,137	9,345	9,525	9,673	9,799	1,073	12.3%
Willingboro Township	33,010	31,629	31,270	31,831	32,391	32,959	33,451	33,855	34,198	2,928	9.4%
Woodland Township	1,290	1,788	1,793	1,833	1,873	1,913	1,948	1,977	2,001	208	11.6%
Wrightstown Borough	750	802	796	801	806	811	815	819	822	26	3.3%
Camden County	508,929	513,657	510,923	514,006	517,073	520,189	522,886	525,101	526,997	16,074	3.1%
Audubon Borough	9,180	8,819	8,730	8,699	8,668	8,637	8,609	8,587	8,568	-162	-1.9%

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Audubon Park Borough	1,100	1,023	1,011	1,008	1,006	1,003	1,001	999	997	-14	-1.4%
Barrington Borough	7,084	6,983	6,817	6,816	6,815	6,814	6,813	6,812	6,811	-6	-0.1%
Bellmawr Borough	11,265	11,583	11,462	11,464	11,467	11,469	11,470	11,471	11,472	10	0.1%
Berlin Borough	6,150	7,588	7,590	7,688	7,785	7,884	7,970	8,040	8,100	510	6.7%
Berlin Township	5,290	5,357	5,434	5,439	5,444	5,448	5,453	5,456	5,459	25	0.5%
Brooklawn Borough	2,355	1,955	1,933	1,939	1,945	1,951	1,956	1,960	1,964	31	1.6%
Camden City	79,905	77,344	76,119	76,512	76,904	77,302	77,643	77,929	78,169	2,050	2.7%
Cherry Hill Township	69,960	71,045	71,340	71,903	72,462	73,031	73,523	73,927	74,270	2,930	4.1%
Chesilhurst Borough	1,520	1,634	1,634	1,632	1,631	1,629	1,628	1,627	1,626	-8	-0.5%
Clementon Borough	4,985	5,000	4,947	4,981	5,014	5,048	5,077	5,102	5,122	175	3.5%
Collingswood Borough	14,326	13,926	14,000	13,997	13,994	13,991	13,988	13,986	13,984	-16	-0.1%
Gibbsboro Borough	2,435	2,274	2,244	2,242	2,239	2,236	2,234	2,233	2,231	-13	-0.6%
Gloucester City	11,484	11,456	11,329	11,326	11,323	11,320	11,318	11,316	11,314	-15	-0.1%
Gloucester Township	64,350	64,634	63,939	64,859	65,777	66,707	67,514	68,176	68,737	4,798	7.5%
Haddon Heights Borough	7,545	7,473	7,514	7,474	7,434	7,393	7,358	7,329	7,305	-209	-2.8%
Haddon Township	14,651	14,707	14,543	14,580	14,617	14,655	14,688	14,714	14,737	194	1.3%
Haddonfield Borough	11,661	11,593	11,414	11,412	11,410	11,408	11,407	11,405	11,404	-10	-0.1%
Hi-Nella Borough	1,035	870	860	860	859	859	859	858	858	-2	-0.2%
Laurel Springs Borough	1,970	1,908	1,884	1,883	1,882	1,882	1,881	1,880	1,880	-4	-0.2%
Lawnside Borough	2,692	2,945	2,919	2,917	2,915	2,913	2,911	2,909	2,908	-11	-0.4%
Lindenwold Borough	17,410	17,613	17,458	17,449	17,441	17,432	17,424	17,418	17,413	-45	-0.3%
Magnolia Borough	4,405	4,341	4,298	4,290	4,282	4,274	4,267	4,260	4,256	-42	-1.0%
Merchantville Borough	3,800	3,821	3,778	3,778	3,777	3,777	3,777	3,776	3,776	-2	-0.1%
Mount Ephraim Borough	4,495	4,676	4,639	4,637	4,636	4,634	4,633	4,632	4,631	-8	-0.2%
Oaklyn Borough	4,188	4,038	3,992	4,001	4,010	4,019	4,026	4,033	4,038	46	1.2%
Pennsauken Township	35,737	35,885	35,628	35,924	36,219	36,518	36,778	36,990	37,171	1,543	4.3%
Pine Hill Borough	10,880	10,233	10,510	10,501	10,492	10,482	10,474	10,468	10,462	-48	-0.5%
Pine Valley Borough	20	12	12	12	12	12	12	12	12	0	0.0%
Runnemede Borough	8,535	8,468	8,381	8,380	8,378	8,377	8,376	8,375	8,374	-7	-0.1%
Somerdale Borough	5,192	5,151	5,460	5,444	5,427	5,411	5,397	5,385	5,375	-85	-1.6%
Stratford Borough	7,270	7,040	7,013	7,047	7,081	7,116	7,146	7,170	7,191	178	2.5%
Tavistock Borough	24	5	5	5	5	5	5	5	5	0	0.0%
Voorhees Township	28,130	29,131	29,370	29,305	29,240	29,174	29,117	29,071	29,031	-339	-1.2%
Waterford Township	10,494	10,649	10,753	10,749	10,744	10,740	10,736	10,733	10,747	-6	-0.1%
Winslow Township	34,611	39,499	39,019	39,910	40,797	41,698	42,478	43,119	43,662	4,643	11.9%
Woodlynne Borough	2,795	2,978	2,944	2,943	2,941	2,940	2,939	2,938	2,937	-7	-0.2%
Gloucester County	255,719	288,288	291,479	307,766	323,969	340,425	354,677	366,383	376,308	84,829	29.1%
Clayton Borough	7,135	8,179	8,493	9,013	9,531	10,057	10,512	10,886	11,203	2,710	31.9%

County / Municipality	2000 Census	2010 Census	2015 Census							2015-2045	
			Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Deptford Township	26,770	30,561	30,569	31,601	32,628	33,671	34,574	35,316	35,945	5,376	17.6%
East Greenwich Township	5,430	9,555	10,380	10,798	11,214	11,637	12,003	12,303	12,558	2,178	21.0%
Elk Township	3,615	4,216	4,156	4,717	5,274	5,841	6,331	6,734	7,076	2,920	70.3%
Franklin Township	15,470	16,820	16,669	17,714	18,753	19,808	20,722	21,473	22,110	5,441	32.6%
Glassboro Borough	18,970	18,579	19,216	20,380	21,538	22,715	23,733	24,570	25,279	6,063	31.6%
Greenwich Township	4,880	4,899	4,857	4,942	5,027	5,113	5,188	5,249	5,301	444	9.1%
Harrison Township	8,785	12,417	12,984	14,456	15,920	17,407	18,695	19,753	20,650	7,666	59.0%
Logan Township	6,035	6,042	5,983	6,217	6,450	6,687	6,892	7,061	7,203	1,220	20.4%
Mantua Township	14,217	15,217	15,054	16,334	17,608	18,901	20,021	20,941	21,721	6,667	44.3%
Monroe Township	28,967	36,129	36,862	39,459	42,040	44,662	46,934	48,799	50,381	13,519	36.7%
National Park Borough	3,205	3,036	2,999	3,053	3,107	3,162	3,210	3,249	3,282	283	9.4%
Newfield Borough	1,615	1,553	1,534	1,561	1,588	1,615	1,639	1,659	1,675	141	9.2%
Paulsboro Borough	6,160	6,097	5,989	6,054	6,118	6,184	6,241	6,287	6,327	338	5.6%
Pitman Borough	9,330	9,011	8,898	9,092	9,285	9,482	9,652	9,791	9,910	1,012	11.4%
South Harrison Township	2,415	3,162	3,138	3,397	3,655	3,917	4,144	4,331	4,489	1,351	43.1%
Swedesboro Borough	2,055	2,584	2,613	2,686	2,758	2,831	2,895	2,947	2,991	378	14.5%
Washington Township	48,155	48,559	47,862	49,302	50,738	52,192	53,452	54,488	55,366	7,504	15.7%
Wenonah Borough	2,315	2,278	2,254	2,318	2,382	2,447	2,503	2,549	2,588	334	14.8%
West Deptford Township	19,370	21,677	21,420	22,506	23,586	24,683	25,634	26,414	27,076	5,656	26.4%
Westville Borough	4,500	4,288	4,224	4,338	4,451	4,566	4,665	4,747	4,816	592	14.0%
Woodbury City	10,305	10,174	10,020	10,105	10,190	10,276	10,351	10,412	10,464	444	4.4%
Woodbury Heights Borough	2,990	3,055	3,010	3,054	3,098	3,143	3,181	3,213	3,240	230	7.6%
Woolwich Township	3,030	10,200	12,295	14,669	17,030	19,428	21,505	23,211	24,657	12,362	100.5%
Mercer County	320,527	367,511	371,398	377,328	383,227	389,219	394,407	398,669	402,283	30,885	8.3%
East Windsor Township	24,915	27,190	27,603	28,068	28,531	29,002	29,409	29,743	30,027	2,424	8.8%
Ewing Township	35,710	35,790	36,486	37,076	37,660	38,254	38,769	39,192	39,550	3,064	8.4%
Hamilton Township	87,109	88,464	89,030	90,099	91,163	92,243	93,178	93,947	94,598	5,568	6.3%
Hightstown Borough	5,215	5,494	5,517	5,562	5,607	5,653	5,693	5,725	5,753	236	4.3%
Hopewell Borough	2,035	1,922	1,929	1,932	1,936	1,939	1,942	1,944	1,946	17	0.9%
Hopewell Township	16,105	18,302	18,606	19,460	20,310	21,174	21,921	22,535	23,056	4,450	23.9%
Lawrence Township	29,160	33,472	33,242	33,511	33,779	34,052	34,287	34,481	34,645	1,403	4.2%
Pennington Borough	2,695	2,585	2,598	2,654	2,710	2,766	2,816	2,856	2,890	292	11.2%
Princeton**		28,572	29,603	30,084	30,559	31,044	31,463	31,808	32,100	2,497	8.4%
Robbinsville	10,275	13,642	14,176	14,784	15,390	16,006	16,538	16,978	17,347	3,171	22.4%
Trenton City	85,403	84,913	84,225	85,213	86,197	87,194	88,059	88,767	89,372	5,147	6.1%
West Windsor Township	21,905	27,165	28,383	28,885	29,385	29,892	30,332	30,693	30,999	2,616	9.2%

Source: Delaware Valley Regional Planning Commission, June 2016. ** In January 2013, Princeton Township and Princeton Borough, in Mercer County, merged to form one single municipality, known simply as Princeton.

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Geographic Area Covered: DVRPC's 9-county region, including Burlington, Camden, Gloucester, and Mercer counties in New Jersey, and Bucks, Chester, Delaware, Montgomery, and Philadelphia counties in Pennsylvania.

Key Words: population, population forecasts, age-cohort survival model, birth rates, survival rates, migration, Connections 2045, long-range plan

ABSTRACT: This report presents the Delaware Valley Regional Planning Commission's (DVRPC's) adopted 2045 county- and municipal-level population forecasts and describes the method used to develop them. Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of DVRPC's long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. DVRPC last adopted forecasts through the year 2040 in January 2012. Since that time, the Census Bureau has released 2015 population estimates, and both the nation and the region have continued to recover from the significant economic recession that officially began in December 2007 and ended in June 2009.

In order to incorporate the 2015 Census estimates and maintain a 30-year planning horizon, DVRPC has prepared 2045 population forecasts for its member counties and municipalities. These forecasts were formally adopted by the DVRPC Board on July 28, 2016, and serve as the basis for DVRPC planning and modeling activities. Employment forecasts in five-year increments through 2045 are scheduled to be adopted in October 2016.

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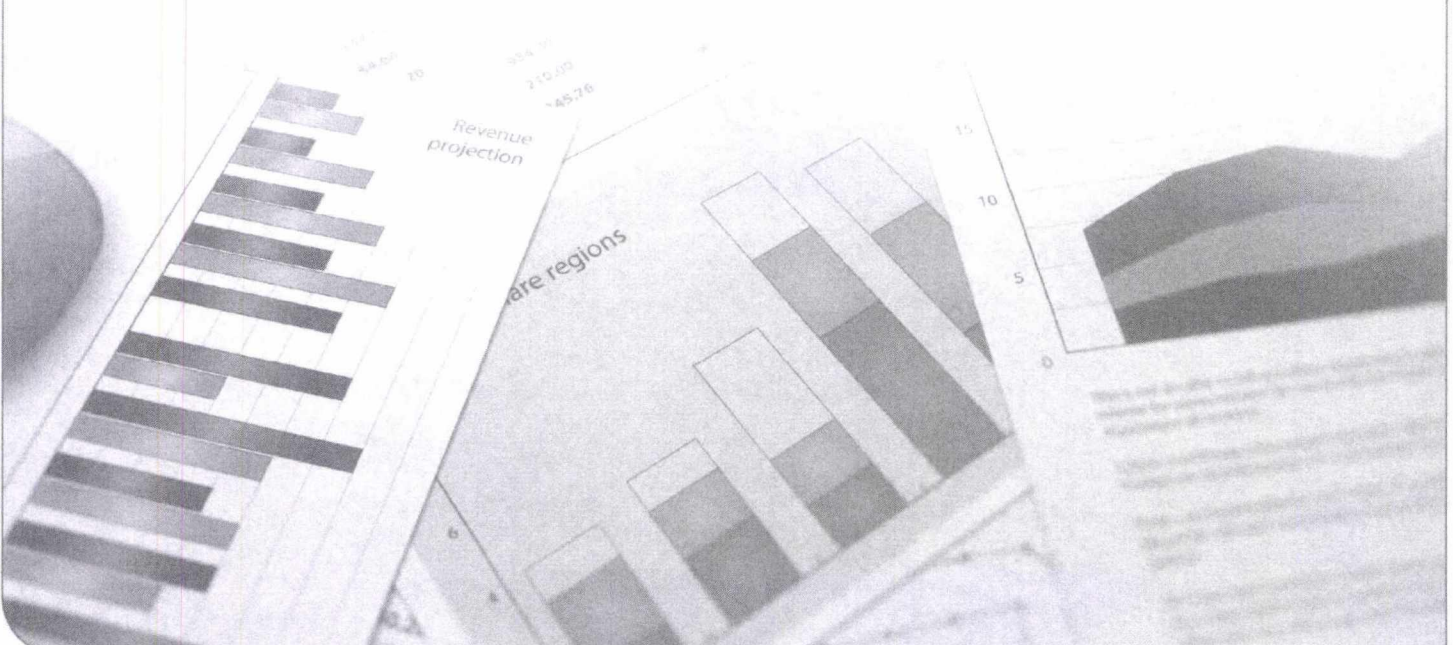
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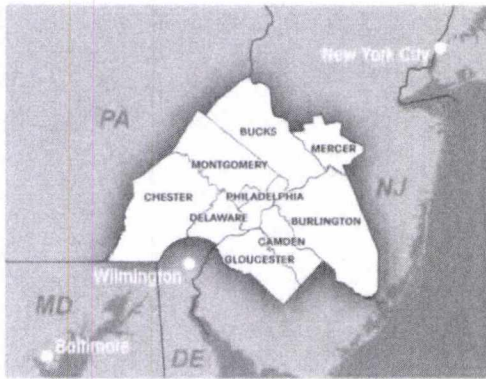


ADR 023 | October 2016

Analytical Data Report

Regional, County, and
Municipal Employment
Forecasts, 2015-2045





The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region – leading the way to a better future.



The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources, including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA); the Pennsylvania and New Jersey departments of transportation; and DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

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As the region's metropolitan planning organization, DVRPC provides technical assistance and services to its member state and local governments. *Delaware Valley Data* is our periodic series of free data bulletins, analytical data reports, data reference guides, and data snapshots.

Introduction

As a part of our long-range planning activities, DVRPC is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. Population forecasts in five-year increments between 2015 and 2045 were adopted by the DVRPC Board on July 28, 2016. This document presents employment forecasts in five-year increments between 2015 and 2045, developed by DVRPC in coordination with its member county planning staffs. These population and employment forecasts will support the region's 2045 long-range plan, scheduled for adoption in July 2017, and serve as the basis for DVRPC's planning and modeling activities.

2010 and 2013 Employment Base

DVRPC has traditionally based its long-range employment forecasts on employment data from the American Association of State Highway and Transportation Officials' (AASHTO) Census Transportation Planning Products (CTPP). However, 2010 CTPP data was not released until mid-2013, too late to be used for forecasting purposes prior to the 2013 adoption of the current Connections 2040 Long Range Plan. Additionally, changes in the method for calculating CTPP data has increased the margins of error and made it a less reliable source of employment data for small geographies. Subsequently, DVRPC staff researched and compared several sources of employment data, including government sources (such as ES-202 data, the BLS' Quarterly Census of Employment and Wages, and the Current Employment Statistics survey) and private proprietary sources (including Dun and Bradstreet). The National Establishment Time-Series (NETS), produced by Walls and Associates, was determined to be superior to other sources in terms of coverage, accuracy, and the provision of locational data.

The NETS database is essentially a "cleaned-up" version of the Dun and Bradstreet database. Using each company's unique DUNS number (or numbers, in cases where separate divisions within a company have unique DUNS numbers), Walls and 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 non-profits). 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 government sources of employment data, the NETS database includes sole proprietors, part-time jobs, 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. As a base for the 2040 forecasts, DVRPC and county planning staffs reviewed 2000 and 2010 employment data from a NETS database that was acquired in 2013.

In March 2016, DVRPC acquired an updated NETS dataset that included both revised 2010 and 2013 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 2010 data and the 2013 data to eliminate any remaining duplicates and correct obvious errors, using resources that included CoStar, company web sites, and on-line business directories. The data was then reviewed by the region's county planning staffs, 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. While the counties were reviewing the employment data, DVRPC staff continued to refine the NETS GIS dataset, by comparing TomTom results with other geocoding services, and by manually checking the location of hundreds of significant employers.

2015 Employment Estimates

Estimates of the 2015 employment were then calculated, based on both the changes in NETS employment by sector in each county between 2010 and 2013, and the employment change in each county between 2010 and 2015 released by the BLS in September 2016. The estimated 2015 county employment was allocated to municipalities based on the proportion of the county's employment that was present in each municipality in 2013.

2045 Employment Forecasts

Employment forecasts in five-year increments through 2045 were developed using a similar method as was used in previous forecasting rounds. Various studies and past experience have shown that there is a direct relationship between the number of workers living in a region (which is a function of population) and the number of jobs. To forecast future employment, DVRPC determined an expected future ratio of employment to population for each county, based on the known ratio in 2015. These ratios were applied to the Commission's adopted 2045 population forecasts, to create employment forecasts for each county, in five-year increments through 2045.

County-level employment forecasts between 2020 and 2040 were disaggregated to the municipal level based on the proportion of each county's employment that was expected to be in each municipality by DVRPC's adopted 2040 forecasts, as adjusted by the differences between the Commission's adopted 2015 forecast and the 2015 NETS employment estimates. The proportion of each county's employment expected to be in each municipality in 2045 was forecast based on the linear trend in the proportion from 2015 to 2040. The draft employment forecasts in five-year increments were then reviewed by county planning staffs, and final revisions were made based on their recommendations.

Military employment, which DVRPC staff believes was not accurately reflected in the NETS database, was accounted for by adding the military employment in each municipality reported in the 2006-2010 five-

year CTPP estimates to the 2015 employment estimate and the future employment forecasts. Given the difficulty of forecasting future military employment, the number of military employees was kept stable in future years.

Table 1 summarizes regional and county employment forecasts in five-year increments through 2045, and municipal-level forecasts are provided in Appendix A. Table 2 identifies the 20 municipalities expected to gain the most employees between 2015 and 2045 in absolute numbers, while Table 3 identifies municipalities with the highest forecast percentage change in employment. Figure 1 illustrates the DVRPC region's 2045 municipal employment forecasts, and Figures 2 and 3 illustrate absolute and percent change in employment by municipality between 2015 and 2045.

Figure 4 illustrates the absolute increase in employment per square mile in each of the region's 352 municipalities and 18 City of Philadelphia planning districts. This map highlights not only where employment is increasing, but also the impact of relatively small increases on employment density in many of the region's centers. Employment density is forecast to increase not only in the City of Philadelphia, but also in many of the region's smaller boroughs, including Conshohocken and West Conshohocken boroughs in Montgomery County; Dublin, Pennel, and Ivyland boroughs in Bucks County; and Kennett Square, Phoenixville, and Downingtown boroughs in Chester County.

Highlights include the following:

- The DVRPC region is forecast to gain almost 373,000 jobs between 2015 and 2045 (an increase of almost 12 percent), with much of this growth concentrated in the suburbs.
- The region's five southeastern Pennsylvania counties are forecast to experience a 12.6 percent increase in employment, while employment in the four New Jersey counties is expected to increase by 9.8 percent.
- The largest percent increases are forecast in Gloucester County in New Jersey and Chester County in Pennsylvania, where employment is forecast to increase by 29 and 28 percent, respectively.
- The largest absolute increase in employment is forecast for Chester County, expected to gain 87,800 employees. Other counties forecast to see a significant number of additional employees include Montgomery County (expected to gain almost 82,000 employees) and Philadelphia (with a forecasted increase of almost 64,000 jobs).
- Both Philadelphia and Camden City, New Jersey, are forecast to gain employment, with forecasted percentage increases of 8.3 percent and 10.1 percent, respectively. The region's other two core cities are expected to see their employment stabilize and increase slightly, with a 2.8 percent increase in employment in Trenton, New Jersey, and a 2.6 percent increase in Chester City, Pennsylvania.

Summary

Population and employment forecasts are a critical component of long-range land use and transportation planning. This report presents the method used to develop 2045 and interim year employment forecasts, adopted by the DVRPC Board on October 27, 2016.

Data from the National Establishments Time Series (NETS) database served as the base for the 2045 employment forecasts. In March 2016, DVRPC acquired an updated NETS database that included 2013 employment data and revised 2010 data. The 2010 and 2013 employment data was reviewed and revised by DVRPC staff, utilizing resources that included CoStar, on-line business directories, company websites and, when appropriate, direct telephone calls. The revised data was then sent to the county planning staffs for additional revision. Additionally, during the summer of 2016, DVRPC acquired improved geocoding resources that allowed staff to further correct the spatial locations of employers.

Based on changes in the NETS employment between 2010 and 2013, and changes in employment in each county between 2010 and 2015 as reported by the U.S. Bureau of Labor Statistics (BLS), 2015 employment was estimated by county and municipality. Given that studies have shown that there is a direct relationship between the number of workers living in an area and the number of jobs, employment forecasts were calculated in five-year increments through 2045, by estimating a future ratio of population to employment in each county and applying it to DVRPC's adopted population forecasts.

Employment in the nine-county region is forecast to increase by almost 12 percent between 2015 and 2045, with the greatest absolute increases in employment expected in Chester, Montgomery, and Philadelphia counties and the greatest percentage increases forecast in Gloucester County, New Jersey, and Chester County, Pennsylvania. Together with the 2045 population forecasts adopted by the DVRPC Board in July 2016, these employment forecasts will serve as the basis for DVRPC's planning and modeling activities, and support the region's 2045 long-range plan, scheduled for adoption in July 2017.

Table 1: 2045 Employment Forecasts by County

County	2015 Employment	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Forecasted Absolute Change, 2015-2045	Forecasted Percent Change, 2015-2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	38,393	11.9%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	87,800	28.4%
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	10,996	4.1%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	81,942	14.1%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	63,978	8.3%
Five Pennsylvania Counties	2,255,680	2,310,874	2,364,147	2,419,171	2,467,523	2,506,728	2,538,789	283,109	12.6%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	22,324	9.3%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	8,287	3.1%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	35,304	29.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	23,789	8.3%
Four New Jersey Counties	912,557	930,545	948,431	965,698	979,816	991,943	1,002,261	89,704	9.8%
Nine DVRPC Counties	3,168,237	3,241,419	3,312,578	3,384,869	3,447,339	3,498,671	3,541,050	372,813	11.8%

Source: Delaware Valley Regional Planning Commission, October 2016.

Table 2: Municipalities with the Greatest Forecasted Absolute Change in Employment, 2015–2045

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Upper Merion Township/ Montgomery	9,470	11	Plymouth Township/ Montgomery	4,500
2	Horsham Township/ Montgomery	8,660	12	Woolwich Township/ Gloucester	4,338
3	East Whiteland Township/ Chester	7,224	13	Camden City/ Camden	4,206
4	Uwchlan Township/ Chester	6,737	14	West Deptford Township/ Gloucester	3,844
5	Tredyffrin Township/ Chester	6,625	15	West Windsor Township/ Mercer	3,713
6	West Whiteland Township/ Chester	6,259	16	Hopewell Township/ Mercer	3,712
7	West Goshen Township/ Chester	5,459	17	Phoenixville Borough/ Chester	3,621
8	Conshohocken Borough/ Montgomery	5,000	18	Lower Merion Township/ Montgomery	3,500
9	Monroe Township/ Camden	4,999	19	Mt. Laurel Township/ Burlington	3,444
10	Upper Providence Township/ Montgomery	4,520	20	Upper Dublin Township/Bucks	3,400

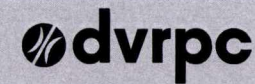
Source: Delaware Valley Regional Planning Commission, October 2016. Does not include Philadelphia, which is both a county and a municipality.

Table 3: Municipalities with the Greatest Forecasted Percentage Change in Employment, 2015–2045

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Woolwich Township/ Gloucester	164%	11	Parkesburg Borough/ Chester	59%
2	Modena Borough/ Chester	125%	12	West Sadsbury Township/ Chester	58%
3	Elk Township/ Gloucester	92%	13	Mantua Township/ Gloucester	57%
4	Dublin Borough/ Bucks	84%	14	Honey Brook Borough/ Chester	55%
5	Lower Oxford Township/ Chester	82%	15	Conshohocken Borough/ Montgomery	53%
6	West Brandywine Township/ Chester	77%	16	Wallace Township/ Chester	53%
7	Elverson Borough/ Chester	72%	17	Phoenixville Borough/ Chester	53%
8	East Vincent Township/ Chester	68%	18	West Nottingham Township/ Chester	53%
9	Harrison Township/ Gloucester	64%	19	Sellersville Borough/ Bucks	52%
10	South Coventry Township/ Chester	61%	20	Upper Oxford Township/ Chester	52%

Source: Delaware Valley Regional Planning Commission, October, 2016. Does not include Philadelphia, which is both a county and a municipality.

**Figure 1:
2045 Municipal Employment Forecast**



Employees

- 1,000 or Fewer
- 1,001 to 2,500
- 2,501 to 5,000
- 5,001 to 10,000
- More than 10,000

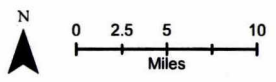
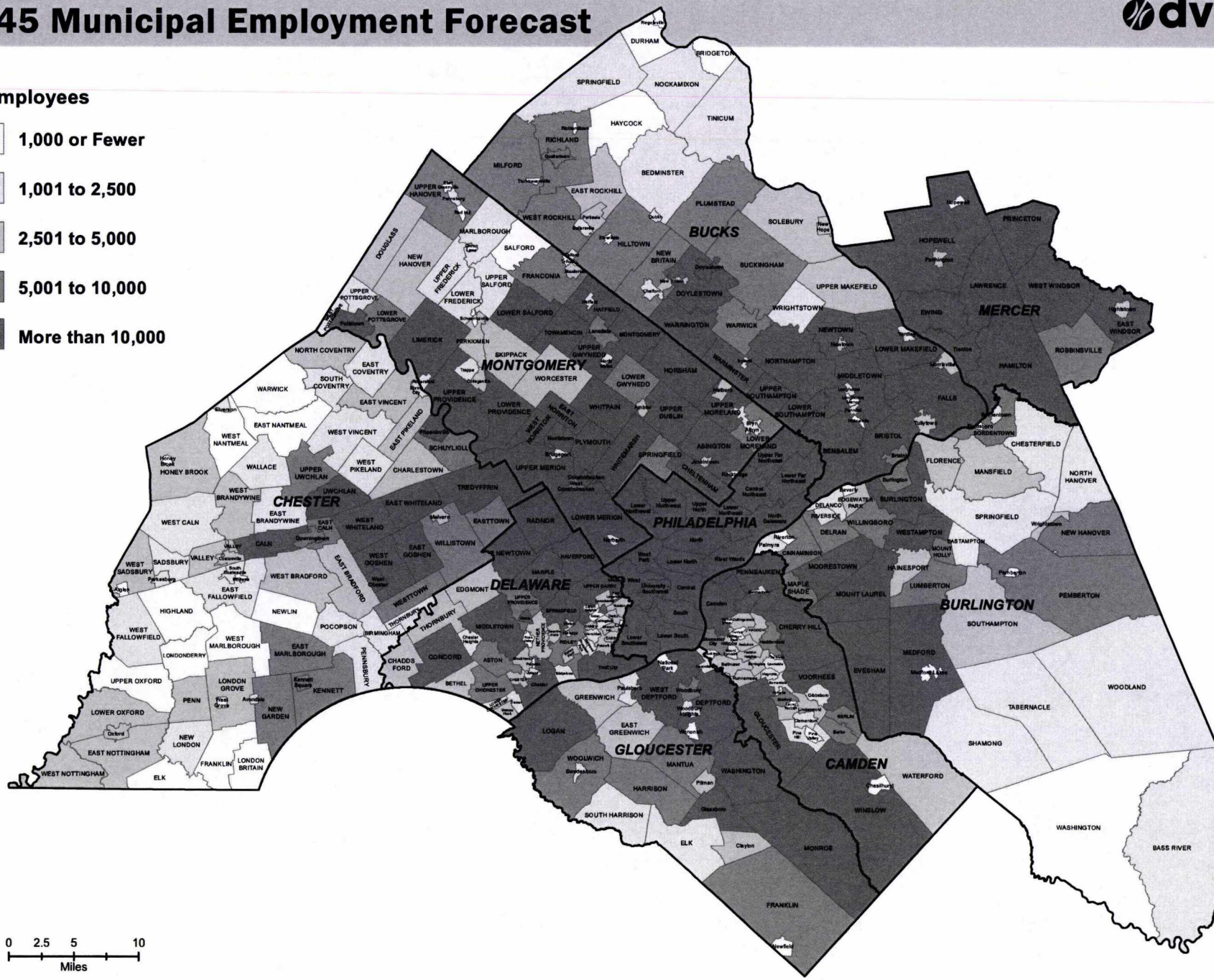
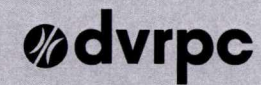


Figure 2:
2045 Municipal Employment Forecast
Absolute Change: 2015–2045



Employees

- 0 or Fewer
- 1 to 1,000
- 1,001 to 2,000
- 2,001 to 3,000
- More than 3,000

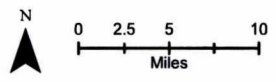
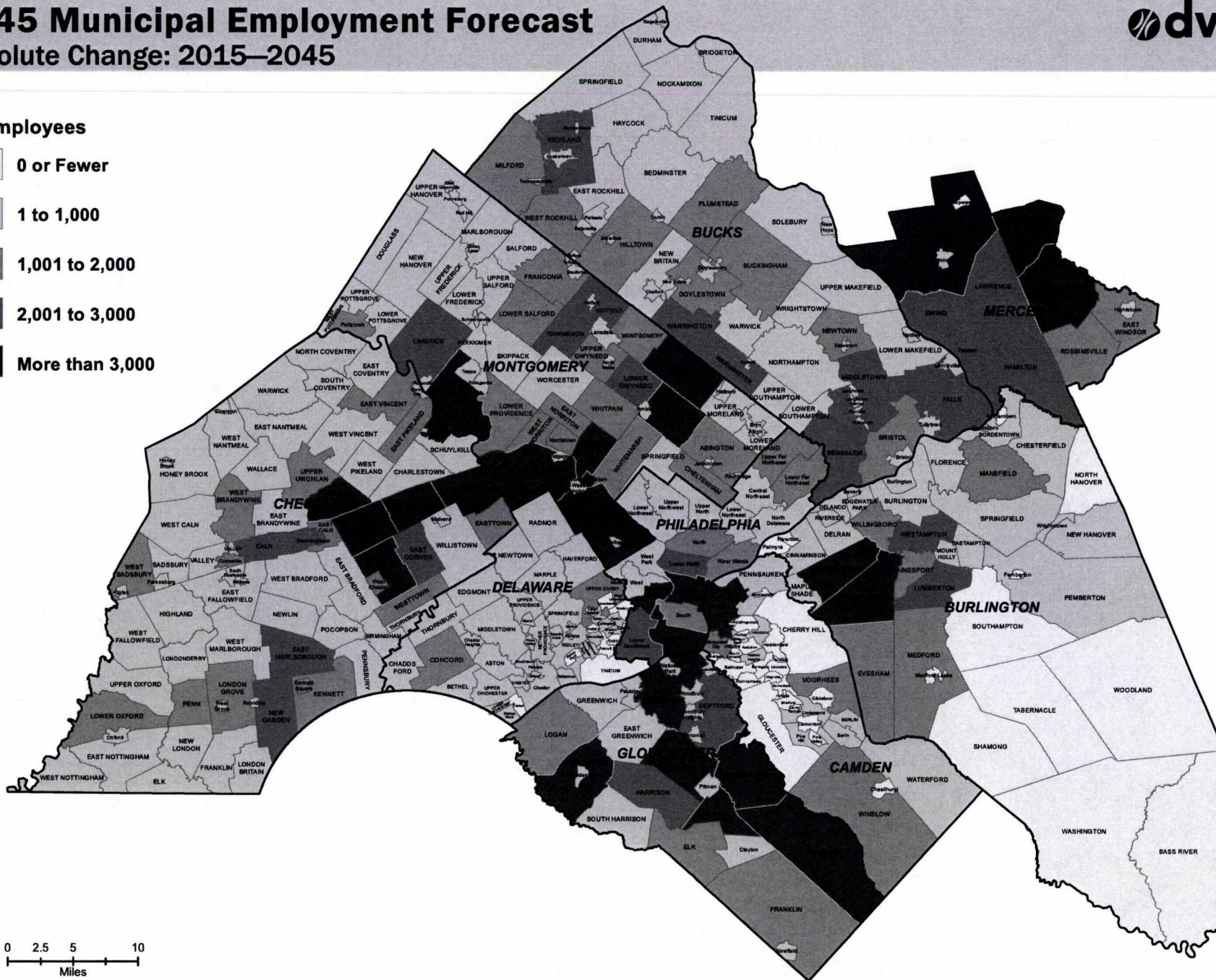


Figure 3:
2045 Municipal Employment Forecast
Percentage Change: 2015–2045



- Stable (-5% to +5%)
- Moderate Growth (+6% to +25%)
- Significant Growth (+26% to +50%)
- Exceptional Growth (Above +50%)

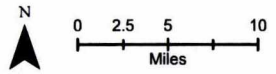
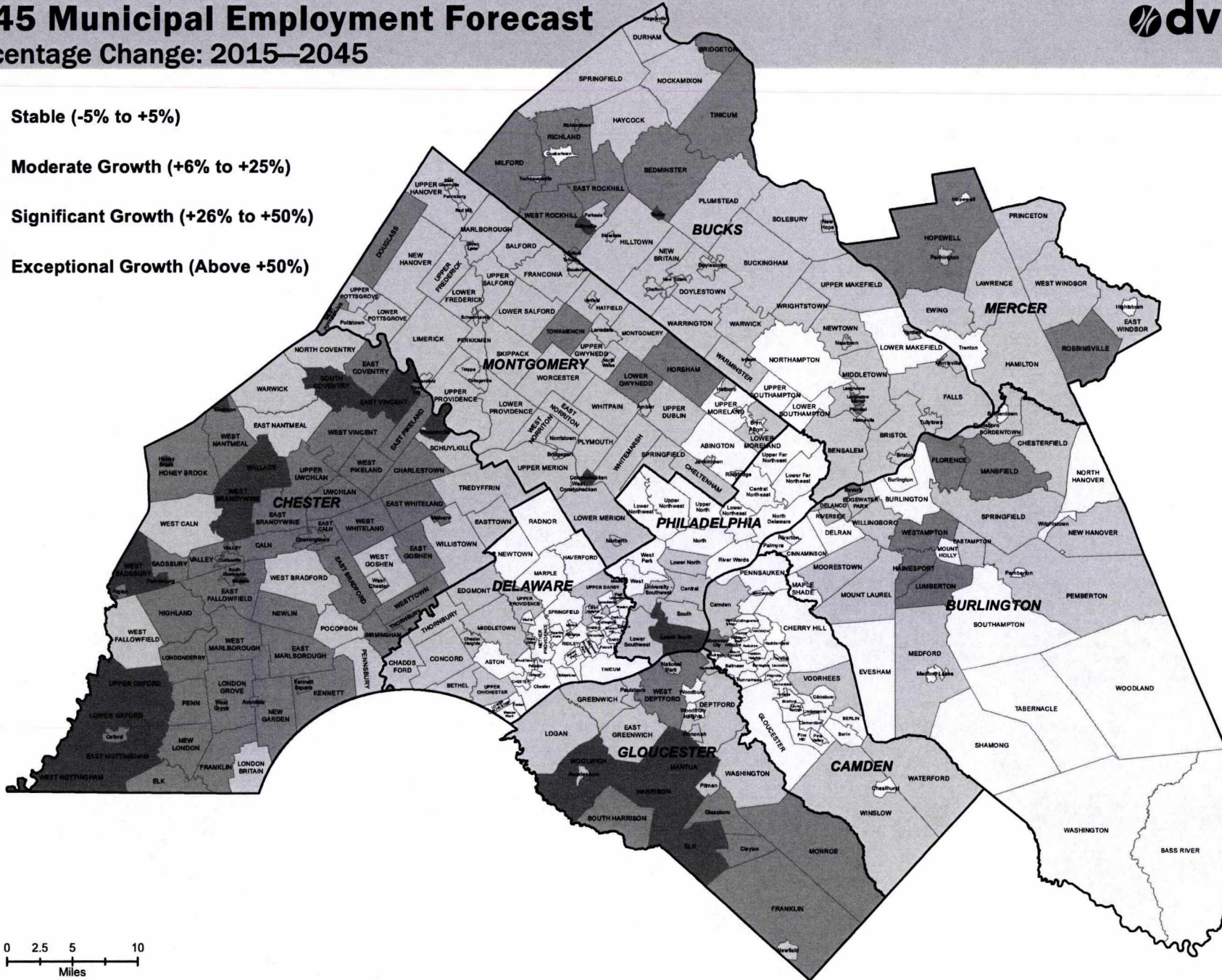
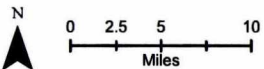
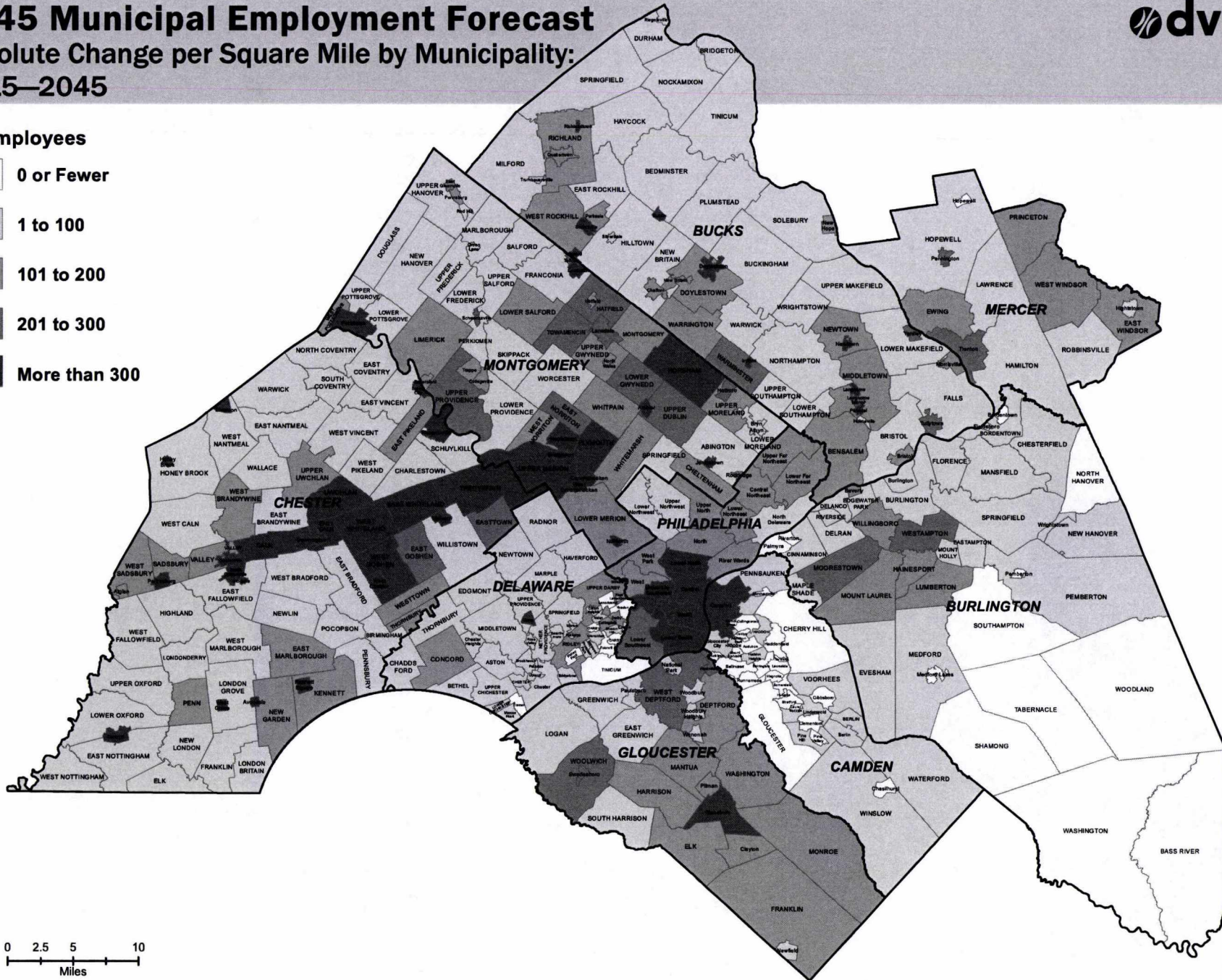


Figure 4:
2045 Municipal Employment Forecast
Absolute Change per Square Mile by Municipality:
2015–2045



Employees

- 0 or Fewer
- 1 to 100
- 101 to 200
- 201 to 300
- More than 300



Appendix A: Forecasted Employment by County and Municipality, 2015-2045

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	38,393	11.9%
Bedminster Township	1,864	2,018	2,116	2,215	2,260	2,311	2,424	560	30.0%
Bensalem Township	43,829	44,472	44,697	44,952	45,567	46,304	46,023	2,194	5.0%
Bridgeton Township	334	351	368	395	402	419	434	100	29.9%
Bristol Borough	5,111	5,166	5,239	5,315	5,366	5,396	5,415	304	5.9%
Bristol Township	23,168	23,575	23,799	24,037	24,370	24,768	24,740	1,572	6.8%
Buckingham Township	7,609	7,755	8,012	8,271	8,409	8,476	8,667	1,058	13.9%
Chalfont Borough	1,300	1,332	1,393	1,454	1,485	1,499	1,550	250	19.2%
Doylestown Borough	10,480	10,628	10,861	11,097	11,236	11,309	11,438	958	9.1%
Doylestown Township	11,453	11,838	12,071	12,308	12,652	13,030	13,163	1,710	14.9%
Dublin Borough	820	879	926	962	1,225	1,530	1,520	700	85.4%
Durham Township	254	256	257	259	267	276	273	19	7.5%
East Rockhill Township	2,140	2,259	2,335	2,411	2,520	2,636	2,700	560	26.2%
Falls Township	16,290	16,575	17,065	17,558	17,827	17,961	18,302	2,012	12.4%
Haycock Township	486	507	519	532	556	582	590	104	21.4%
Hilltown Township	6,113	6,252	6,509	6,766	6,897	6,959	7,167	1,054	17.2%
Hulmeville Borough	254	262	268	274	282	290	294	40	15.7%
Ivyland Borough	1,671	1,749	1,789	1,830	1,869	1,913	1,948	277	16.6%
Langhorne Borough	1,150	1,176	1,225	1,274	1,299	1,311	1,351	201	17.5%
Langhorne Manor Borough	313	329	364	398	413	420	454	141	45.0%
Lower Makefield Township	11,612	11,717	11,768	11,827	12,007	12,219	12,111	499	4.3%
Lower Southampton Township	13,210	13,289	13,334	13,387	13,457	13,512	13,401	191	1.4%
Middletown Township	24,781	25,116	25,630	26,154	26,465	26,634	26,900	2,119	8.6%
Milford Township	3,753	3,912	4,241	4,567	4,720	4,784	5,100	1,347	35.9%
Morrisville Borough	2,903	2,951	3,033	3,115	3,161	3,184	3,238	335	11.5%
New Britain Borough	3,004	3,046	3,088	3,132	3,176	3,214	3,204	200	6.7%
New Britain Township	5,330	5,453	5,528	5,605	5,791	5,992	5,999	669	12.6%
New Hope Borough	2,854	2,893	2,953	3,015	3,051	3,071	3,102	248	8.7%
Newtown Borough	2,375	2,404	2,426	2,447	2,522	2,604	2,588	213	9.0%
Newtown Township	13,519	13,712	14,016	14,325	14,505	14,601	14,771	1,252	9.3%
Nockamixon Township	1,519	1,580	1,617	1,655	1,733	1,816	1,838	319	21.0%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Northampton Township	14,669	14,801	14,953	15,113	15,233	15,310	15,299	630	4.3%
Penndel Borough	1,403	1,453	1,555	1,656	1,704	1,725	1,819	416	29.7%
Perkasie Borough	2,991	3,058	3,182	3,305	3,369	3,399	3,499	508	17.0%
Plumstead Township	6,583	6,785	7,183	7,578	7,771	7,856	8,214	1,631	24.8%
Quakertown Borough	5,546	5,598	5,660	5,724	5,772	5,801	5,802	256	4.6%
Richland Township	6,678	7,236	7,597	7,956	8,221	8,510	8,904	2,226	33.3%
Richlandtown Borough	288	300	326	351	363	368	393	105	36.5%
Riegelsville Borough	142	145	148	149	154	159	159	17	12.0%
Sellersville Borough	1,150	1,230	1,377	1,520	1,597	1,632	1,750	600	52.2%
Silverdale Borough	299	301	303	305	315	327	323	24	8.0%
Solebury Township	3,399	3,472	3,605	3,739	3,808	3,841	3,946	547	16.1%
Springfield Township	1,474	1,524	1,555	1,586	1,638	1,693	1,710	236	16.0%
Telford Borough (part)	778	815	894	971	1,007	1,022	1,099	321	41.3%
Tinicum Township	1,532	1,584	1,690	1,794	1,844	1,866	1,963	431	28.1%
Trumbauersville Borough	307	309	314	317	333	348	346	39	12.7%
Tullytown Borough	3,097	3,158	3,267	3,377	3,435	3,463	3,546	449	14.5%
Upper Makefield Township	2,741	2,790	2,876	2,962	3,008	3,031	3,092	351	12.8%
Upper Southampton Township	9,981	10,006	10,026	10,053	10,322	10,618	10,459	478	4.8%
Warminster Township	16,109	16,891	17,210	17,536	17,956	18,424	18,702	2,593	16.1%
Warrington Township	9,581	9,863	10,414	10,963	11,232	11,352	11,842	2,261	23.6%
Warwick Township	5,967	6,074	6,258	6,444	6,544	6,594	6,724	757	12.7%
West Rockhill Township	5,227	5,442	5,885	6,323	6,530	6,617	7,040	1,813	34.7%
Wrightstown Township	1,294	1,324	1,378	1,433	1,461	1,474	1,519	225	17.4%
Yardley Borough	1,996	2,034	2,100	2,167	2,203	2,220	2,269	273	13.7%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	87,800	28.4%
Atglen Borough	498	521	549	577	599	617	643	145	29.1%
Avondale Borough	780	840	906	971	1,026	1,071	1,122	342	43.8%
Birmingham Township	1,573	1,664	1,754	1,846	1,927	1,994	2,046	473	30.1%
Caln Township	8,191	8,719	9,294	9,872	10,358	10,761	11,181	2,990	36.5%
Charlestown Township	3,134	3,309	3,483	3,661	3,818	3,947	4,050	916	29.2%
Coatesville City	2,579	2,759	2,958	3,160	3,327	3,465	3,619	1,040	40.3%
Downingtown Borough	6,455	6,798	7,192	7,588	7,910	8,175	8,499	2,044	31.7%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
East Bradford Township	1,844	1,966	2,097	2,229	2,341	2,433	2,527	683	37.0%
East Brandywine Township	1,649	1,777	1,921	2,068	2,187	2,285	2,404	755	45.8%
East Caln Township	4,254	4,474	4,685	4,900	5,096	5,258	5,367	1,113	26.2%
East Coventry Township	1,515	1,618	1,730	1,842	1,937	2,015	2,096	581	38.3%
East Fallowfield Township	911	969	1,029	1,089	1,140	1,186	1,221	310	34.0%
East Goshen Township	8,156	8,597	9,036	9,482	9,877	10,205	10,461	2,305	28.3%
East Marlborough Township	5,264	5,608	6,002	6,399	6,721	6,987	7,308	2,044	38.8%
East Nantmeal Township	821	862	896	931	966	996	999	178	21.7%
East Nottingham Township	1,713	1,854	2,020	2,187	2,320	2,430	2,571	858	50.1%
East Pikeland Township	2,836	3,040	3,268	3,499	3,687	3,845	4,025	1,189	41.9%
Easttown Township	7,006	7,347	7,667	7,992	8,291	8,545	8,694	1,688	24.1%
East Vincent Township	1,867	2,063	2,298	2,306	2,716	2,858	3,129	1,262	67.6%
East Whiteland Township	23,399	24,735	26,117	27,514	28,722	29,730	30,623	7,224	30.9%
Elk Township	266	287	305	324	342	357	363	97	36.5%
Elverson Borough	596	663	746	829	894	947	1,026	430	72.1%
Franklin Township	608	659	715	773	820	859	905	297	48.8%
Highland Township	535	567	594	623	649	674	681	146	27.3%
Honey Brook Borough	389	425	466	507	541	569	602	213	54.8%
Honey Brook Township	2,990	3,164	3,342	3,522	3,678	3,809	3,920	930	31.1%
Kennett Township	5,782	6,112	6,450	6,793	7,092	7,341	7,555	1,773	30.7%
Kennett Square Borough	4,177	4,405	4,632	4,862	5,066	5,239	5,370	1,193	28.6%
London Britain Township	630	665	691	719	747	772	773	143	22.7%
Londonderry Township	488	530	575	621	660	694	729	241	49.4%
London Grove Township	2,535	2,738	2,972	3,208	3,400	3,559	3,755	1,220	48.1%
Lower Oxford Township	1,874	2,096	2,397	2,698	2,918	3,098	3,418	1,544	82.4%
Malvern Borough	2,359	2,500	2,646	2,794	2,921	3,027	3,121	762	32.3%
Modena Borough	124	147	178	207	230	248	279	155	125.0%
New Garden Township	6,534	6,884	7,277	7,673	7,999	8,268	8,578	2,044	31.3%
Newlin Township	271	293	315	336	357	375	387	116	42.8%
New London Township	1,041	1,098	1,155	1,213	1,263	1,306	1,385	344	33.0%
North Coventry Township	3,730	3,896	4,037	4,182	4,323	4,444	4,483	753	20.2%
Oxford Borough	2,156	2,319	2,504	2,691	2,843	2,968	3,118	962	44.6%
Parkesburg Borough	671	734	811	888	948	997	1,065	394	58.7%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Penn Township	2,916	3,084	3,286	3,490	3,649	3,781	3,961	1,045	35.8%
Pennsbury Township	1,395	1,460	1,514	1,568	1,624	1,671	1,680	285	20.4%
Phoenixville Borough	6,835	7,419	8,119	8,823	9,378	9,835	10,456	3,621	53.0%
Pocopson Township	1,030	1,081	1,123	1,165	1,208	1,244	1,252	222	21.6%
Sadsbury Township	1,571	1,692	1,830	1,969	2,083	2,176	2,288	717	45.6%
Schuylkill Township	4,530	4,706	4,840	4,977	5,124	5,197	5,247	717	15.8%
South Coatesville Borough	1,390	1,502	1,629	1,759	1,862	1,949	2,055	665	47.8%
South Coventry Township	1,146	1,257	1,392	1,528	1,633	1,721	1,844	698	60.9%
Spring City Borough	959	1,027	1,100	1,173	1,235	1,287	1,339	380	39.6%
Thornbury Township	1,302	1,384	1,470	1,557	1,631	1,693	1,749	447	34.3%
Tredyffrin Township	55,495	57,323	58,540	59,802	61,270	62,518	62,120	6,625	11.9%
Upper Oxford Township	361	393	428	465	494	519	547	186	51.5%
Upper Uwchlan Township	4,216	4,447	4,677	4,910	5,116	5,288	5,421	1,205	28.6%
Uwchlan Township	14,889	16,014	17,312	18,619	19,674	20,545	21,626	6,737	45.2%
Valley Township	2,085	2,249	2,440	2,633	2,787	2,915	3,074	989	47.4%
Wallace Township	903	981	1,074	1,168	1,242	1,304	1,383	480	53.2%
Warwick Township	614	648	674	701	729	753	754	140	22.8%
West Bradford Township	2,095	2,190	2,269	2,349	2,429	2,497	2,514	419	20.0%
West Brandywine Township	2,088	2,331	2,643	2,955	3,192	3,386	3,694	1,606	76.9%
West Caln Township	1,450	1,523	1,590	1,657	1,721	1,775	1,799	349	24.1%
West Chester Borough	11,440	11,787	11,979	12,181	12,448	12,678	12,510	1,070	9.4%
West Fallowfield Township	958	1,006	1,043	1,082	1,122	1,155	1,159	201	21.0%
West Goshen Township	24,174	25,299	26,334	27,385	28,369	29,189	29,633	5,459	22.6%
West Grove Borough	674	719	763	808	848	881	907	233	34.6%
West Marlborough Township	330	353	371	388	409	424	426	96	29.1%
West Nantmeal Township	647	690	732	775	814	845	870	223	34.5%
West Nottingham Township	1,736	1,884	2,060	2,238	2,378	2,493	2,647	911	52.5%
West Pikeland Township	964	1,029	1,097	1,165	1,225	1,274	1,320	356	36.9%
West Sadsbury Township	2,106	2,300	2,537	2,774	2,959	3,112	3,327	1,221	58.0%
West Vincent Township	1,476	1,552	1,623	1,695	1,759	1,816	1,846	370	25.1%
West Whiteland Township	23,476	24,691	25,883	27,093	28,175	29,076	29,735	6,259	26.7%
Westtown Township	4,257	4,479	4,693	4,910	5,107	5,271	5,383	1,126	26.5%
Willistown Township	7,896	8,118	8,275	8,436	8,616	8,769	8,741	845	10.7%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	10,996	4.1%
Aldan Borough	957	963	966	969	973	978	978	21	2.2%
Aston Township	6,558	6,615	6,678	6,742	6,793	6,832	6,876	318	4.8%
Bethel Township	2,297	2,331	2,388	2,445	2,478	2,497	2,548	251	10.9%
Brookhaven Borough	2,702	2,722	2,739	2,756	2,773	2,787	2,796	94	3.5%
Chadds Ford Twp.	4,153	4,232	4,374	4,516	4,593	4,634	4,768	615	14.8%
Chester City	11,939	12,014	12,062	12,112	12,174	12,234	12,244	305	2.6%
Chester Township	942	956	980	1,004	1,017	1,025	1,047	105	11.1%
Chester Heights Borough	2,926	2,945	2,958	2,971	2,987	3,002	3,005	79	2.7%
Clifton Heights Borough	2,142	2,153	2,155	2,157	2,165	2,175	2,169	27	1.3%
Collingdale Borough	2,108	2,125	2,143	2,161	2,176	2,188	2,199	91	4.3%
Colwyn Borough	417	421	425	430	433	435	439	22	5.3%
Concord Township	11,491	11,733	12,179	12,629	12,864	12,988	13,416	1,925	16.8%
Darby Borough	3,955	3,982	4,003	4,025	4,047	4,068	4,077	122	3.1%
Darby Township	2,593	2,602	2,595	2,588	2,594	2,604	2,588	-5	-0.2%
East Lansdowne Borough	658	661	661	661	664	667	665	7	1.1%
Eddystone Borough	2,429	2,439	2,436	2,433	2,440	2,450	2,439	10	0.4%
Edgmont Township	2,247	2,307	2,424	2,542	2,601	2,630	2,745	498	22.2%
Folcroft Borough	3,501	3,507	3,484	3,460	3,462	3,474	3,437	-64	-1.8%
Glenolden Borough	2,366	2,376	2,376	2,375	2,383	2,394	2,385	19	0.8%
Haverford Township	16,973	17,066	17,103	17,142	17,217	17,298	17,279	306	1.8%
Lansdowne Borough	2,650	2,659	2,652	2,646	2,652	2,662	2,646	-4	-0.2%
Lower Chichester Township	1,374	1,380	1,381	1,381	1,386	1,392	1,387	13	0.9%
Marcus Hook Borough	3,014	3,037	3,058	3,079	3,099	3,115	3,127	113	3.7%
Marple Township	14,026	14,082	14,063	14,045	14,085	14,143	14,075	49	0.3%
Media Borough	11,882	11,974	12,064	12,156	12,236	12,303	12,357	475	4.0%
Middletown Township	14,076	14,220	14,407	14,597	14,727	14,820	14,968	892	6.3%
Millbourne Borough	370	375	382	389	393	396	402	32	8.6%
Morton Borough	1,290	1,297	1,300	1,303	1,309	1,315	1,314	24	1.9%
Nether Providence Township	4,626	4,656	4,677	4,698	4,723	4,747	4,753	127	2.7%
Newtown Township	12,615	12,710	12,798	12,888	12,971	13,040	13,090	475	3.8%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Norwood Borough	1,140	1,145	1,146	1,146	1,151	1,156	1,152	12	1.1%
Parkside Borough	328	330	332	334	336	337	338	10	3.0%
Prospect Park Borough	1,726	1,736	1,742	1,747	1,756	1,764	1,764	38	2.2%
Radnor Township	25,694	25,861	25,978	26,099	26,239	26,371	26,407	713	2.8%
Ridley Township	2,809	2,814	2,795	2,776	2,777	2,786	2,757	-52	-1.9%
Ridley Park Borough	9,411	9,463	9,483	9,505	9,546	9,591	9,580	169	1.8%
Rose Valley Borough	297	302	310	318	323	326	333	36	12.1%
Rutledge Borough	131	132	132	132	133	133	133	2	1.5%
Sharon Hill Borough	2,985	3,003	3,014	3,026	3,041	3,056	3,058	73	2.4%
Springfield Township	14,177	14,292	14,411	14,532	14,633	14,715	14,791	614	4.3%
Swarthmore Borough	2,660	2,677	2,688	2,700	2,714	2,727	2,730	70	2.6%
Thornbury Township	2,366	2,418	2,514	2,610	2,661	2,687	2,780	414	17.5%
Tinicum Township	12,489	12,531	12,495	12,461	12,488	12,537	12,457	-32	-0.3%
Trainer Borough	1,799	1,799	1,779	1,760	1,757	1,762	1,735	-64	-3.6%
Upland Borough	1,222	1,227	1,228	1,228	1,232	1,237	1,233	11	0.9%
Upper Chichester Township	6,648	6,710	6,786	6,862	6,918	6,959	7,016	368	5.5%
Upper Darby Township	25,058	25,282	25,543	25,806	26,007	26,159	26,346	1,288	5.1%
Upper Providence Township	5,055	5,114	5,198	5,283	5,338	5,373	5,445	390	7.7%
Yeadon Borough	2,782	2,791	2,784	2,776	2,783	2,794	2,776	-6	-0.2%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	81,942	14.1%
Abington Township	30,656	31,098	31,327	31,512	31,899	32,371	32,156	1,500	4.9%
Ambler Borough	3,185	3,248	3,322	3,392	3,450	3,501	3,537	352	11.1%
Bridgeport Borough	2,180	2,248	2,298	2,345	2,399	2,455	2,480	300	13.8%
Bryn Athyn Borough	1,427	1,440	1,452	1,463	1,474	1,484	1,477	50	3.5%
Cheltenham Township	18,189	18,517	18,725	18,906	19,201	19,546	19,489	1,300	7.1%
Collegeville Borough	2,626	2,668	2,705	2,738	2,775	2,814	2,815	189	7.2%
Conshohocken Borough	9,368	10,531	11,292	12,036	12,854	13,522	14,368	5,000	53.4%
Douglass Township	3,661	3,820	4,038	4,249	4,380	4,431	4,661	1,000	27.3%
East Greenville Borough	651	663	675	687	697	707	711	60	9.2%
East Norriton Township	10,682	10,999	11,317	11,617	11,813	11,880	12,182	1,500	14.0%
Franconia Township	7,630	7,696	8,004	8,297	8,439	8,497	8,745	1,115	14.6%
Green Lane Borough	183	186	187	189	191	193	193	10	5.5%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Hatboro Borough	3,893	3,978	4,018	4,055	4,125	4,204	4,193	300	7.7%
Hatfield Borough	1,150	1,172	1,190	1,208	1,227	1,248	1,250	100	8.7%
Hatfield Township	17,580	18,120	18,629	19,110	19,533	19,857	20,218	2,638	15.0%
Horsham Township	30,408	31,549	33,538	35,468	36,584	37,907	39,068	8,660	28.5%
Jenkintown Borough	4,597	4,677	4,722	4,761	4,833	4,918	4,897	300	6.5%
Lansdale Borough	7,772	7,952	8,045	8,126	8,254	8,372	8,384	612	7.9%
Limerick Township	11,533	11,874	12,362	12,826	13,324	13,799	14,151	2,618	22.7%
Lower Frederick Township	1,110	1,146	1,178	1,208	1,260	1,320	1,334	224	20.2%
Lower Gwynedd Township	7,006	7,282	7,770	8,244	8,514	8,687	9,125	2,119	30.2%
Lower Merion Township	55,354	56,522	57,038	57,471	58,209	58,915	58,854	3,500	6.3%
Lower Moreland Township	8,085	8,225	8,331	8,424	8,551	8,692	8,685	600	7.4%
Lower Pottsgrove Township	4,670	4,768	4,943	5,109	5,239	5,346	5,470	800	17.1%
Lower Providence Township	12,994	13,230	13,581	13,910	14,129	14,290	14,494	1,500	11.5%
Lower Salford Township	9,663	9,864	10,234	10,586	10,776	10,886	11,163	1,500	15.5%
Marlborough Township	978	991	1,010	1,027	1,051	1,071	1,078	100	10.2%
Montgomery Township	16,097	16,473	16,923	17,343	17,580	17,640	18,012	1,915	11.9%
Narberth Borough	2,039	2,076	2,101	2,122	2,155	2,193	2,189	150	7.4%
New Hanover Township	2,020	2,102	2,198	2,290	2,370	2,435	2,515	495	24.5%
Norristown Borough	14,095	14,558	14,873	15,166	15,560	15,972	16,095	2,000	14.2%
North Wales Borough	1,419	1,443	1,460	1,476	1,498	1,522	1,519	100	7.0%
Pennsburg Borough	1,519	1,552	1,573	1,592	1,617	1,641	1,645	126	8.3%
Perkiomen Township	2,416	2,469	2,537	2,602	2,651	2,693	2,733	317	13.1%
Plymouth Township	23,839	24,550	25,500	26,410	27,090	27,652	28,339	4,500	18.9%
Pottstown Borough	10,757	11,090	11,342	11,578	11,857	12,128	12,257	1,500	13.9%
Red Hill Borough	631	642	654	666	676	685	689	58	9.2%
Rockledge Borough	957	979	996	1,011	1,031	1,054	1,057	100	10.4%
Royersford Borough	1,393	1,419	1,443	1,466	1,489	1,511	1,518	125	9.0%
Salford Township	526	544	564	583	605	627	641	115	21.9%
Schwenksville Borough	418	434	454	474	490	504	518	100	23.9%
Skippack Township	4,197	4,300	4,402	4,496	4,565	4,631	4,697	500	11.9%
Souderton Borough	2,788	2,876	2,972	3,064	3,147	3,227	3,288	500	17.9%
Springfield Township	7,874	8,000	8,084	8,158	8,271	8,399	8,374	500	6.4%
Telford Borough (part)	643	659	684	707	722	734	751	108	16.8%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Towamencin Township	7,548	8,086	8,612	9,125	9,567	9,909	10,421	2,873	38.1%
Trappe Borough	2,144	2,190	2,248	2,303	2,345	2,381	2,414	270	12.6%
Upper Dublin Township	21,566	22,207	22,864	23,485	24,048	24,546	24,966	3,400	15.8%
Upper Frederick Township	871	899	930	960	998	1,037	1,056	185	21.2%
Upper Gwynedd Township	25,099	25,428	25,751	26,036	26,324	26,607	26,599	1,500	6.0%
Upper Hanover Township	4,221	4,395	4,541	4,680	4,831	4,957	5,078	857	20.3%
Upper Merion Township	57,038	59,232	60,940	62,559	64,072	65,430	66,508	9,470	16.6%
Upper Moreland Township	18,160	18,395	18,536	18,650	18,853	19,092	18,977	817	4.5%
Upper Pottsgrove Township	1,161	1,186	1,227	1,264	1,301	1,335	1,361	200	17.2%
Upper Providence Township	22,276	23,028	24,014	24,960	25,575	25,947	26,796	4,520	20.3%
Upper Salford Township	1,273	1,303	1,338	1,371	1,407	1,442	1,462	189	14.8%
West Conshohocken Borough	5,836	5,978	6,180	6,371	6,506	6,612	6,748	912	15.6%
West Norriton Township	9,363	9,557	9,802	10,031	10,212	10,367	10,499	1,136	12.1%
West Pottsgrove Township	1,476	1,530	1,622	1,711	1,764	1,798	1,879	403	27.3%
Whitemarsh Township	20,727	21,090	21,343	21,565	21,894	22,235	22,227	1,500	7.2%
Whitpain Township	19,871	20,231	20,641	21,020	21,350	21,653	21,819	1,948	9.8%
Worcester Township	2,954	3,069	3,189	3,304	3,394	3,457	3,560	606	20.5%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	63,978	8.3%
Central	277,884	280,877	283,540	287,458	289,839	291,941	294,586	16,702	6.0%
South	32,348	32,823	33,052	33,584	33,897	34,118	34,233	1,885	5.8%
Lower South	19,366	22,053	25,327	28,043	30,830	33,279	35,111	15,745	81.3%
Lower Southwest	21,287	21,570	22,013	22,546	22,943	23,231	23,518	2,231	10.5%
University/Southwest	81,863	84,881	86,678	89,222	91,692	92,487	94,866	13,003	15.9%
West	14,073	14,203	14,299	14,439	14,598	14,699	14,774	701	5.0%
West Park	17,141	17,404	17,509	17,692	17,785	17,928	17,987	846	4.9%
Lower North	27,134	27,582	28,096	28,441	28,963	29,335	29,204	2,070	7.6%
River Wards	23,154	23,578	23,698	23,934	24,224	24,485	24,249	1,095	4.7%
North	41,243	41,508	41,777	42,342	42,647	42,878	42,941	1,698	4.1%
Lower Northwest	18,212	18,475	18,586	18,710	18,889	19,048	19,008	796	4.4%
Upper Northwest	25,673	25,928	26,010	26,217	26,435	26,540	26,478	805	3.1%
Upper North	33,741	34,068	34,214	34,353	34,589	34,656	34,655	914	2.7%
Lower Northeast	27,338	27,591	27,740	27,958	28,086	28,125	28,124	786	2.9%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Central Northeast	22,546	22,843	23,015	23,244	23,395	23,498	23,473	927	4.1%
North Delaware	23,938	24,269	24,330	24,557	24,692	24,819	24,807	869	3.6%
Lower Far Northeast	31,433	31,835	32,080	32,378	32,667	32,893	32,853	1,420	4.5%
Upper Far Northeast	34,473	34,820	35,192	35,456	35,831	35,977	35,958	1,485	4.3%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	22,324	9.3%
Bass River Township	1,556	1,572	1,566	1,556	1,558	1,571	1,544	-12	-0.8%
Beverly City	400	417	446	472	485	493	519	119	29.8%
Bordentown City	1,437	1,452	1,447	1,439	1,441	1,451	1,428	-9	-0.6%
Bordentown Township	5,424	5,530	5,624	5,703	5,760	5,824	5,858	434	8.0%
Burlington City	5,162	5,229	5,237	5,231	5,251	5,298	5,242	80	1.5%
Burlington Township	17,266	17,584	17,772	17,879	17,949	18,054	18,013	747	4.3%
Chesterfield Township	1,770	1,800	1,819	1,833	1,846	1,865	1,863	93	5.3%
Cinnaminson Township	9,862	9,981	9,978	9,949	9,979	10,064	9,938	76	0.8%
Delanco Township	1,193	1,234	1,296	1,353	1,383	1,403	1,455	262	22.0%
Delran Township	7,181	7,263	7,249	7,217	7,234	7,295	7,190	9	0.1%
Eastampton Township	949	980	1,027	1,070	1,092	1,109	1,147	198	20.9%
Edgewater Park Township	2,738	2,795	2,849	2,896	2,928	2,961	2,985	247	9.0%
Evesham Township	27,494	27,914	28,117	28,240	28,412	28,688	28,559	1,065	3.9%
Fieldsboro Borough	87	88	89	91	91	92	92	5	5.7%
Florence Township	3,424	3,650	3,889	4,017	4,112	4,190	4,297	873	25.5%
Hainesport Township	3,128	3,287	3,567	3,834	3,962	4,037	4,299	1,171	37.4%
Lumberton Township	6,605	6,926	7,488	8,022	8,279	8,433	8,954	2,349	35.6%
Mansfield Township	2,794	2,935	3,186	3,422	3,537	3,604	3,838	1,044	37.4%
Maple Shade Township	6,792	6,875	6,877	6,860	6,881	6,942	6,858	66	1.0%
Medford Lakes Borough	800	808	805	800	800	807	793	-7	-0.9%
Medford Township	11,762	11,938	12,189	12,416	12,559	12,653	12,855	1,093	9.3%
Moorestown Township	30,721	31,403	32,129	32,756	33,157	33,552	33,945	3,224	10.5%
Mount Holly Township	7,793	7,890	7,894	7,877	7,904	7,972	7,879	86	1.1%
Mount Laurel Township	37,270	38,050	38,815	39,464	39,903	40,362	40,714	3,444	9.2%
New Hanover Township	4,627	4,707	4,791	4,874	4,957	5,040	5,127	500	10.8%
North Hanover Township	1,451	1,455	1,437	1,429	1,422	1,416	1,401	-50	-3.4%
Palmyra Borough	2,008	2,021	1,994	1,963	1,957	1,971	1,916	-92	-4.6%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Pemberton Borough	541	547	544	541	541	546	537	-4	-0.7%
Pemberton Township	7,035	7,204	7,420	7,616	7,725	7,816	7,970	935	13.3%
Riverside Township	1,726	1,759	1,787	1,811	1,827	1,847	1,856	130	7.5%
Riverton Borough	836	844	839	832	832	840	823	-13	-1.6%
Shamong Township	1,695	1,713	1,705	1,693	1,696	1,709	1,680	-15	-0.9%
Southampton Township	3,705	3,744	3,729	3,704	3,709	3,739	3,677	-28	-0.8%
Springfield Township	1,513	1,543	1,593	1,640	1,666	1,681	1,726	213	14.1%
Tabernacle Township	2,042	2,063	2,054	2,041	2,044	2,061	2,026	-16	-0.8%
Washington Township	245	247	247	245	246	247	243	-2	-0.8%
Westampton Township	7,379	7,776	8,490	9,169	9,495	9,682	10,357	2,978	40.4%
Willingboro Township	8,184	8,388	8,632	8,850	8,979	9,093	9,253	1,069	13.1%
Woodland Township	1,893	1,911	1,899	1,882	1,883	1,897	1,860	-33	-1.7%
Wrightstown Borough	2,810	2,828	2,852	2,875	2,881	2,890	2,905	95	3.4%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	8,287	3.1%
Audubon Borough	2,882	2,878	2,858	2,840	2,834	2,839	2,809	-73	-2.5%
Audubon Park Borough	122	122	121	120	120	120	119	-3	-2.5%
Barrington Borough	2,919	2,916	2,900	2,885	2,881	2,886	2,860	-59	-2.0%
Bellmawr Borough	4,855	4,861	4,856	4,853	4,855	4,867	4,848	-7	-0.1%
Berlin Borough	4,889	4,908	4,936	4,965	4,981	4,998	5,012	123	2.5%
Berlin Township	6,474	6,492	6,514	6,537	6,551	6,572	6,574	100	1.5%
Brooklawn Borough	979	980	979	978	978	981	976	-3	-0.3%
Camden City	41,786	42,644	43,370	44,057	44,850	45,205	45,992	4,206	10.1%
Cherry Hill Township	66,799	66,845	66,734	66,641	66,648	66,808	66,479	-320	-0.5%
Chesilhurst Borough	268	267	264	262	261	261	257	-11	-4.1%
Clementon Borough	1,391	1,391	1,388	1,385	1,384	1,388	1,379	-12	-0.9%
Collingswood Borough	4,307	4,308	4,296	4,285	4,283	4,292	4,266	-41	-1.0%
Gibbsboro Borough	1,885	1,884	1,875	1,866	1,864	1,867	1,852	-33	-1.8%
Gloucester City	4,709	4,888	5,290	5,692	5,866	5,942	6,345	1,636	34.7%
Gloucester Township	19,959	19,964	19,911	19,863	19,857	19,901	19,782	-177	-0.9%
Haddon Township	4,577	4,590	4,606	4,624	4,634	4,649	4,651	74	1.6%
Haddonfield Borough	6,525	6,526	6,508	6,491	6,488	6,503	6,463	-62	-1.0%
Haddon Heights Borough	3,220	3,227	3,234	3,242	3,248	3,257	3,254	34	1.1%

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Hi-Nella Borough	201	201	201	201	201	202	201	0	0.0%
Laurel Springs Borough	468	468	465	463	463	464	460	-8	-1.7%
Lawnside Borough	1,916	1,911	1,894	1,877	1,872	1,874	1,850	-66	-3.4%
Lindenwold Borough	3,140	3,147	3,152	3,158	3,163	3,172	3,168	28	0.9%
Magnolia Borough	1,064	1,063	1,058	1,052	1,051	1,053	1,043	-21	-2.0%
Merchantville Borough	1,408	1,409	1,406	1,404	1,404	1,407	1,400	-8	-0.6%
Mount Ephraim Borough	1,137	1,137	1,133	1,129	1,128	1,131	1,123	-14	-1.2%
Oaklyn Borough	991	990	986	981	980	982	974	-17	-1.7%
Pennsauken Township	25,712	25,798	25,799	25,816	25,889	26,018	25,945	233	0.9%
Pine Hill Borough	1,618	1,625	1,627	1,629	1,634	1,643	1,640	22	1.4%
Pine Valley Borough	185	185	185	184	184	184	183	-2	-1.1%
Runnemede Borough	3,101	3,099	3,084	3,070	3,066	3,072	3,047	-54	-1.7%
Somerdale Borough	2,376	2,377	2,375	2,372	2,373	2,378	2,367	-9	-0.4%
Stratford Borough	6,353	6,354	6,335	6,318	6,315	6,329	6,289	-64	-1.0%
Tavistock Borough	50	50	50	50	50	50	50	0	0.0%
Voorhees Township	20,328	20,474	20,749	21,028	21,161	21,258	21,479	1,151	5.7%
Waterford Township	3,606	3,637	3,698	3,760	3,789	3,808	3,860	254	7.0%
Winslow Township	10,976	11,147	11,510	11,875	12,038	12,124	12,466	1,490	13.6%
Woodlynne Borough	406	406	406	406	406	407	406	0	0.0%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	35,304	29.1%
Clayton Borough	2,236	2,380	2,549	2,718	2,847	2,947	3,076	840	37.6%
Deptford Township	14,845	15,536	16,047	16,583	17,165	17,692	17,824	2,979	20.1%
East Greenwich Township	2,593	2,718	2,817	2,920	3,027	3,121	3,155	562	21.7%
Elk Township	1,106	1,240	1,465	1,684	1,813	1,894	2,126	1,020	92.2%
Franklin Township	4,372	4,642	4,944	5,247	5,488	5,676	5,895	1,523	34.8%
Glassboro Borough	7,359	7,860	8,475	9,089	9,543	9,883	10,380	3,021	41.1%
Greenwich Township	2,436	2,516	2,524	2,539	2,600	2,670	2,601	165	6.8%
Harrison Township	3,492	3,812	4,291	4,762	5,063	5,266	5,724	2,232	63.9%
Logan Township	9,726	10,183	10,529	10,892	11,277	11,624	11,726	2,000	20.6%
Mantua Township	5,333	5,786	6,436	7,078	7,501	7,792	8,396	3,063	57.4%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Monroe Township	11,219	12,024	13,054	14,078	14,812	15,352	16,218	4,999	44.6%
National Park Borough	430	445	448	453	464	477	467	37	8.6%
Newfield Borough	441	456	457	460	471	484	472	31	7.0%
Paulsboro Borough	1,707	1,760	1,760	1,765	1,804	1,852	1,796	89	5.2%
Pitman Borough	2,481	2,590	2,659	2,733	2,823	2,908	2,911	430	17.3%
South Harrison Township	1,000	1,066	1,143	1,221	1,280	1,324	1,385	385	38.5%
Swedesboro Borough	1,618	1,681	1,708	1,740	1,790	1,841	1,822	204	12.6%
Washington Township	19,175	19,988	20,465	20,982	21,650	22,291	22,242	3,067	16.0%
Wenonah Borough	520	541	553	565	582	599	596	76	14.6%
West Deptford Township	13,690	14,441	15,169	15,910	16,564	17,107	17,534	3,844	28.1%
Westville Borough	1,784	1,860	1,904	1,953	2,015	2,075	2,070	286	16.0%
Woodbury City	9,289	9,538	9,440	9,372	9,545	9,783	9,366	77	0.8%
Woodbury Heights Borough	1,887	1,940	1,925	1,915	1,953	2,002	1,923	36	1.9%
Woolwich Township	2,643	3,158	4,140	5,093	5,605	5,894	6,981	4,338	164.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	23,789	8.3%
East Windsor Township	17,414	17,737	18,170	18,607	18,858	19,015	19,359	1,945	11.2%
Ewing Township	22,150	22,877	23,322	23,772	24,047	24,230	24,680	2,530	11.4%
Hamilton Township	49,812	50,303	50,848	51,406	51,824	52,157	52,345	2,533	5.1%
Hightstown Borough	2,775	2,796	2,812	2,828	2,846	2,862	2,857	82	3.0%
Hopewell Borough	982	990	987	984	986	990	980	-2	-0.2%
Hopewell Township	14,696	14,797	15,282	15,771	17,012	18,290	18,408	3,712	25.3%
Lawrence Township	28,005	28,973	29,178	29,392	29,586	29,760	30,015	2,010	7.2%
Pennington Borough	2,412	2,449	2,502	2,555	2,587	2,608	2,646	234	9.7%
Princeton	26,211	27,014	27,617	28,227	28,585	28,815	29,399	3,188	12.2%
Robbinsville	6,542	6,815	7,186	7,558	7,743	7,836	8,212	1,670	25.5%
Trenton City	78,922	79,280	79,783	80,307	80,812	81,280	81,096	2,174	2.8%
West Windsor Township	36,374	36,833	37,721	38,618	39,135	39,459	40,087	3,713	10.2%

Source: Delaware Valley Regional Planning Commission, September 2016. Base employment data from the National Establishments Time Series (NETS) database, 2010 and 2013.

Report Title: Analytical Data Report # 023: County- and Municipal-Level Employment Forecasts, 2015-2045

Publication No.: ADR023

Date Published: October 2016

Geographic Area Covered: DVRPC's nine-county region, including Burlington, Camden, Gloucester, and Mercer counties in New Jersey, and Bucks, Chester, Delaware, Montgomery, and Philadelphia counties in Pennsylvania.

Key Words: employment, employment forecasts, National Establishments Time Series database, NETS, Connections 2045, long-range plan

ABSTRACT: This report presents the Delaware Valley Regional Planning Commission's (DVRPC's) adopted 2045 county- and municipal-level employment forecasts and describes the method used to develop them. Population and employment forecasts are a critical component of long-range land use and transportation planning. As a part of DVRPC's long-range planning activities, the Commission is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan.

DVRPC last adopted employment forecasts through the year 2040 in September 2012. In March 2016, DVRPC acquired a National Establishments Time Series (NETS) database that included 2013 employment data and revised 2010 data. The 2010 and 2013 employment data was reviewed and revised by DVRPC staff, utilizing resources that included CoStar, on-line business directories, company web sites, and, when appropriate, direct telephone calls. The revised data was then sent to the county planning staffs for additional revision. Additionally, during the summer of 2016, DVRPC acquired improved geocoding resources that allowed staff to further correct the spatial locations of employers.

Based on changes in the NETS employment between 2010 and 2013, and changes in employment in each county between 2010 and 2015, as reported by the U.S. Bureau of Labor Statistics, 2015 employment was estimated by county and municipality. Studies have shown that there is a direct relationship between the number of workers living in an area and the number of jobs. County-level employment was forecasted in five-year increments through 2045, by estimating a future ratio of population to employment in each county and applying it to DVRPC's adopted population forecasts. Together with the 2045 population forecasts adopted by the DVRPC Board in July 2016, these employment forecasts, adopted by the Board in October 2016, will serve as the basis for DVRPC's planning and modeling activities, and support the region's 2045 long-range plan, scheduled for adoption in July 2017.

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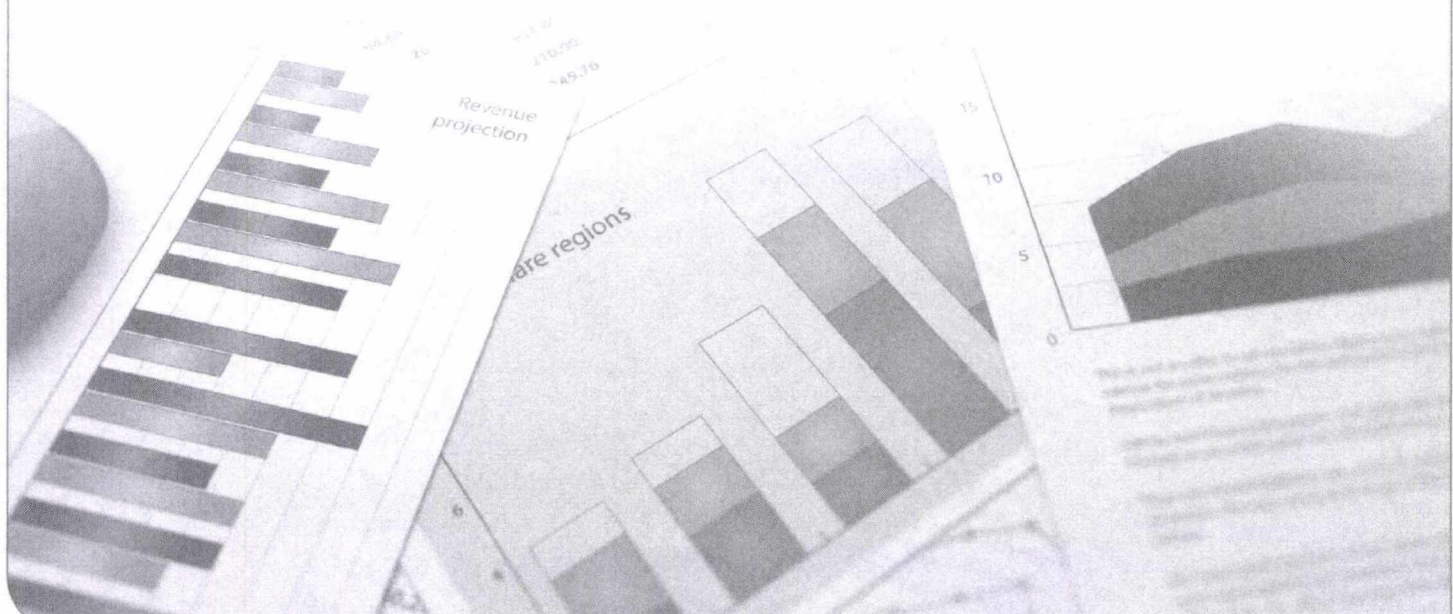
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INDEX

Month

Month End

3/31/2020

Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End Month End

2/29/2020 1/31/2020 12/31/2019 11/30/2019 10/31/2019 9/30/2019 8/31/2019 7/31/2019 6/30/2019 5/31/2019 4/30/2019 3/31/2019 2/28/2019 1/31/2019 12/31/2018 11/30/2018 10/31/2018

Company Name	Enterprise value to Net PPE	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17
		Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE
AMERICAN STATES WATER CO	1.000	0.971	1.094	1.073	1.077	1.184	1.127	1.186	1.004	0.979	0.979	0.950	0.951	0.974	0.926	0.918	0.936	0.867	
AMERICAN WATER WORKS CO IN	1.000	1.027	1.089	1.011	1.020	1.034	1.038	1.066	0.991	0.991	0.992	0.948	0.924	0.927	0.883	0.853	0.897	0.853	
AQUA AMERICA INC	1.000	0.988	1.123	1.024	0.985	1.002	0.992	0.997	1.111	1.099	1.081	1.058	0.873	0.893	0.855	0.839	0.871	0.825	
ARTESIAN RESOURCES -CL A	1.000	0.958	1.023	1.012	1.023	1.009	1.010	1.013	0.989	1.007	0.996	0.999	1.023	1.072	0.995	0.986	1.034	1.031	
CALIFORNIA WATER SERVICE GP	1.000	0.988	1.041	1.027	1.043	1.110	1.067	1.140	1.081	1.039	1.042	1.060	1.099	1.082	1.041	1.012	1.007	0.942	
MIDDLESEX WATER CO	1.000	1.031	1.139	1.116	1.144	1.108	1.077	1.064	1.087	1.020	1.046	1.017	0.987	1.050	1.010	0.968	0.976	0.864	
SJW GROUP	1.000	1.602	1.136	1.103	1.117	1.139	1.077	1.099	1.047	0.974	1.002	1.009	0.997	1.002	1.189	1.123	0.910	0.964	
YORK WATER CO	1.000	0.981	1.080	1.056	1.042	1.028	1.021	0.906	0.874	0.869	0.850	0.840	0.846	0.892	0.819	0.802	0.832	0.792	

Company Name	Enterprise value to Inv Cap	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER CO	1.000	0.960	1.081	1.061	1.075	1.181	1.124	1.217	1.030	1.005	1.004	0.974	0.975	1.004	0.955	0.946	0.955	0.884	
AMERICAN WATER WORKS CO IN	1.000	1.039	1.101	1.023	1.028	1.041	1.045	1.084	1.007	1.008	1.019	0.974	0.949	0.948	0.904	0.872	0.912	0.867	
AQUA AMERICA INC	1.000	0.967	1.099	1.002	0.969	0.986	0.976	1.388	1.547	1.530	1.517	1.485	1.226	1.262	1.209	1.187	1.227	1.161	
ARTESIAN RESOURCES -CL A	1.000	0.963	1.029	1.018	1.040	1.026	1.027	1.038	1.013	1.032	1.024	1.028	1.052	1.107	1.027	1.018	1.065	1.063	
CALIFORNIA WATER SERVICE GP	1.000	0.987	1.041	1.027	1.039	1.106	1.063	1.146	1.086	1.045	1.061	1.079	1.119	1.086	1.045	1.016	1.034	0.968	
MIDDLESEX WATER CO	1.000	1.010	1.117	1.094	1.246	1.207	1.173	1.172	1.196	1.122	1.167	1.135	1.102	1.174	1.130	1.083	1.101	0.975	
SJW GROUP	1.000	1.623	1.151	1.118	1.122	1.144	1.082	1.104	1.052	0.979	0.999	1.006	0.994	1.425	1.692	1.597	1.307	1.384	
YORK WATER CO	1.000	0.986	1.085	1.061	1.060	1.045	1.038	0.927	0.894	0.889	0.867	0.857	0.863	0.922	0.847	0.829	0.857	0.815	

5/31/2020	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End
3/31/2020	2/29/2020	1/31/2020	12/31/2019	11/30/2019	10/31/2019	9/30/2019	8/31/2019	7/31/2019	6/30/2019	5/31/2019	4/30/2019	3/31/2019	2/28/2019	1/31/2019	12/31/2018	11/30/2018	10/31/2018		
Enterprise value to Net PPE	100%	99%	109%	104%	104%	107%	105%	107%	103%	100%	100%	100%	97%	99%	96%	94%	92%	87%	
Enterprise value to Inv Cap	100%	99%	109%	104%	105%	108%	105%	112%	104%	102%	102%	102%	110%	104%	102%	105%	97%		

Company Name	9/30/2016	8/31/2016	7/31/2016	6/30/2016	5/31/2016	4/30/2016	3/31/2016	2/29/2016	1/31/2016	12/31/2015	11/30/2015	10/31/2015	9/30/2015	8/31/2015	7/31/2015	6/30/2015	5/31/2015	4/30/2015	3/31/2015	2/28/2015	1/31/2015	12/31/2014	11/30/2014	10/31/2014
	-42	-43	-44	-45	-46	-47	-48	-49	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59	-60	-61	-62	-63	-64	-65
	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE
AMERICAN STATES WATER CO	0.676	0.679	0.728	0.736	0.682	0.717	0.684	0.747	0.779	0.729	0.739	0.719	0.729	0.680	0.688	0.670	0.683	0.685	0.711	0.727	0.726	0.695	0.656	0.673
AMERICAN WATER WORKS CO IN	0.829	0.835	0.893	0.907	0.840	0.823	0.794	0.781	0.776	0.736	0.734	0.729	0.711	0.699	0.691	0.664	0.703	0.712	0.709	0.721	0.733	0.709	0.719	0.725
AQUA AMERICA INC	0.852	0.863	0.948	0.970	0.911	0.896	0.900	0.888	0.902	0.864	0.870	0.852	0.805	0.796	0.790	0.769	0.816	0.823	0.812	0.830	0.846	0.838	0.851	0.842
ARTESIAN RESOURCES -CL A	0.950	0.941	1.091	1.090	0.964	0.947	0.967	0.983	1.027	0.959	0.940	0.900	0.894	0.856	0.841	0.831	0.841	0.856	0.853	0.856	0.865	0.875	0.867	0.874
CALIFORNIA WATER SERVICE GP	0.852	0.843	0.907	0.915	0.825	0.801	0.765	0.736	0.729	0.692	0.688	0.684	0.687	0.668	0.687	0.704	0.739	0.739	0.744	0.773	0.743	0.744	0.765	0.786
MIDDLESEX WATER CO	0.785	0.768	0.898	0.935	0.827	0.827	0.723	0.690	0.708	0.663	0.652	0.653	0.618	0.604	0.603	0.600	0.590	0.613	0.612	0.635	0.609	0.631	0.619	0.628
SJW GROUP	0.837	0.836	0.831	0.787	0.752	0.751	0.779	0.783	0.722	0.681	0.705	0.723	0.710	0.692	0.707	0.713	0.724	0.711	0.739	0.773	0.772	0.748	0.727	0.757
YORK WATER CO	0.824	0.799	0.873	0.886	0.772	0.836	0.856	0.799	0.774	0.734	0.717	0.699	0.649	0.661	0.665	0.654	0.693	0.756	0.735	0.723	0.723	0.712	0.649	0.695

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER CO	0.672	0.681	0.730	0.738	0.686	0.721	0.688	0.734	0.766	0.717	0.722	0.703	0.712	0.643	0.651	0.634	0.641	0.643	0.668	0.676	0.675	0.647	0.606	0.622
AMERICAN WATER WORKS CO IN	0.843	0.851	0.909	0.924	0.862	0.844	0.815	0.789	0.784	0.743	0.737	0.731	0.713	0.709	0.701	0.674	0.720	0.730	0.727	0.727	0.739	0.716	0.715	0.720
AQUA AMERICA INC	1.242	1.264	1.388	1.420	1.340	1.318	1.323	1.288	1.308	1.253	1.256	1.230	1.162	1.155	1.147	1.116	1.197	1.207	1.191	1.202	1.225	1.213	1.225	1.212
ARTESIAN RESOURCES -CL A	0.949	0.925	1.073	1.071	0.934	0.917	0.936	0.949	0.991	0.926	0.897	0.859	0.854	0.820	0.805	0.795	0.784	0.799	0.795	0.812	0.820	0.830	0.817	0.824
CALIFORNIA WATER SERVICE GP	0.881	0.879	0.945	0.953	0.865	0.839	0.802	0.753	0.745	0.707	0.708	0.705	0.707	0.685	0.705	0.723	0.761	0.760	0.766	0.799	0.768	0.770	0.785	0.806
MIDDLESEX WATER CO	0.897	0.887	1.038	1.081	0.946	0.946	0.826	0.750	0.769	0.720	0.709	0.709	0.671	0.655	0.654	0.650	0.634	0.658	0.658	0.664	0.636	0.660	0.646	0.655
SJW GROUP	1.200	1.216	1.209	1.144	1.057	1.055	1.095	1.124	1.037	0.978	1.002	1.028	1.009	0.983	1.005	1.014	1.002	0.984	1.022	1.082	1.081	1.047	1.061	1.104
YORK WATER CO	0.825	0.802	0.876	0.890	0.780	0.846	0.866	0.800	0.775	0.735	0.719	0.701	0.651	0.659	0.664	0.652	0.693	0.756	0.735	0.723	0.723	0.712	0.645	0.691

5/31/2020	9/30/2016	8/31/2016	7/31/2016	6/30/2016	5/31/2016	4/30/2016	3/31/2016	2/29/2016	1/31/2016	12/31/2015	11/30/2015	10/31/2015	9/30/2015	8/31/2015	7/31/2015	6/30/2015	5/31/2015	4/30/2015	3/31/2015	2/28/2015	1/31/2015	12/31/2014	11/30/2014	10/31/2014
Enterprise value to Net PPE	83%	84%	90%	91%	83%	82%	79%	78%	78%	73%	73%	72%	71%	69%	69%	69%	71%	73%	74%	75%	74%	73%	72%	74%
Enterprise value to Inv Cap	89%	88%	99%	101%	90%	88%	85%	79%	78%	74%	73%	72%	71%	70%	70%	70%	74%	76%	75%	76%	75%	74%	75%	76%

Company Name	9/30/2014	8/31/2014	7/31/2014	6/30/2014	5/31/2014	4/30/2014	3/31/2014	2/28/2014	1/31/2014	12/31/2013	11/30/2013	10/31/2013	9/30/2013	8/31/2013	7/31/2013	6/30/2013	5/31/2013	4/30/2013
	-66	-67	-68	-69	-70	-71	-72	-73	-74	-75	-76	-77	-78	-79	-80	-81	-82	-83
	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE
AMERICAN STATES WATER CO	0.587	0.616	0.600	0.643	0.597	0.604	0.634	0.610	0.590	0.595	0.613	0.609	0.594	0.583	0.669	0.580	0.583	0.607
AMERICAN WATER WORKS CO IN	0.682	0.708	0.680	0.694	0.692	0.665	0.664	0.674	0.644	0.642	0.652	0.661	0.647	0.650	0.660	0.647	0.639	0.653
AQUA AMERICA INC	0.778	0.828	0.794	0.853	0.837	0.827	0.826	0.839	0.813	0.804	0.829	0.859	0.847	0.848	0.914	0.862	0.866	0.881
ARTESIAN RESOURCES -CL A	0.826	0.859	0.864	0.881	0.878	0.874	0.883	0.873	0.890	0.899	0.924	0.905	0.891	0.886	0.926	0.898	0.898	0.932
CALIFORNIA WATER SERVICE GP	0.716	0.766	0.731	0.760	0.722	0.732	0.753	0.742	0.732	0.727	0.729	0.718	0.685	0.686	0.729	0.665	0.682	0.732
MIDDLESEX WATER CO	0.571	0.593	0.582	0.599	0.587	0.588	0.616	0.592	0.586	0.606	0.629	0.604	0.616	0.594	0.609	0.586	0.578	0.596
SIW GROUP	0.677	0.696	0.688	0.685	0.701	0.704	0.729	0.734	0.706	0.724	0.700	0.712	0.702	0.685	0.710	0.703	0.739	0.711
YORK WATER CO	0.647	0.657	0.625	0.670	0.661	0.650	0.659	0.658	0.663	0.677	0.704	0.678	0.662	0.651	0.692	0.640	0.644	0.638

Company Name	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap	Enterprise value to Inv Cap
AMERICAN STATES WATER CO	0.543	0.554	0.540	0.578	0.554	0.560	0.588	0.556	0.537	0.542	0.563	0.560	0.546	0.529	0.606	0.526	0.527	0.549
AMERICAN WATER WORKS CO IN	0.677	0.707	0.679	0.693	0.691	0.664	0.663	0.676	0.646	0.644	0.643	0.651	0.638	0.645	0.655	0.642	0.639	0.653
AQUA AMERICA INC	1.121	1.190	1.140	1.225	1.216	1.201	1.200	1.203	1.166	1.153	1.190	1.233	1.217	1.206	1.300	1.226	1.224	1.246
ARTESIAN RESOURCES -CL A	0.779	0.812	0.817	0.832	0.824	0.821	0.829	0.821	0.837	0.845	0.858	0.841	0.827	0.820	0.857	0.830	0.825	0.856
CALIFORNIA WATER SERVICE GP	0.735	0.795	0.758	0.788	0.742	0.752	0.774	0.756	0.745	0.740	0.738	0.727	0.693	0.649	0.689	0.629	0.696	0.746
MIDDLESEX WATER CO	0.596	0.625	0.614	0.631	0.615	0.616	0.645	0.614	0.608	0.628	0.655	0.628	0.642	0.624	0.640	0.615	0.590	0.608
SIW GROUP	0.987	1.022	1.010	1.005	1.020	1.025	1.062	1.090	1.048	1.075	1.041	1.059	1.045	1.029	1.067	1.055	1.077	1.036
YORK WATER CO	0.643	0.640	0.609	0.652	0.644	0.633	0.643	0.642	0.647	0.660	0.689	0.664	0.648	0.631	0.670	0.620	0.624	0.618

5/31/2020	9/30/2014	8/31/2014	7/31/2014	6/30/2014	5/31/2014	4/30/2014	3/31/2014	2/28/2014	1/31/2014	12/31/2013	11/30/2013	10/31/2013	9/30/2013	8/31/2013	7/31/2013	6/30/2013	5/31/2013	4/30/2013
Enterprise value to Net PPE	68%	70%	68%	69%	70%	68%	70%	70%	68%	70%	70%	70%	70%	67%	67%	70%	66%	66%
Enterprise value to Inv Cap	71%	75%	72%	74%	72%	71%	72%	72%	70%	70%	71%	70%	67%	65%	68%	64%	67%	70%

Month End	Median Enterprise Value to Inv Cap	Median Enterprise Value to Net PPE	Average Index
3/31/2020	100%	100%	100%
2/29/2020	99%	99%	99%
1/31/2020	109%	109%	109%
12/31/2019	104%	104%	104%
11/30/2019	104%	105%	105%
10/31/2019	107%	108%	107%
9/30/2019	105%	105%	105%
8/31/2019	107%	112%	110%
7/31/2019	103%	104%	103%
6/30/2019	100%	102%	101%
5/31/2019	100%	102%	101%
4/30/2019	100%	102%	101%
3/31/2019	97%	102%	100%
2/28/2019	99%	110%	104%
1/31/2019	96%	104%	100%
12/31/2018	94%	102%	98%
11/30/2018	92%	105%	99%
10/31/2018	87%	97%	92%
9/30/2018	91%	101%	96%
8/31/2018	91%	101%	96%
7/31/2018	89%	99%	94%
6/30/2018	85%	94%	90%
5/31/2018	88%	97%	92%
4/30/2018	86%	93%	90%
3/31/2018	84%	86%	85%
2/28/2018	85%	89%	87%
1/31/2018	87%	93%	90%
12/31/2017	93%	99%	96%
11/30/2017	96%	108%	102%
10/31/2017	91%	102%	96%
9/30/2017	87%	94%	91%
8/31/2017	88%	95%	92%
7/31/2017	89%	98%	94%

6/30/2017	87%	95%	91%
5/31/2017	88%	92%	90%
4/30/2017	88%	97%	93%
3/31/2017	87%	94%	91%
2/28/2017	88%	97%	93%
1/31/2017	86%	94%	90%
12/31/2016	89%	102%	95%
11/30/2016	89%	99%	94%
10/31/2016	84%	89%	87%
9/30/2016	83%	89%	86%
8/31/2016	84%	88%	86%
7/31/2016	90%	99%	94%
6/30/2016	91%	101%	96%
5/31/2016	83%	90%	86%
4/30/2016	82%	88%	85%
3/31/2016	79%	85%	82%
2/29/2016	78%	79%	79%
1/31/2016	78%	78%	78%
12/31/2015	73%	74%	74%
11/30/2015	73%	73%	73%
10/31/2015	72%	72%	72%
9/30/2015	71%	71%	71%
8/31/2015	69%	70%	69%
7/31/2015	69%	70%	70%
6/30/2015	69%	70%	69%
5/31/2015	71%	74%	73%
4/30/2015	73%	76%	74%
3/31/2015	74%	75%	74%
2/28/2015	75%	76%	76%
1/31/2015	74%	75%	75%
12/31/2014	73%	74%	74%
11/30/2014	72%	75%	74%
10/31/2014	74%	76%	75%
9/30/2014	68%	71%	69%
8/31/2014	70%	75%	73%
7/31/2014	68%	72%	70%
6/30/2014	69%	74%	72%
5/31/2014	70%	72%	71%
4/30/2014	68%	71%	70%

WORKING NOTES					WORKING NOTES									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			Change											
	\$ 406.98	\$ 386.44	\$ 381.09	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 535.01	
				\$ 148.63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5.30	
		10,378	9,468	7,812	969,643	5,238	5,471	5,531	5,593	5,655	5,717	5,781		
		689,630	674,148	681,960	969,643	985,799	996,597	1,007,659	1,018,844	1,030,154	1,041,588	1,053,150	10,531	
		-	-	265,965	-	-	-	-	-	-	-	-	10,531	
0.1432%			7,029	7,021	7,018	7,016	7,014	7,011	7,009	7,006	7,004	7,001		
0.5690%			3,897	3,950	5,508	5,632	5,724	5,785	5,848	5,912	5,976	6,041		
			10,926	10,971	12,526	12,648	12,738	12,796	12,857	12,918	12,980	13,042		

Valley Township Water System Assets
Investor Provided -
Gross PP&E 6,843,616
Net PP&E 4,983,659
Revenues 698,550
EBITDA 78,704
EBIT 78,704
Customers 1,669
Population 7,493

-	-	6,843,616	6,869,116
-	-	4,983,659	4,908,856
1,669	1,669	1,669	1,720

	2017	2018	2019	2020	2021					
y W										
LESS: EOS - Wages & Benefits	0	0	73,839	78,177		0.15	LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0	0	46,483	35,150		0.5	LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	0	0	-	-			LESS: EOS - Elim Transfers	100% savings	100%	1
y W										
Wages	0	0	73,839	78,177						
Professional Services	0	0	46,483	35,150						
Eliminated Exp	0	0	0	0						

y W Reported CAPX - from the financials 0 0 0 included in OCN = to DepX 30,000

	2017	2018	2019
GROSS Property, plant and equipment	-	-	6,843,616
Accumulated Depreciation	-	-	1,859,957
NET PPE	-	-	4,983,659
Total Debt	-	na	na
Net Equity	-	na	-
Investor Provided Capital	-	#VALUE!	-
Depreciation Rate	0.00%	#DIV/0!	1.53%

Assets	Per Books	Difference
6,843,616	-	
1,859,957	-	
4,983,659	-	4,983,659
104,642		

	WORKING NOTES					WORKING NOTES					2030	
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		2027

Depreciation Expense - 104,642.00

CAPX 0 0 13,000 30,000 99,500

2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

XYZ's LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair	30000	99500	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0
PWD Base charge		0	0	0	0	0	0	0	0	0	0	0	0
CAPX	30000	99500	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP work area		0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair		0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX		0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP		0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0	0	0	0	0	0	0

State of Good Repair
 XYZ's Base CAPX
 Base & LTCP
 Base & LTCP & Expand WWTP
 Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.
 dummy
 dummy
 dummy

CAPX note
 Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.

State of Good Repair
 XYZ's Base CAPX
 Base & LTCP
 Base & LTCP & Expand WWTP
 No Additional O&M.
 dummy
 dummy
 dummy

Additional OpEx note
 No Additional O&M.

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	7,902,667	8,004,414	8,107,471	8,211,854	8,317,581	8,424,669	8,533,136	8,642,999	8,754,278	8,866,989	8,981,151	9,096,782	9,213,903	9,332,532
Accumulated Depreciation	3,017,196	3,120,793	3,225,724	3,332,005	3,439,655	3,548,690	3,659,130	3,770,991	3,884,294	3,999,054	4,115,292	4,233,026	4,352,277	4,473,063
NET PPE	4,885,471	4,883,621	4,881,747	4,879,849	4,877,926	4,875,979	4,874,006	4,872,008	4,869,984	4,867,935	4,865,859	4,863,756	4,861,626	4,859,469
Total Debt														
Net Equity														
Investor Provided Capital														

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
118.180	119,702	121,243	122,804	124,385	125,986	127,608	129,251	130,916	132,601	134,308	136,037	137,789	139,563	139,563
1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%
0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%
904	916	928	939	952	964	976	989	1,002	1,014	1,027	1,041	1,054	1,068	1,068
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
17,727	17,955	18,186	18,421	18,658	18,898	19,141	19,388	19,637	19,890	20,146	20,406	20,668	20,934	20,934
271	275	278	282	285	289	293	297	300	304	308	312	316	320	320
119,374	120,911	122,468	124,044	125,641	127,259	128,897	130,557	132,238	133,940	135,665	137,412	139,181	140,973	140,973
120,007	121,552	123,117	124,701	126,308	127,934	129,581	131,249	132,939	134,650	136,384	138,140	139,919	141,720	141,720

y W

Depreciation Expense

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

104,500.00	104,500.00	104,500.00	104,500.00	109,250.00	109,250.00	109,250.00	109,250.00	114,000.00	114,000.00	114,000.00	114,000.00	118,750.00	118,750.00	118,750.00
Sewer Rental Charges														
EDUs	1966	1988	2010	2032	2055	2078	2101	2124	2148	2172	2196	2220	2245	2270
	22	22	22	22	23	23	23	23	24	24	24	24	25	25

Valley W

1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%
44	44	45	45	46	46	47	47	48	48	49	49	50	50	50
2,021	2,044	2,066	2,089	2,113	2,136	2,160	2,184	2,208	2,232	2,257	2,282	2,308	2,333	2,333
1,075,488	1,087,426	1,110,492	1,122,818	1,140,958	1,153,622	1,172,260	1,185,272	1,205,619	1,219,001	1,239,927	1,253,691	1,279,015	1,293,212	1,293,212
532.08	532.08	537.40	537.40	540.08	540.08	542.78	542.78	546.04	546.04	549.32	549.32	554.26	554.26	554.26
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
547.04	546.99	552.48	552.57	555.21	555.16	557.95	558.04	561.28	561.23	564.63	564.73	569.72	569.70	569.70
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,058,995	1,081,457	1,093,461	1,116,655	1,129,050	1,147,290	1,160,025	1,178,766	1,191,850	1,212,310	1,225,766	1,246,809	1,260,649	1,286,114	1,286,114

Valley W

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
		1.00%		0.50%		0.50%		0.60%		0.60%		0.90%		1.10%
	\$ 535.01	\$ 540.36	\$ 540.36	\$ 543.06	\$ 543.06	\$ 545.78	\$ 545.78	\$ 549.05	\$ 549.05	\$ 552.35	\$ 552.35	\$ 557.32	\$ 557.32	\$ 563.45
	\$ -	\$ 5.35	\$ -	\$ 2.70	\$ -	\$ 2.72	\$ -	\$ 3.27	\$ -	\$ 3.29	\$ -	\$ 4.97	\$ -	\$ 6.13
	5,845	5,969	6,035	6,163	6,232	6,332	6,403	6,506	6,578	6,691	6,765	6,882	6,958	7,099
	1,075,488	1,087,426	1,110,492	1,122,818	1,140,958	1,153,622	1,172,260	1,185,272	1,205,619	1,219,001	1,239,927	1,253,691	1,279,015	1,293,212
	-	10,874	-	5,614	-	5,768	-	7,112	-	7,314	-	11,283	-	14,225
	6,999	6,996	6,993	6,991	6,988	6,985	6,982	6,980	6,977	6,974	6,971	6,968	6,965	6,962
	6,167	6,234	6,364	6,433	6,535	6,607	6,712	6,785	6,899	6,975	7,092	7,170	7,312	7,392
	13,166	13,230	13,357	13,424	13,523	13,592	13,694	13,765	13,876	13,949	14,063	14,138	14,277	14,354

y W
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses

y W
 Wages
 Professional Services
 Eliminated Exp

y W
 Reported CAPX - from the financials

GROSS Property, plant and equipment
 Accumulated Depreciation
 NET PPE

Total Debt
 Net Equity
 Investor Provided Capital

Depreciation Rate

	WORKING NOTES					WORKING NOTES					2030			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		2027	2028	2029
GROSS Property, plant and equipment	-	-	6,843,616	6,869,116	6,953,691	7,043,220	7,133,901	7,225,749	7,318,780	7,413,009	7,508,451	7,605,122	7,703,038	7,802,214
Accumulated Depreciation	-	-	1,859,957	1,960,260	2,050,965	2,142,122	2,234,451	2,327,970	2,422,693	2,518,635	2,615,812	2,714,240	2,813,936	2,914,916
NET PPE	-	-	4,983,659	4,908,856	4,902,726	4,901,098	4,899,450	4,897,779	4,896,087	4,894,374	4,892,639	4,890,882	4,889,102	4,887,298
Total Debt	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	(74,803)	-	-	-	-	-	-	-	-	-	-

Depreciation / GROSS PPE	#DIV/0!	0.00%	0.00%	1.53%											
IOU savings															
Muni CAPX			0	30,000	99,500	0	0	0	0	0	0	0	0	0	0
0%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE					1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
CAPX		0	30,000	99,500	105,328	106,684	108,057	109,448	110,858	112,285	113,731	115,195	116,678		
Dep rate	0.00%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%		
Half yr. Dep	0.00%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%		
Dep on CAPX	-	230	761	806	816	827	837	848	859	870	881	893			
Rate of retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%			
Retired property	-	4,500	14,925	15,799	16,003	16,209	16,417	16,629	16,843	17,060	17,279	17,502			
Dep on Retired property	-	69	228	242	245	248	251	254	258	261	264	268			
Dep on Prior yr. GROSS	-	104,642	105,097	106,391	107,761	109,149	110,554	111,977	113,419	114,879	116,358	117,856			
Total Dep	-	104,803	105,630	106,956	108,332	109,728	111,140	112,571	114,020	115,488	116,975	118,482			

y W	Depreciation Expense	-	104,642												
	part of OCN														
	NET PPE			PURTA	0.001527765										
	Rev			Reg Assessment Fee	0.005652534										

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CIP	\$ -	\$ 30,000	\$ 99,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
part of OCN	0	30,000										
				191	71	72	56					
	2019	2020										
	242,250.00	232,750.00	194,750.00	194,750.00	95,000.00	95,000.00	99,750.00	99,750.00	99,750.00	99,750.00	99,750.00	99,750.00

Sewer Rental Charges	683,151	725,146	679,252	664,680	674,148	799,710	818,570	832,600				
EDUs	0	0	1,669	1,669	1,718	1,759	1,800	1,820	1,840	1,860	1,881	1,902
	0	0	834.5	1,669	1,693.5	1,738.5	1,779.5	1,810	20	20	21	21
#DIV/0!	#DIV/0!	406.981462	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00				
#DIV/0!	#DIV/0!	813.9629239	398.2504494									

Valley W		C	1,669	19								
		E	1,669	19								
	1742000		1.00									
			51	49	41	41	20	1.11%	1.11%	1.11%	1.11%	1.11%
Valley W	-	35.95	36	37	38	39	40	40	41	41	42	42
	1,669	1,669	1,720	1,769	1,810	1,851	1,871	1,892	1,913	1,934	1,955	1,977
	683,151	725,146	679,252	664,680	674,148	681,960	969,643	985,799	996,597	1,007,659	1,018,844	1,030,154
	409.32	434.48	406.98	386.44	381.09	376.77	523.85	526.88	526.81	526.81	526.81	526.81
	-	0	0	0	0	0	0	0	0	0	0	0
#DIV/0!	#DIV/0!	406.98	398.25	392.40	387.70	538.69	541.65	541.63	541.75	541.65	541.62	541.65
#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0	0
			700,008	674,148	681,960	689,684	974,881	991,270	1,002,128	1,013,252	1,024,499	1,035,871
												1,047,369

WORKING NOTES					WORKING NOTES									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			Change											
	\$ 406.98	\$ 386.44	\$ 381.09	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 529.71	\$ 535.01	
				\$ 148.63	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5.30	
		10,378	9,468	7,812	969,643	5,238	5,471	5,531	5,593	5,655	5,717	5,781		
		689,630	674,148	681,960	969,643	985,799	996,597	1,007,659	1,018,844	1,030,154	1,041,588	1,053,150		
		-	-	265,965	-	-	-	-	-	-	-	-	10,531	
0.1432%			7,029	7,021	7,018	7,016	7,014	7,011	7,009	7,006	7,004	7,001		
0.5690%			3,897	3,950	5,508	5,632	5,724	5,785	5,848	5,912	5,976	6,041		
			10,926	10,971	12,526	12,648	12,738	12,796	12,857	12,918	12,980	13,042		

Valley Township Water System Assets
Investor Provided +
Gross PP&E 6,843,616
Net PP&E 4,983,659
Revenues 698,550
EBITDA 78,704
EBIT 78,704
Customers 1,669
Population 7,493

-	-	6,843,616	6,869,116
-	-	4,983,659	4,908,856
1,669	1,669	1,669	1,720

	2017	2018	2019	2020	2021				
y W									
LESS: EOS - Wages & Benefits	0	0	73,839	78,177		0.15	LESS: EOS - Wages & Benefits	15% savings	15%
LESS: EOS - Professional Services	0	0	46,483	35,150		0.5	LESS: EOS - Professional Services	50% savings	50%
LESS: EOS - Eliminated Expenses	0	0	-	-			LESS: EOS - Elim Transfers	100% savings	100%
y W									
Wages	0	0	73,839	78,177					
Professional Services	0	0	46,483	35,150					
Eliminated Exp	0	0	0	0					

y W
Reported CAPX - from the financials 0 0 0 included in OCN = to DepX 30,000

	2017	2018	2019
GROSS Property, plant and equipment	-	-	6,843,616
Accumulated Depreciation	-	-	1,859,957
NET PPE	-	-	4,983,659
Total Debt	-	na	na
Net Equity	-	na	-
Investor Provided Capital	-	#VALUE!	-
Depreciation Rate	0.00%	#DIV/0!	1.53%

Assets	Per Books	Difference
6,843,616	-	
1,859,957	-	
4,983,659	-	4,983,659
104,642		

	WORKING NOTES					WORKING NOTES								
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

Depreciation Expense - - 104,642.00

CAPX 0 0 13,000 30,000 99,500

2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

XYZ's LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair	30000	99500	0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0	0
PWD Base charge		0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX	30000	99500	0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP work area		0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair		0	0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX		0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0	0
OpEx		0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair														
XYZ's Base CAPX														
Base & LTCP														
Base & LTCP & Expand WWTP														
CAPX note														
State of Good Repair														
XYZ's Base CAPX														
Base & LTCP														
Base & LTCP & Expand WWTP														
Additional OpEx note														

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.
dummy
dummy
dummy

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.

No Additional O&M.
dummy
dummy
dummy

No Additional O&M.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	7,902,667	8,004,414	8,107,471	8,211,854	8,317,581	8,424,669	8,533,136	8,642,999	8,754,278	8,866,989	8,981,151	9,096,782	9,213,903	9,332,532
Accumulated Depreciation	3,017,196	3,120,793	3,225,724	3,332,005	3,439,655	3,548,690	3,659,130	3,770,991	3,884,294	3,999,054	4,115,292	4,233,026	4,352,277	4,473,063
NET PPE	4,885,471	4,883,621	4,881,747	4,879,849	4,877,926	4,875,979	4,874,006	4,872,008	4,869,984	4,867,935	4,865,859	4,863,756	4,861,626	4,859,469
Total Debt														
Net Equity														
Investor Provided Capital														

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
118,180	119,702	121,243	122,804	124,385	125,986	127,608	129,251	130,916	132,601	134,308	136,037	137,789	139,563	139,563
1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%
0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%
904	916	928	939	952	964	976	989	1,002	1,014	1,027	1,041	1,054	1,068	1,068
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
17,727	17,955	18,186	18,421	18,658	18,898	19,141	19,388	19,637	19,890	20,146	20,406	20,668	20,934	20,934
271	275	278	282	285	289	293	297	300	304	308	312	316	320	320
119,374	120,911	122,468	124,044	125,641	127,259	128,897	130,557	132,238	133,940	135,665	137,412	139,181	140,973	140,973
120,007	121,552	123,117	124,701	126,308	127,934	129,581	131,249	132,939	134,650	136,384	138,140	139,919	141,720	141,720

y W

Depreciation Expense

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-

104,500.00	104,500.00	104,500.00	104,500.00	109,250.00	109,250.00	109,250.00	109,250.00	114,000.00	114,000.00	114,000.00	114,000.00	118,750.00	118,750.00
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Sewer Rental Charges
EDUs

1966	1988	2010	2032	2055	2078	2101	2124	2148	2172	2196	2220	2245	2270
22	22	22	22	23	23	23	23	24	24	24	24	25	25

Valley W

1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%
44	44	45	45	46	46	47	47	48	48	49	49	50	50
2,021	2,044	2,066	2,089	2,113	2,136	2,160	2,184	2,208	2,232	2,257	2,282	2,308	2,333
1,075,488	1,087,426	1,110,492	1,122,818	1,140,958	1,153,622	1,172,260	1,185,272	1,205,619	1,219,001	1,239,927	1,253,691	1,279,015	1,293,212
532.08	532.08	537.40	537.40	540.08	540.08	542.78	542.78	546.04	546.04	549.32	549.32	554.26	554.26
0	0	0	0	0	0	0	0	0	0	0	0	0	0
547.04	546.99	552.48	552.57	555.21	555.16	557.95	558.04	561.28	561.23	564.63	564.73	569.72	569.70
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,058,995	1,081,457	1,093,461	1,116,655	1,129,050	1,147,290	1,160,025	1,178,766	1,191,850	1,212,310	1,225,766	1,246,809	1,260,649	1,286,114

Valley W

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
		1.00%		0.50%		0.50%		0.60%		0.60%		0.90%		1.10%
\$	535.01	\$ 540.36	\$ 540.36	\$ 543.06	\$ 543.06	\$ 545.78	\$ 545.78	\$ 549.05	\$ 549.05	\$ 552.35	\$ 552.35	\$ 557.32	\$ 557.32	\$ 563.45
\$	-	\$ 5.35	\$ -	\$ 2.70	\$ -	\$ 2.72	\$ -	\$ 3.27	\$ -	\$ 3.29	\$ -	\$ 4.97	\$ -	\$ 6.13
	5,845	5,969	6,035	6,163	6,232	6,332	6,403	6,506	6,578	6,691	6,765	6,882	6,958	7,099
	1,075,488	1,087,426	1,110,492	1,122,818	1,140,958	1,153,622	1,172,260	1,185,272	1,205,619	1,219,001	1,239,927	1,253,691	1,279,015	1,293,212
	-	10,874	-	5,614	-	5,768	-	7,112	-	7,314	-	11,283	-	14,225
	6,999	6,996	6,993	6,991	6,988	6,985	6,982	6,980	6,977	6,974	6,971	6,968	6,965	6,962
	6,167	6,234	6,364	6,433	6,535	6,607	6,712	6,785	6,899	6,975	7,092	7,170	7,312	7,392
	13,166	13,230	13,357	13,424	13,523	13,592	13,694	13,765	13,876	13,949	14,063	14,138	14,277	14,354

y W
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses

y W
 Wages
 Professional Services
 Eliminated Exp

y W
 Reported CAPX - from the financials

GROSS Property, plant and equipment
 Accumulated Depreciation
 NET PPE

Total Debt
 Net Equity
 Investor Provided Capital

Depreciation Rate

	WORKING NOTES					WORKING NOTES					2030			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		2027	2028	2029
GROSS Property, plant and equipment	-	-	6,843,616	6,869,116	6,953,691	7,043,220	7,133,901	7,225,749	7,318,780	7,413,009	7,508,451	7,605,122	7,703,038	7,802,214
Accumulated Depreciation	-	-	1,859,957	1,960,260	2,050,965	2,142,122	2,234,451	2,327,970	2,422,693	2,518,635	2,615,812	2,714,240	2,813,936	2,914,916
NET PPE	-	-	4,983,659	4,908,856	4,902,726	4,901,098	4,899,450	4,897,779	4,896,087	4,894,374	4,892,639	4,890,882	4,889,102	4,887,298
Total Debt	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	(74,803)	-	-	-	-	-	-	-	-	-	-

Depreciation / GROSS PPE	#DIV/0!	0.00%	0.00%	1.53%											
IOU savings															
Muni CAPX			0	30,000	99,500	0	0	0	0	0	0	0	0	0	0
0%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE					1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
CAPX	0		30,000	99,500	105,328	106,684	108,057	109,448	110,858	112,285	113,731	115,195	116,678		
Dep rate	0.00%		1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%		
Half yr. Dep	0.00%		0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%		
Dep on CAPX	-		230	761	806	816	827	837	848	859	870	881	893		
Rate of retirement	15.0%		15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%		
Retired property	-		4,500	14,925	15,799	16,003	16,209	16,417	16,629	16,843	17,060	17,279	17,502		
Dep on Retired property	-		69	228	242	245	248	251	254	258	261	264	268		
Dep on Prior yr. GROSS	-		104,642	105,097	106,391	107,761	109,149	110,554	111,977	113,419	114,879	116,358	117,856		
Total Dep	-		104,803	105,630	106,956	108,332	109,728	111,140	112,571	114,020	115,488	116,975	118,482		

y W															
Depreciation Expense	-		104,642												
part of OCN															
NET PPE															
Rev															
PURTA															
Reg Assessment Fee															
0.00152765															
0.005652534															

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CIP	\$ -	\$ 30,000	\$ 99,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
part of OCN	0	30,000										
= to DepX					191	71	72	56				

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Sewer Rental Charges	683,151	725,146	679,252	664,680	674,148	799,710	818,570	832,600				
EDUs	0	0	1,669	1,669	1,718	1,759	1,800	1,820	1,840	1,860	1,881	1,902
#DIV/0!	0	0	834.5	1,669	1,693.5	1,738.5	1,779.5	1,810	20	20	21	21
#DIV/0!	#DIV/0!	#DIV/0!	406.981462	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00				
#DIV/0!	#DIV/0!	#DIV/0!	813.9629239	398.2504494								

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Valley W												
C		1,669	19									
E		1,669	19									
1.00												
1742000												
Valley W												
35.95	36	37	38	39	40	40						
1,669	1,669	1,720	1,769	1,810	1,851	1,871						
683,151	725,146	679,252	664,680	674,148	681,960	1,178,919	1,198,562	1,211,690	1,225,140	1,238,739	1,252,489	1,266,392
409.32	434.48	406.98	386.44	381.09	376.77	636.91	640.60	640.51	640.51	640.51	640.51	640.51
0	0	0	0	0	0	0	0	0	0	0	0	0
#DIV/0!	#DIV/0!	406.98	398.25	392.40	387.70	654.96	658.55	658.53	658.68	658.55	658.51	658.55
#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0	0
			700,008	674,148	681,960	689,684	1,185,288	1,205,214	1,218,415	1,231,940	1,245,614	1,259,440
												1,273,420

WORKING NOTES					WORKING NOTES									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			Change											
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			\$ 406.98	\$ 386.44	\$ 381.09	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	
					69.00%	\$ 262.95	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
			10,378	9,468	7,812	1,178,919	6,369	6,652	6,725	6,800	6,875	6,951	7,028	
			689,630	674,148	681,960	1,178,919	1,198,562	1,211,690	1,225,140	1,238,739	1,252,489	1,266,392	1,280,449	
			-	-	470,553	-	-	-	-	-	-	-	-	
0.1432%				7,029	7,021	7,018	7,016	7,014	7,011	7,009	7,006	7,004	7,001	
0.5690%				3,897	3,950	6,672	6,823	6,934	7,009	7,086	7,163	7,241	7,320	
				10,926	10,971	13,690	13,839	13,948	14,020	14,095	14,169	14,245	14,321	

Valley Township Water System Assets
Investor Provided
Gross PP&E 6,843,616
Net PP&E 4,983,659
Revenues 698,550
EBITDA 78,704
EBIT 78,704
Customers 1,669
Population 7,493

-	-	6,843,616	6,869,116
-	-	4,983,659	4,908,856
1,669	1,669	1,669	1,720

	2017	2018	2019	2020	2021					
y W										
LESS: EOS - Wages & Benefits	0	0	73,839	78,177		0.15	LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0	0	46,483	35,150		0.5	LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	0	0	-	-			LESS: EOS - Elim Transfers	100% savings	100%	1
y W										
Wages	0	0	73,839	78,177						
Professional Services	0	0	46,483	35,150						
Eliminated Exp	0	0	0	0						
y W										
Reported CAPX - from the financials	0	0	0	30,000			included in OCN = to DepX			

	2017	2018	2019
GROSS Property, plant and equipment	-	-	6,843,616
Accumulated Depreciation	-	-	1,859,957
NET PPE	-	-	4,983,659
Total Debt	-	na	na
Net Equity	-	na	-
Investor Provided Capital	-	-	#VALUE!
Depreciation Rate	0.00%	#DIV/0!	1.53%

Assets	Per Books	Difference
6,843,616	-	
1,859,957	-	
4,983,659	-	4,983,659
104,642		

	WORKING NOTES					WORKING NOTES									
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	

Depreciation Expense	-	-	104,642.00											
CAPX	0	0	13,000	30,000	99,500									

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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XYZ's LTCP	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair	30000	99500	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0
Expand WWTP		0	0	0	0	0	0	0	0	0	0	0
PWD Base charge		0	0	0	0	0	0	0	0	0	0	0
CAPX	30000	99500	0	0	0	0	0	0	0	0	0	0
Expand WWTP work area		0	0	0	0	0	0	0	0	0	0	0
State of Good Repair		0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX		0	0	0	0	0	0	0	0	0	0	0
Base & LTCP		0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP		0	0	0	0	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair												
XYZ's Base CAPX												
Base & LTCP												
Base & LTCP & Expand WWTP												
CAPX note												
State of Good Repair												
XYZ's Base CAPX												
Base & LTCP												
Base & LTCP & Expand WWTP												
Additional OpEx note												

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.
 dummy
 dummy
 dummy

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.51% of prior year-end GROSS Property, plant and equipment.

No Additional O&M.
 dummy
 dummy
 dummy

No Additional O&M.

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	7,902,667	8,004,414	8,107,471	8,211,854	8,317,581	8,424,669	8,533,136	8,642,999	8,754,278	8,866,989	8,981,151	9,096,782	9,213,903	9,332,532
Accumulated Depreciation	3,017,196	3,120,793	3,225,724	3,332,005	3,439,655	3,548,690	3,659,130	3,770,991	3,884,294	3,999,054	4,115,292	4,233,026	4,352,277	4,473,063
NET PPE	4,885,471	4,883,621	4,881,747	4,879,849	4,877,926	4,875,979	4,874,006	4,872,008	4,869,984	4,867,935	4,865,859	4,863,756	4,861,626	4,859,469
Total Debt														
Net Equity														
Investor Provided Capital														

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
118.180	119,702	121,243	122,804	124,385	125,986	127,608	129,251	130,916	132,601	134,308	136,037	137,789	139,563	139,563
1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%	1.53%
0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%
904	916	928	939	952	964	976	989	1,002	1,014	1,027	1,041	1,054	1,068	1,068
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
17,727	17,955	18,186	18,421	18,658	18,898	19,141	19,388	19,637	19,890	20,146	20,406	20,668	20,934	20,934
271	275	278	282	285	289	293	297	300	304	308	312	316	320	320
119,374	120,911	122,468	124,044	125,641	127,259	128,897	130,557	132,238	133,940	135,665	137,412	139,181	140,973	140,973
120,007	121,552	123,117	124,701	126,308	127,934	129,581	131,249	132,939	134,650	136,384	138,140	139,919	141,720	141,720

y W

Depreciation Expense

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

104,500.00	104,500.00	104,500.00	104,500.00	109,250.00	109,250.00	109,250.00	109,250.00	114,000.00	114,000.00	114,000.00	114,000.00	118,750.00	118,750.00	118,750.00
Sewer Rental Charges	1966	1988	2010	2032	2055	2078	2101	2124	2148	2172	2196	2220	2245	2270
EDUs	22	22	22	22	23	23	23	23	24	24	24	24	25	25

Valley W

1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%
44	44	45	45	46	46	47	47	48	48	49	49	50	50	50
2,021	2,044	2,066	2,089	2,113	2,136	2,160	2,184	2,208	2,232	2,257	2,282	2,308	2,333	2,333
1,294,662	1,309,032	1,323,563	1,338,254	1,353,109	1,368,128	1,383,314	1,398,669	1,414,194	1,429,892	1,450,101	1,466,197	1,488,402	1,504,923	1,504,923
640.51	640.51	640.51	640.51	640.51	640.51	640.51	640.51	640.51	640.51	642.43	642.43	645.00	645.00	645.00
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
658.53	658.47	658.49	658.59	658.45	658.39	658.41	658.51	658.38	658.33	660.34	660.45	662.99	662.96	662.96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,287,555	1,301,847	1,316,297	1,330,909	1,345,681	1,360,619	1,375,721	1,390,991	1,406,432	1,422,043	1,437,828	1,458,149	1,474,334	1,496,663	1,496,663

	2021	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	2021	2032	2033	2034	2035	2036	2037	2038	2039	2040 0.30%	2041	2042 0.40%	2043	2044 0.50%
\$	644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 644.04	\$ 645.97	\$ 645.97	\$ 648.56	\$ 648.56	\$ 651.80
\$	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	1.93	\$ -	2.58	\$ -	3.24
	7,106	7,185	7,265	7,346	7,427	7,510	7,593	7,677	7,763	7,849	7,936	8,048	8,137	8,261
	1,294,662	1,309,032	1,323,563	1,338,254	1,353,109	1,368,128	1,383,314	1,398,669	1,414,194	1,429,892	1,450,101	1,466,197	1,488,402	1,504,923
	-	-	-	-	-	-	-	-	-	4,290	-	5,865	-	7,525
	6,999	6,996	6,993	6,991	6,988	6,985	6,982	6,980	6,977	6,974	6,971	6,968	6,965	6,962
	7,400	7,481	7,563	7,646	7,729	7,814	7,899	7,986	8,073	8,161	8,275	8,366	8,491	8,584
	14,399	14,477	14,556	14,637	14,717	14,799	14,881	14,966	15,050	15,135	15,246	15,334	15,456	15,546

y W
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses

y W
 Wages
 Professional Services
 Eliminated Exp

y W
 Reported CAPX - from the financials

GROSS Property, plant and equipment
 Accumulated Depreciation
 NET PPE

Total Debt
 Net Equity
 Investor Provided Capital

Depreciation Rate

	WORKING NOTES					WORKING NOTES					2030			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		2027	2028	2029
GROSS Property, plant and equipment	-	-	10,937,985	10,963,485	11,048,060	11,188,443	11,330,611	11,474,585	11,620,389	11,768,045	11,917,578	12,069,011	12,222,368	12,377,673
Accumulated Depreciation	-	-	3,337,985	3,498,808	3,649,957	3,792,882	3,937,624	4,084,204	4,232,647	4,382,976	4,535,215	4,689,389	4,845,522	5,003,638
NET PPE	-	-	7,600,000	7,464,677	7,398,103	7,395,561	7,392,987	7,390,381	7,387,742	7,385,069	7,382,363	7,379,622	7,376,846	7,374,035
Total Debt	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	(135,323)	-	-	-	-	-	-	-	-	-	-

Depreciation / GROSS PPE	#DIV/0!	0.00%	0.00%	1.51%													
IOU savings					Muni CAPX	0	30,000	99,500	0	0	0	0	0	0	0		
					0%			100%	100%	100%	100%	100%	100%	100%	100%		
					CAPX/Prior Yr. GROSS PPE			1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%		
					CAPX	0	30,000	99,500	165,157	167,256	169,381	171,534	173,713	175,921	178,156	180,420	182,712
					Dep rate	0.00%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
					Half yr. Dep	0.00%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
					Dep on CAPX	-	227	751	1,247	1,263	1,279	1,295	1,312	1,328	1,345	1,362	1,379
					Rate of retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
					Retired property	-	4,500	14,925	24,774	25,088	25,407	25,730	26,057	26,388	26,723	27,063	27,407
					Dep on Retired property	-	68	225	374	379	384	389	393	398	404	409	414
					Dep on Prior yr. GROSS	-	165,164	165,549	166,826	168,945	171,092	173,266	175,468	177,697	179,955	182,242	184,558
					Total Dep	-	165,323	166,074	167,699	169,830	171,988	174,173	176,386	178,627	180,897	183,195	185,523

y W Depreciation Expense - 165,164 part of OCN
NET PPE Rev PURTA 0.00152765
Reg Assessment Fee 0.005652534

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CIP	\$ -	\$ 30,000	\$ 99,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
part of OCN	0	30,000			191	71	72	56				

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Sewer Rental Charges	683,151	725,146	679,252	664,680	674,148	799,710	818,570	832,600						
EDUs	0	0	1,669	1,669	1,718	1,759	1,800	1,820	1,840	1,860	1,881	1,902	1,923	1,944
#DIV/0!	0	0	834.5	1669	1693.5	1738.5	1779.5	1810	20	20	21	21	21	21
#DIV/0!	#DIV/0!	#DIV/0!	406.981462	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00						
#DIV/0!	#DIV/0!	#DIV/0!	813.9629239	398.2504494										

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Valley W			C 1,669	E 1,669	19	19								
	1742000		51	49	41	41	40	20	1.11%	1.11%	1.11%	1.11%		
Valley W	-	35.95	36	37	38	39	40	40	41	42	43	43		
	1,669	1,669	1,669	1,720	1,769	1,810	1,851	1,871	1,892	1,913	1,934	1,955	1,977	
	683,151	725,146	679,252	664,680	674,148	681,960	1,171,943	1,191,470	1,204,520	1,217,891	1,231,409	1,245,078	1,258,898	1,272,872
	409.32	434.48	406.98	386.44	381.09	376.77	633.14	636.81	636.72	636.72	636.72	636.72	636.72	
	-	0	0	0	0	0	0	0	0	0	0	0	0	
#DIV/0!	#DIV/0!	#DIV/0!	406.98	398.25	392.40	387.70	651.08	654.65	654.63	654.78	654.66	654.62	654.65	
#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0	0	
			700.008	674,148	681,960	689,684	1,178,274	1,198,083	1,211,205	1,224,650	1,238,243	1,251,988	1,265,885	

WORKING NOTES					WORKING NOTES									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			Change											
	\$ 406.98	\$ 386.44	\$ 381.09		\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	
					\$ 259.14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		10,378	9,468	7,812	1,171,943	6,331	6,613	6,685	6,759	6,834	6,910	6,987		
		689,630	674,148	681,960	1,171,943	1,191,470	1,204,520	1,217,891	1,231,409	1,245,078	1,258,898	1,272,872		
		-	-	463,733	-	-	-	-	-	-	-	-		
0.1432%			10,689	10,594	10,590	10,587	10,583	10,579	10,575	10,572	10,568	10,564		
0.5690%			3,897	3,950	6,634	6,783	6,894	6,968	7,044	7,121	7,199	7,278		
			14,586	14,544	17,224	17,370	17,477	17,547	17,619	17,693	17,767	17,842		

Valley Township Water System Assets
Investor Provided
Gross PP&E 10,937,985
Net PP&E 7,600,000
Revenues 698,550
EBITDA 78,704
EBIT 78,704
Customers 1,669
Population 7,493

-	-	10,937,985	10,963,485
-	-	7,600,000	7,464,677
1,669	1,669	1,669	1,720

	2017	2018	2019	2020	2021					
y W										
LESS: EOS - Wages & Benefits	0	0	73,839	78,177		0.15	LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0	0	46,483	35,150		0.5	LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	0	0	-	-			LESS: EOS - Elim Transfers	100% savings	100%	1
y W										
Wages	0	0	73,839	78,177						
Professional Services	0	0	46,483	35,150						
Eliminated Exp	0	0	0	0						

y W
Reported CAPX - from the financials 0 0 0 included in OCN = to DepX 30,000

	2017	2018	2019
GROSS Property, plant and equipment	-	-	10,937,985
Accumulated Depreciation	-	-	3,337,985
NET PPE	-	-	7,600,000
Total Debt	-	na	na
Net Equity	-	na	-
Investor Provided Capital	-	#VALUE!	-
Depreciation Rate	0.00%	#DIV/0!	1.51%

Assets	Per Books	Difference
10,937,985	-	
3,337,985	-	
7,600,000	-	7,600,000
165,164		

	WORKING NOTES					WORKING NOTES								
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

Depreciation Expense - - 165,164.00

CAPX 0 0 13,000 30,000 99,500

2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030

XYZ's LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair	30000	99500	0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0	0
PWD Base charge		0	0	0	0	0	0	0	0	0	0	0	0	0
CAPX	30000	99500	0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP work area		0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair		0	0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX		0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP		0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair														
XYZ's Base CAPX														
Base & LTCP														
Base & LTCP & Expand WWTP														
CAPX note														
State of Good Repair														
XYZ's Base CAPX														
Base & LTCP														
Base & LTCP & Expand WWTP														
Additional OpEx note														

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.
dummy
dummy
dummy

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.

No Additional O&M.
dummy
dummy
dummy

No Additional O&M.

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	12,534,952	12,694,229	12,855,530	13,018,880	13,184,306	13,351,834	13,521,491	13,693,304	13,867,300	14,043,507	14,221,953	14,402,666	14,585,675	14,771,010
Accumulated Depreciation	5,163,763	5,325,924	5,490,145	5,656,452	5,824,872	5,995,433	6,168,160	6,343,083	6,520,228	6,699,625	6,881,301	7,065,285	7,251,608	7,440,298
NET PPE	7,371,189	7,368,305	7,365,385	7,362,428	7,359,434	7,356,401	7,353,331	7,350,221	7,347,072	7,343,882	7,340,652	7,337,381	7,334,067	7,330,712
Total Debt														
Net Equity														
Investor Provided Capital														

Depreciation / GROSS PPE

	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%
185,034	187,385	189,766	192,177	194,619	197,092	199,597	202,133	204,701	207,302	209,936	212,604	215,305	218,041	220,811
1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%
1,397	1,415	1,433	1,451	1,469	1,488	1,507	1,526	1,545	1,565	1,585	1,605	1,626	1,646	1,666
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
27,755	28,108	28,465	28,827	29,193	29,564	29,940	30,320	30,705	31,095	31,490	31,891	32,296	32,706	33,121
419	424	430	435	441	446	452	458	464	470	475	482	488	494	500
186,903	189,278	191,683	194,119	196,585	199,083	201,613	204,175	206,769	209,396	212,057	214,751	217,480	220,244	223,043
187,881	190,268	192,686	195,134	197,613	200,125	202,668	205,243	207,850	210,492	213,166	215,875	218,619	221,396	224,205

y W

Depreciation Expense

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
104,500.00	104,500.00	104,500.00	104,500.00	104,500.00	109,250.00	109,250.00	109,250.00	109,250.00	114,000.00	114,000.00	114,000.00	114,000.00	118,750.00	118,750.00
Sewer Rental Charges														
EDUs	1966	1988	2010	2032	2055	2078	2101	2124	2148	2172	2196	2220	2245	2270
	22	22	22	22	23	23	23	23	24	24	24	24	25	25
Valley W														
1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%
44	44	45	45	46	46	46	47	47	48	48	49	49	50	50
2,021	2,044	2,066	2,089	2,113	2,136	2,160	2,184	2,208	2,232	2,257	2,282	2,308	2,333	2,359
1,287,001	1,301,287	1,315,731	1,330,335	1,345,102	1,360,033	1,375,129	1,390,393	1,405,826	1,421,431	1,444,395	1,464,428	1,485,498	1,501,987	1,518,996
636.72	636.72	636.72	636.72	636.72	636.72	636.72	636.72	636.72	636.72	636.72	639.90	639.90	643.74	643.74
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
654.63	654.57	654.59	654.69	654.55	654.49	654.51	654.61	654.48	654.43	657.74	657.85	661.69	661.67	661.67
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,279,936	1,294,144	1,308,509	1,323,033	1,337,718	1,352,567	1,367,581	1,382,761	1,398,110	1,413,628	1,429,320	1,445,211	1,461,313	1,477,633	1,494,181

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040 0.50%	2041	2042 0.60%	2043	2044 0.70%
	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 640.23	\$ 643.43	\$ 643.43	\$ 647.29	\$ 647.29	\$ 651.82
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3.20	\$ -	\$ 3.86	\$ -	\$ 4.53
	7,064	7,143	7,222	7,302	7,383	7,465	7,548	7,632	7,717	7,802	7,889	8,016	8,105	8,245
	1,287,001	1,301,287	1,315,731	1,330,335	1,345,102	1,360,033	1,375,129	1,390,393	1,405,826	1,421,431	1,444,395	1,460,428	1,485,498	1,501,987
	-	-	-	-	-	-	-	-	-	7,107	-	8,763	-	10,514
	10,560	10,556	10,551	10,547	10,543	10,539	10,534	10,530	10,526	10,521	10,516	10,512	10,507	10,502
	7,357	7,438	7,519	7,601	7,684	7,768	7,853	7,939	8,026	8,114	8,243	8,333	8,474	8,567
	17,917	17,994	18,070	18,148	18,227	18,307	18,387	18,469	18,552	18,635	18,759	18,845	18,981	19,069

y W
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses

y W
 Wages
 Professional Services
 Eliminated Exp

y W
 Reported CAPX - from the financials

GROSS Property, plant and equipment
 Accumulated Depreciation
 NET PPE

Total Debt
 Net Equity
 Investor Provided Capital

Depreciation Rate

	WORKING NOTES					WORKING NOTES					2030			
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		2027	2028	2029
GROSS Property, plant and equipment	-	-	10,937,985	10,963,485	11,048,060	11,188,443	11,330,611	11,474,585	11,620,389	11,768,045	11,917,578	12,069,011	12,222,368	12,377,673
Accumulated Depreciation	-	-	3,337,985	3,498,808	3,649,957	3,792,882	3,937,624	4,084,204	4,232,647	4,382,976	4,535,215	4,689,389	4,845,522	5,003,638
NET PPE	-	-	7,600,000	7,464,677	7,398,103	7,395,561	7,392,987	7,390,381	7,387,742	7,385,069	7,382,363	7,379,622	7,376,846	7,374,035
Total Debt	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Net Equity	-	na	na	-	-	-	-	-	-	-	-	-	-	-
Investor Provided Capital	-	-	-	(135,323)	-	-	-	-	-	-	-	-	-	-

Depreciation / GROSS PPE	#DIV/0!	0.00%	0.00%	1.51%					0	0				
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IOU savings	Muni CAPX	0	30,000	99,500	0	0	0	0	0	0	0	0	0	0	0
	0%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
CAPX/Prior Yr. GROSS PPE				1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%
CAPX	0	30,000	99,500	165,157	167,256	169,381	171,534	173,713	175,921	178,156	180,420	182,712			
Dep rate	0.00%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	
Half yr. Dep	0.00%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	
Dep on CAPX	-	227	751	1,247	1,263	1,279	1,295	1,312	1,328	1,345	1,362	1,379			
Rate of retirement	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
Retired property	-	4,500	14,925	24,774	25,088	25,407	25,730	26,057	26,388	26,723	27,063	27,407			
Dep on Retired property	-	68	225	374	379	384	389	393	398	404	409	414			
Dep on Prior yr. GROSS	-	165,164	165,549	166,826	168,945	171,092	173,266	175,468	177,697	179,955	182,242	184,558			
Total Dep	-	165,323	166,074	167,699	169,830	171,988	174,173	176,386	178,627	180,897	183,195	185,523			

y W Depreciation Expense	-	165,164													
	part of OCN														
NET PPE Rev			PURTA Reg Assessment Fee	0.001527765	0.005652534										

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CIP	\$	-	\$ 30,000	\$ 99,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	part of OCN		= to DepX										
		0	30,000			191	71	72	56				

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Sewer Rental Charges		242,250.00	232,750.00	194,750.00	194,750.00	95,000.00	95,000.00	99,750.00	99,750.00	99,750.00	99,750.00	99,750.00	99,750.00		
EDUs		683,151	725,146	679,252	664,680	674,148	799,710	818,570	832,600	1840	1860	1881	1902	1923	1944
		0	0	1,669	1,669	1,718	1,759	1,800	1,820	20	20	21	21	21	21
		0	0	834.5	1669	1693.5	1738.5	1779.5	1810						
#DIV/0!	#DIV/0!	406.981462	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00	\$ 460.00							
#DIV/0!	#DIV/0!	813.9629239	398.2504494												

Valley W		C	1,669	19											
		E	1,669	19											
			1.00												
Valley W	1742000														
		36	37	38	39	40	40	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	
		35.95	1,669	1,720	1,769	1,810	1,851	1,871	1,892	1,913	1,934	1,955	1,977	1,999	
		683,151	725,146	679,252	664,680	674,148	681,960	1,464,929	1,489,337	1,505,650	1,522,363	1,539,261	1,556,347	1,573,623	1,591,090
		409.32	434.48	406.98	386.44	381.09	376.77	791.43	796.01	795.90	795.90	795.90	795.90	795.90	795.90
		0	0	0	0	0	0	0	0	0	0	0	0	0	0
#DIV/0!	#DIV/0!	406.98	398.25	392.40	387.70	813.85	818.32	818.29	818.47	818.32	818.27	818.32	818.27	818.32	818.46
#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		700,008	674,148	681,960	689,684	1,472,843	1,497,603	1,514,006	1,530,812	1,547,804	1,564,985	1,582,357			

WORKING NOTES					WORKING NOTES									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
			Change											
	\$ 406.98	\$ 386.44	\$ 381.09	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	
				\$ 419.20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
		10,378	9,468	7,812	1,464,929	7,914	8,266	8,356	8,449	8,543	8,638	8,734		
		689,630	674,148	681,960	1,464,929	1,489,337	1,505,650	1,522,363	1,539,261	1,556,347	1,573,623	1,591,090		
		-	-	750,156	-	-	-	-	-	-	-	-		
0.1432%			10,689	10,594	10,590	10,587	10,583	10,579	10,575	10,572	10,568	10,564		
0.5690%			3,897	3,950	8,263	8,450	8,589	8,682	8,777	8,873	8,970	9,069		
			14,586	14,544	18,853	19,037	19,172	19,261	19,352	19,445	19,538	19,633		

Valley Township Water System Assets
Investor Provided
Gross PP&E 10,937,985
Net PP&E 7,600,000
Revenues 698,550
EBITDA 78,704
EBIT 78,704
Customers 1,669
Population 7,493

-	-	10,937,985	10,963,485
-	-	7,600,000	7,464,677
1,669	1,669	1,669	1,720

	2017	2018	2019	2020	2021					
y W										
LESS: EOS - Wages & Benefits	0	0	73,839	78,177		0.15	LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Professional Services	0	0	46,483	35,150		0.5	LESS: EOS - Professional Services	50% savings	50%	0.5
LESS: EOS - Eliminated Expenses	0	0	-	-			LESS: EOS - Elim Transfers	100% savings	100%	1
y W										
Wages	0	0	73,839	78,177						
Professional Services	0	0	46,483	35,150						
Eliminated Exp	0	0	0	0						

y W
Reported CAPX - from the financials 0 0 0 30,000 = to DepX

	2017	2018	2019
GROSS Property, plant and equipment	-	-	10,937,985
Accumulated Depreciation	-	-	3,337,985
NET PPE	-	-	7,600,000
Total Debt	-	na	na
Net Equity	-	na	-
Investor Provided Capital	-	#VALUE!	-
Depreciation Rate	0.00%	#DIV/0!	1.51%

Assets	Per Books	Difference
10,937,985	-	
3,337,985	-	
7,600,000	-	7,600,000
165,164		

	WORKING NOTES					WORKING NOTES								
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030

Depreciation Expense - - 165,164.00

CAPX 0 0 13,000 30,000 99,500

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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XYZ's LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair	30000	99500	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP	0	0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP	0	0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0
xyz LTCP		0	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0
PWD Base charge		0	0	0	0	0	0	0	0	0	0	0	0
CAPX	30000	99500	0	0	0	0	0	0	0	0	0	0	0
Expand WWTP work area		0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair		0	0	0	0	0	0	0	0	0	0	0	0
XYZ's Base CAPX		0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP		0	0	0	0	0	0	0	0	0	0	0	0
Base & LTCP & Expand WWTP		0	0	0	0	0	0	0	0	0	0	0	0
OpEx	0	0	0	0	0	0	0	0	0	0	0	0	0
State of Good Repair													
XYZ's Base CAPX													
Base & LTCP													
Base & LTCP & Expand WWTP													
CAPX note													
State of Good Repair													
XYZ's Base CAPX													
Base & LTCP													
Base & LTCP & Expand WWTP													
Additional OpEx note													

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.
dummy
dummy
dummy

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.49% of prior year-end GROSS Property, plant and equipment.

No Additional O&M.
dummy
dummy
dummy

No Additional O&M.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	12,534,952	12,694,229	12,855,530	13,018,880	13,184,306	13,351,834	13,521,491	13,693,304	13,867,300	14,043,507	14,221,953	14,402,666	14,585,675	14,771,010
Accumulated Depreciation	5,163,763	5,325,924	5,490,145	5,656,452	5,824,872	5,995,433	6,168,160	6,343,083	6,520,228	6,699,625	6,881,301	7,065,285	7,251,608	7,440,298
NET PPE	7,371,189	7,368,305	7,365,385	7,362,428	7,359,434	7,356,401	7,353,331	7,350,221	7,347,072	7,343,882	7,340,652	7,337,381	7,334,067	7,330,712
Total Debt														
Net Equity														
Investor Provided Capital														

Depreciation / GROSS PPE

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%
185.034	187.385	189.766	192.177	194.619	197.092	199.597	202.133	204.701	207.302	209.936	212.604	215.305	218.041	
1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	
0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	0.76%	
1,397	1,415	1,433	1,451	1,469	1,488	1,507	1,526	1,545	1,565	1,585	1,605	1,626	1,646	
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	
27,755	28,108	28,465	28,827	29,193	29,564	29,940	30,320	30,705	31,095	31,490	31,891	32,296	32,706	
419	424	430	435	441	446	452	458	464	470	475	482	488	494	
186,903	189,278	191,683	194,119	196,585	199,083	201,613	204,175	206,769	209,396	212,057	214,751	217,480	220,244	
187,881	190,268	192,686	195,134	197,613	200,125	202,668	205,243	207,850	210,492	213,166	215,875	218,619	221,396	

y W

Depreciation Expense

	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
104,500.00	104,500.00	104,500.00	104,500.00	104,500.00	109,250.00	109,250.00	109,250.00	109,250.00	114,000.00	114,000.00	114,000.00	114,000.00	118,750.00	118,750.00
Sewer Rental Charges														
EDUs	1966	1988	2010	2032	2055	2078	2101	2124	2148	2172	2196	2220	2245	2270
	22	22	22	22	23	23	23	23	24	24	24	24	25	25

Valley W

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2040	2041	2042	2043	2044
1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%	1.11%
44	44	45	45	46	46	47	47	48	48	49	49	49	50	50
2,021	2,044	2,066	2,089	2,113	2,136	2,160	2,184	2,208	2,232	2,257	2,282	2,308	2,333	
1,608,751	1,626,608	1,644,663	1,662,919	1,681,378	1,700,041	1,718,911	1,737,991	1,757,283	1,776,789	1,800,104	1,820,085	1,845,809	1,866,298	
795.90	795.90	795.90	795.90	795.90	795.90	795.90	795.90	795.90	795.90	797.49	797.49	799.88	799.88	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	
818.29	818.21	818.24	818.37	818.19	818.11	818.14	818.26	818.10	818.04	819.72	819.86	822.19	822.16	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1,599,921	1,617,680	1,635,636	1,653,791	1,672,148	1,690,710	1,709,476	1,728,451	1,747,637	1,767,036	1,786,650	1,810,095	1,830,186	1,856,053	

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040 0.20%	2041	2042 0.30%	2043	2044 0.40%
	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 800.29	\$ 801.89	\$ 801.89	\$ 804.29	\$ 804.29	\$ 807.51
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1.60	\$ -	\$ 2.41	\$ -	\$ 3.22
	8,831	8,929	9,028	9,128	9,229	9,332	9,435	9,540	9,646	9,753	9,861	9,991	10,101	10,244
	1,608,751	1,626,608	1,644,663	1,662,919	1,681,378	1,700,041	1,718,911	1,737,991	1,757,283	1,776,789	1,800,104	1,820,085	1,845,809	1,866,298
	-	-	-	-	-	-	-	-	-	3,554	-	5,460	-	7,465
	10,560	10,556	10,551	10,547	10,543	10,539	10,534	10,530	10,526	10,521	10,516	10,512	10,507	10,502
	9,168	9,268	9,370	9,473	9,577	9,682	9,788	9,895	10,004	10,114	10,245	10,357	10,502	10,617
	19,728	19,824	19,921	20,020	20,120	20,221	20,322	20,425	20,530	20,635	20,761	20,869	21,009	21,119

y W
 LESS: EOS - Wages & Benefits
 LESS: EOS - Professional Services
 LESS: EOS - Eliminated Expenses

y W
 Wages
 Professional Services
 Eliminated Exp

y W
 Reported CAPX - from the financials

GROSS Property, plant and equipment
 Accumulated Depreciation
 NET PPE

Total Debt
 Net Equity
 Investor Provided Capital

Depreciation Rate

Valley Township Water System Assets

Total Debt	#VALUE!	#VALUE!	#VALUE!
Purchase of Capital Assets	NA	NA	NA
	2019	2018	2017
Income (Loss) Before Transfers	#VALUE!	#VALUE!	#VALUE!
Interest paid	NA	NA	NA
Depreciation	0	0	0
Total Source	#VALUE!	#VALUE!	#VALUE!
Income tax	0	0	0
Principal	NA	NA	NA
Interest paid	NA	NA	NA
Total Use	\$0	\$0	\$0

W/Out Trans

Debt Service Coverage	#VALUE!	#VALUE!	#VALUE!
Pre-Tax Interest Coverage - Including AFC(3)(x)	#VALUE!	#VALUE!	#VALUE!
Post-Tax Interest Coverage - Including AFC(3)(x)	#VALUE!	#VALUE!	#VALUE!
GCF / Interest Coverage(4)(x)	#VALUE!	#VALUE!	#VALUE!
GCF / Tot. Debt(7)(%)	#VALUE!	#VALUE!	#VALUE!
GCF / Construction(6)(%)	#VALUE!	#VALUE!	#VALUE!

Comparable Group

Debt Service Coverage - As Reported							
	2019	2018	2017		2019	2018	2017
Comparable Group							
AMERICAN STATES WATER COMPANY	2.2	5.4	2.4				
AMERICAN WATER WORKS COMPANY, INC.	1.8	1.7	1.0				
ARTESIAN RESOURCES CORPORATION	3.7	4.1	4.0				
CALIFORNIA WATER SERVICE GROUP	0.4	3.4	3.0				
ESSENTIAL UTILITIES, INC.	0.4	0.5	1.0				
MIDDLESEX WATER COMPANY	4.0	4.0	3.7				
SJW GROUP	3.7	4.9	5.2				
THE YORK WATER COMPANY	0.3	0.8	1.1				
Median	2.0	3.7	2.7				
	2019	2018	2017		2019	2018	2017
Company Name	DEPRECIATION	DEPRECIATION	DEPRECIATION	TOTAL INTERST EXPENSE	TOTAL INTERST EXPENSE	TOTAL INTERST EXPENSE	
AMERICAN STATES WATER COMPANY	35.713	40.663	39.273	24.586	23.433	22.582	
AMERICAN WATER WORKS COMPANY, INC.	582.000	545.000	492.000	386.000	361.000	356.000	
ARTESIAN RESOURCES CORPORATION	10.803	10.288	9.555	7.024	6.252	6.177	
CALIFORNIA WATER SERVICE GROUP	91.288	85.707	78.592	44.891	39.917	36.288	
ESSENTIAL UTILITIES, INC.	156.476	146.673	136.724	149.125	158.833	88.543	
MIDDLESEX WATER COMPANY	17.232	15.780	14.846	7.264	6.758	5.506	
SJW GROUP	68.489	56.907	50.501	31.796	24.332	22.929	
THE YORK WATER COMPANY	7.688	7.010	6.769	5.124	5.509	5.348	
	2019	2018	2017	2019	2018	2017	
	INCOME TO PREF+COMM	INCOME TO PREF+COMM	INCOME TO PREF+COMM	REPAY LT DEBT	REPAY LT DEBT	REPAY LT DEBT	
AMERICAN STATES WATER COMPANY	84.342	63.871	69.367	40.325	0.326	31.329	
AMERICAN WATER WORKS COMPANY, INC.	621.000	567.000	426.000	495.000	526.000	896.000	
ARTESIAN RESOURCES CORPORATION	14.925	14.278	13.983	1.725	1.344	1.218	
CALIFORNIA WATER SERVICE GROUP	63.116	65.584	72.940	405.568	16.532	26.829	
ESSENTIAL UTILITIES, INC.	224.543	191.988	239.738	1,073.708	914.125	359.068	
MIDDLESEX WATER COMPANY	33.888	32.452	22.809	7.343	7.024	6.159	
SJW GROUP	23.403	38.767	59.204	1.400	0.000	2.717	
THE YORK WATER COMPANY	14.402	13.376	12.974	85.906	25.691	17.533	

Company Name	Pretax Operating Income			Interest expense			Net Income		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	133.598	105.321	130.923	24.586	23.433	22.582	84.342	63.871	69.367
AMERICAN WATER WORKS CO INC	1,219.000	1,150.000	1,268.000	386.000	361.000	356.000	621.000	567.000	426.000
ARTESIAN RESOURCES -CL A	27.130	25.521	27.455	7.024	6.252	6.177	14.925	14.278	13.983
CALIFORNIA WATER SERVICE GP	125.678	121.373	146.055	44.891	39.917	36.288	63.116	65.584	72.940
ESSENTIAL UTILITIES, INC.	360.651	337.152	345.195	149.125	158.833	88.543	224.543	191.988	239.738
MIDDLESEX WATER CO	38.012	40.134	39.415	7.264	6.758	5.506	33.888	32.452	22.809
SIW GROUP	63.653	73.364	117.526	31.796	24.332	22.929	23.403	38.767	59.204
YORK WATER CO	21.766	21.376	22.865	5.124	5.509	5.348	14.402	13.376	12.974

Company Name	Gross Cash Flow			Total debt			CAPX		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	126.678	98.761	120.792	499.928	416.907	380.363	151.940	126.561	113.126
AMERICAN WATER WORKS CO INC	1,398.000	1,294.000	1,372.000	9,557.000	8,625.000	7,728.000	1,654.000	1,586.000	1,434.000
ARTESIAN RESOURCES -CL A	21.079	24.763	31.428	153.846	133.646	116.845	40.677	49.053	41.094
CALIFORNIA WATER SERVICE GP	168.402	165.097	185.996	998.102	880.038	806.813	273.770	271.707	259.194
ESSENTIAL UTILITIES, INC.	354.411	310.688	375.031	3,097.913	2,627.187	2,146.801	550.273	495.737	478.089
MIDDLESEX WATER CO	46.410	45.909	44.897	263.687	208.694	173.910	89.125	72.094	50.301
SIW GROUP	86.320	83.332	106.462	1,423.078	531.424	456.092	164.325	135.973	141.213
YORK WATER CO	22.365	20.215	21.363	103.282	96.173	93.338	20.537	16.882	25.074

Company Name	Pretax Interest Coverage			Posttax Interest Coverage			GCF Interest Coverage		
	2019	2018	2017	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	5.4	4.5	5.8	4.4	3.7	4.1	6.2	5.2	6.3
AMERICAN WATER WORKS CO INC	3.2	3.2	3.6	2.6	2.6	2.2	4.6	4.6	4.9
ARTESIAN RESOURCES -CL A	3.9	4.1	4.4	3.1	3.3	3.3	4.0	5.0	6.1
CALIFORNIA WATER SERVICE GP	2.8	3.0	4.0	2.4	2.6	3.0	4.8	5.1	6.1
ESSENTIAL UTILITIES, INC.	2.4	2.1	3.9	2.5	2.2	3.7	3.4	3.0	5.2
MIDDLESEX WATER CO	5.2	5.9	7.2	5.7	5.8	5.1	7.4	7.8	9.2
SIW GROUP	2.0	3.0	5.1	1.7	2.6	3.6	3.7	4.4	5.6
YORK WATER CO	4.2	3.9	4.3	3.8	3.4	3.4	5.4	4.7	5.0
Median	3.6	3.6	4.4	2.9	3.0	3.5	4.7	4.9	5.9

Company Name	GCF To Debt			GCF To CAPX		
	2019	2018	2017	2019	2018	2017
AMERICAN STATES WATER CO	25.3	23.7	31.8	83.4	78.0	106.8
AMERICAN WATER WORKS CO INC	14.6	15.0	17.8	84.5	81.6	95.7
ARTESIAN RESOURCES -CL A	13.7	18.5	26.9	51.8	50.5	76.5
CALIFORNIA WATER SERVICE GP	16.9	18.8	23.1	61.5	60.8	71.8
ESSENTIAL UTILITIES, INC.	11.4	11.8	17.5	64.4	62.7	78.4
MIDDLESEX WATER CO	17.6	22.0	25.8	52.1	63.7	89.3
SIW GROUP	6.1	15.7	23.3	52.5	61.3	75.4
YORK WATER CO	21.7	21.0	22.9	108.9	119.7	85.2
Median	15.8	18.7	23.2	63.0	63.2	81.8

	2019	2018	2017
Pre-Tax Interest Coverage - Including AFC(3)(x)	3.6	3.6	4.4
Post-Tax Interest Coverage - Including AFC(3)(x)	2.9	3.0	3.5
GCF / Interest Coverage(4)(x)	4.7	4.9	5.9
GCF / Tot. Debt(7)(%)	15.8	18.7	23.2
GCF / Construction(6)(%)	63.0	63.2	81.8

Bulletin No. 191

1912 to January 1, 2020

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



Trends of Construction Costs

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 Industry data for
 Broadcast and wireless
 communications
 equipment mfg, not
 seasonally adjusted
 Industry: Broadcast
 and wireless
 communications
 equipment mfg
 Product: Broadcast
 and wireless
 communications
 equipment mfg
 Base Date: 199112

0	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #		
	2	8	9	16	23	34	38	39	40	42			
1966	1966	1966	1966	0	56	78	64	46	75 na	60	101	61	
1967	1967	1967	1967	0	61	81	67	47	76 na	63	101	64	
1968	1968	1968	1968	0	64	81	69	49	77 na	66	101	68	
1969	1969	1969	1969	0	69	84	73	53	80 na	72	106	72	
1970	1970	1970	1970	0	75	89	79	75	84 na	79	108	80	
1971	1971	1971	1971	0	84	93	89	82	94 na	89	108	90	
1972	1972	1972	1972	0	92	96	96	85	98 na	96	106	96	
1973	1973	1973	1973	0	100	100	100	100	100 na	100	100	100	
1974	1974	1974	1974	0	117	122	118	140	110	25	115	93	123
1975	1975	1975	1975	0	127	155	134	159	146	100	123	93	143
1976	1976	1976	1976	0	130	174	144	171	154	104	130	98	157
1977	1977	1977	1977	0	137	184	152	172	162	108	139	101	167
1978	1978	1978	1978	0	148	192	162	173	173	113	145	105	182
1979	1979	1979	1979	0	163	205	175	178	185	122	160	108	194
1980	1980	1980	1980	0	181	222	191	191	202	132	175	122	207
1981	1981	1981	1981	189	191	245	208	208	219	138	184	127	222
1982	1982	1982	1982	0	198	260	227	210	231	137	198	128	245
1983	1983	1983	1983	0	206	271	242	182	239	151	207	141	264
1984	1984	1984	1984	0	218	277	251	184	244	149	215	148	270
1985	1985	1985	1985	0	225	282	262	181	254	151	221	135	285
1986	1986	1986	1986	0	233	284	269	184	255	150	226	135	296
1987	1987	1987	1987	238	239	299	276	196	263	160	230	137	307
1988	1988	1988	1988	0	251	311	286	220	280	197	245	140	320
1989	1989	1989	1989	0	265	330	301	216	295	217	258	150	343
1990	1990	1990	1990	0	271	349	313	229	301	211	262	159	363
1991	1991	1991	1991	0	274	355	322	253	307	200	272	162	372
1992	1992	1992	1992	270	281	368	332	261	311	183	283	196	348
1993	1993	1993	1993	0	294	386	342	248	321	193	292	195	385
1994	1994	1994	1994	0	308	428	348	246	327	191	300	175	391
1995	1995	1995	1995	0	316	442	357	250	332	204	307	200	398
1996	1996	1996	1996	309	321	450	367	251	339	211	321	207	418
1997	1997	1997	1997	317	331	473	380	255	347	216	323	197	475
1998	1998	1998	1998	318	337	489	391	268	355	216	330	197	493
1999	1999	1999	1999	318	343	505	401	268	361	219	334	198	508
2000	2000	2000	2000	326	362	530	413	270	377	231	348	205	526
2001	2001	2001	2001	336	378	527	428	0	391	0	354	206	551
2002	2002	2002	2002	344	389	529	443	0	404	0	360	207	565
2003	2003	2003	2003	350	394	543	452	0	407	0	368	207	570
2004	2004	2004	2004	276	421	572	466	308	432	0	388	207	585
2005	2005	2005	2005	0	448	612	486	0	469	0	410	214	601
2006	2006	2006	2006	0	466	624	504	0	499	0	454	248	643
2007	2007	2007	2007	0	496	634	537	0	530	0	485	289	674
2008	2008	2008	2008	465	538	663	586	676	588	0	514	373	706
2009	2009	2009	2009	469	544	691	619	722	614	0	537	373	734
2010	2010	2010	2010	0	560	704	637	759	624	0	555	376	728
2011	2011	2011	2011	0	584	752	654	777	648	0	576	379	737
2012	2012	2012	2012	503	604	788	680	798	687	0	598	379	762
2013	2013	2013	2013	0	614	836	699	763	701	0	602	381	787
2014	2014	2014	2014	0	631	896	725	735	731	0	608	386	846
2015	2015	2015	2015	0	647	945	741	742	740	0	618	402	927
2016	2016	2016	2016	0	661	1017	761	769	755	0	624	403	974
2017	2017	2017	2017	0	675	1117	785	788	777	0	650	419	989
2018	2018	2018	2018	0	704	1210	813	818	803	0	668	436	1027
2019	2019	2019	2019	578	716	1332	847	833	830	405	688	447	1069
2020	2020	2020	2020	584	719	1374	871	836	847	417	706	459	1101
SPOT	SPOT	2020	2020	584	719	1374	871	836	847	417	706	459	1101

1991	100.000
1992	101.583
1993	102.908
1994	103.900
1995	103.517
1996	104.225
1997	105.758
1998	105.525
1999	104.125
2000	101.475
2001	101.717
2002	98.258
2003	95.100
2004	93.267
2005	92.617
2006	92.117
2007	92.483
2008	94.083
2009	94.558
2010	94.808
2011	94.408
2012	93.042
2013	92.400
2014	92.817
2015	93.358
2016	92.508
2017	90.367
2018	89.642
2019	89.767
2020	90.600
SPOT	90.600

 **xlsx**

**Industry
Data**

Series Id: PCU334220334220

Series Title: PPI industry data for Broadcast and wireless communications equipment mfg, not seasonally adjusted

Industry: Broadcast and wireless communications equipment mfg

Product: Broadcast and wireless communications equipment mfg

Base Date: 199112

Download:

 **xlsx**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1991												100
1992	100.9	101.3	101.6	101.5	101.5	101.5	101.3	101.5	101.7	101.9	102.1	102.2
1993	103.1	103.2	103.2	102.6	102.6	102.7	102.6	102.6	102.4	103.4	103.3	103.2
1994	103.4	103.6	104	104.1	104.1	104.1	104.1	104	104	103.9	103.7	103.8
1995	104	103.6	103.7	104.1	104	103.2	103.2	103.3	103.4	103.3	103.2	103.2
1996	104	103.9	104.1	104.2	104.1	104.1	103.9	104	104.1	104.3	105	105
1997	105.3	105.4	105.3	105.6	105.6	105.9	105.9	105.9	106.2	106.2	105.9	105.9
1998	106.2	106.4	106	105.3	105.2	105.2	105.5	105.3	105.3	105.3	105.3	105.3
1999	106	104.7	104.7	104.8	104.8	104.8	104.8	104.8	102.2	102.5	102.7	102.7
2000	103	102.1	101.7	101.8	101.1	101.2	101.2	101.2	101.1	101.1	101.1	101.1
2001	101.5	101.4	101.4	101.5	101.8	101.8	101.8	101.8	101.9	101.9	101.9	101.9
2002	101.6	100.3	100.4	98.8	98.7	98.4	96.6	96.9	97	97	97	96.4
2003	96.5	96.5	96.5	96.2	95.5	95.5	94.5	94.2	94.2	93.9	93.9	93.8
2004	93.4	93.4	93.5	93.5	93.7	93.8	93.5	93.2	92.8	92.7	92.9	92.8
2005	93	92.9	92.5	92.5	92.4	91.9	92.1	92.7	92.7	92.7	93	93
2006	92.7	92.2	91.7	91.7	91.7	91.9	91.9	92.3	92.4	92.3	92.3	92.3
2007	92.3	92.4	92.4	92.6	93.1	92.5	92.3	92.3	92.3	92.5	92.5	92.6
2008	93.1	93.6	93.4	93.6	94.2	94.2	94.5	94.5	94.2	94.3	94.7	94.7
2009	94.5	94.2	94.2	94.4	94.5	94.6	94.7	94.7	94.6	94.7	94.8	94.8
2010	94.8	94.8	94.7	94.5	94.5	94.4	95	95	94.9	94.9	95.1	95.1
2011	94.9	94.9	95	94.7	94.8	94.4	94.6	94.6	94.5	93.4	93.6	93.5
2012	93.7	93.7	93.7	93.6	93.7	93.7	93.6	93.4	91.9	91.7	91.9	91.9
2013	92.1	92.2	92.2	92.5	92.4	92.5	92.4	92.5	92.8	92.2	92.4	92.6
2014	92.6	92.7	92.7	92.7	92.7	92.8	92.8	92.7	93	93.1	92.9	93.1
2015	93.3	93.3	93.4	93.4	93.7	93.9	93.7	93.5	92.8	93.1	93.1	93.1
2016	92.9	93.2	93	93.1	93	92.6	92.5	92.7	92.7	91.7	92	90.7
2017	91.1	90.7	91	90.9	90.6	90.7	90.7	90.1	89.5	89.5	89.9	89.7
2018	89.7	90	89.6	89.6	89.6	89.6	89.7	89.9	89.5	89.5	89.5	89.5
2019	89.9	89.5	89.5	89.6	89.5	89.5	89.7	89.7	89.6	90.2	90.2	90.3
2020	90.9(P)	90.7(P)	90.6	90.6(P)								

P : Preliminary. All indexes are subject to revision four months after original publication.

90.6(P)

	BCWSA			ACSA			ALTOONA WATER AUTHORITY			CRWA		
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016
NET Property, plant and equipment	444,814,214	447,915,121	443,437,532	622,343,318	608,600,195	595,367,416	106,598,286	112,668,376	222,541,758	178,131,377	156,382,360	148,780,534
Operating Income	15,116,318	19,747,701	23,341,549	68,023,690	73,355,348	59,528,531	14,022,174	8,988,742	3,957,934	20,313,529	15,628,727	15,032,247
ROR/N PPE	3.40%	4.41%	5.26%	10.93%	12.05%	10.00%	13.15%	7.98%	1.78%	11.40%	9.99%	10.10%
3-Year Average	4.36%			10.99%			7.64%			10.50%		
Median of Each Year	4.90%											
Median of Each Entity	5.56%											
Conclusion		5.23%										

	CHESTER WATER AUTHORITY			ERIE CITY WATER AUTHORITY			LASA*			RAWA		
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016
NET Property, plant and equipment	277,881,505	271,133,389	264,773,275	191,070,499	187,981,855	182,608,316	142,318,075	141,219,375	119,707,705	64,973,550	59,036,648	55,262,527
Operating Income	1,487,430	2,795,223	3,768,846	10,005,109	11,356,179	8,967,322	6,085,112	5,520,628	5,139,694	2,945,874	5,516,028	5,293,197
ROR/N PPE	0.54%	1.03%	1.42%	5.24%	6.04%	4.91%	4.28%	3.91%	4.29%	4.53%	9.34%	9.58%
3-Year Average	1.00%			5.40%			4.16%			7.82%		

* Fiscal year 3/31

Median of Each Year

Median of Each Entity

Conclusion

	WCMA*			PITTSBURGH WATER & SEWER		
	2018	2017	2016	2018	2017	2016
NET Property, plant and equipment	554,245,152	510,067,669	472,496,629	757,480,000	689,807,000	676,798,000
Operating Income	27,079,696	21,532,860	20,596,637	61,660,000	29,604,000	32,134,000
ROR/N PPE	4.89%	4.22%	4.36%	8.14%	4.29%	4.75%
3-Year Average	4.49%			5.73%		
	*Fiscal Year 3/31					
Median of Each Year						
Median of Each Entity						
Conclusion						

**BUCKS COUNTY WATER AND SEWER AUTHORITY
 STATEMENTS OF NET POSITION
 DECEMBER 31, 2016 AND 2015**

<u>ASSETS</u>	<u>2016</u>	<u>2015</u>
Current Assets		
Cash and Cash Equivalents	\$ 5,089,665	\$ 5,731,089
Investments	24,374,913	17,814,990
Accounts Receivable, Net of Allowance for Doubtful Accounts	10,620,665	10,570,311
Unbilled Revenue	8,573,348	7,935,326
Prepaid Expenses	<u>789,370</u>	<u>260,954</u>
Total Current Assets	<u>49,447,961</u>	<u>42,312,670</u>
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,216,792	3,161,760
Investments	94,684,066	135,009,814
Interest Receivable	59,621	64,688
Total Restricted Assets	<u>97,960,479</u>	<u>138,236,262</u>
Capital Assets		
Land, Rights-of-Way and CIP	77,719,725	74,796,483
Other Capital Assets, Net of Accumulated Depreciation	<u>365,717,807</u>	<u>335,450,721</u>
Total Capital Assets, Net	<u>443,437,532</u>	<u>410,247,204</u>
Total Non-Current Assets	<u>541,398,011</u>	<u>548,483,466</u>
Total Assets	<u>590,845,972</u>	<u>590,796,136</u>
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	3,184,947	3,396,951
Pension: Difference between expected and Actual Experience	144,527	173,432
Pension: Difference between projected and actual earnings on investments	1,676,529	181,362
Pension: Contributions made subsequent to measurement date	<u>1,754,573</u>	<u>1,714,497</u>
Total Deferred Outflows of Resources	<u>6,760,576</u>	<u>5,466,242</u>
<u>LIABILITIES AND NET POSITION</u>		
Current Liabilities		
Accounts Payable and Accrued Expenses	5,516,076	4,231,827
Current Portion of Bonds Payable	19,765,000	17,535,000
Interest Payable	<u>1,031,332</u>	<u>1,073,303</u>
Total Current Liabilities	<u>26,312,408</u>	<u>22,840,130</u>
Non-Current Liabilities		
Customer and Developer Deposits	3,216,788	3,161,756
Bonds Payable, Net of Unamortized Bond Discount and Premium	293,958,458	315,287,483
Net Pension Liability	<u>6,800,663</u>	<u>5,114,435</u>
Total Non-Current Liabilities	<u>303,975,909</u>	<u>323,563,674</u>
Total Liabilities	<u>330,288,317</u>	<u>346,403,804</u>
Deferred Inflows of Resources		
Pension: Changes in Assumptions	64,329	-
Proceeds from sale of future revenues	<u>5,196,730</u>	<u>5,206,301</u>
Total Deferred Inflows of Resources	<u>5,261,059</u>	<u>5,206,301</u>
Net Position		
Net Investment in Capital Assets	163,868,064	171,371,418
Restricted for Capital Activity	24,324,428	20,752,536
Restricted for Debt Service	30,964,216	34,304,360
Unrestricted	<u>42,900,464</u>	<u>18,223,959</u>
Total Net Position	<u>\$ 262,057,172</u>	<u>\$ 244,652,273</u>

See accompanying notes to the financial statements.

**BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES,
AND CHANGES IN NET POSITION
YEARS ENDED DECEMBER 31, 2016 AND 2015**

	2016	2015
Operating Revenues		
Retail Sewer Service	\$ 43,421,110	\$ 40,074,901
Wholesale Sewer Service	14,897,563	15,357,443
Retail Water Service	11,916,548	8,704,536
Wholesale Water Service	12,191,561	11,633,096
Improvement and Tapping Fees	110,550	320,175
Other Revenues	4,481,483	4,144,208
Total Operating Revenues	87,018,815	80,234,359
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	16,253,379	13,646,982
Water Procurement	8,547,084	8,073,320
Total Sewage Treatment and Water Procurement	24,800,463	21,720,302
Plant Operations		
Payroll and Related Costs	1,755,388	1,633,434
Repairs and Maintenance	968,414	984,929
Electricity	470,001	386,706
Water and Sewage Testing	165,530	118,633
Total Plant Operations	3,359,333	3,123,702
Collection, Transmission and Distribution Service		
Payroll and Related Costs	8,220,765	8,072,542
Repairs and Maintenance	1,468,471	1,540,762
Electricity	874,124	995,081
Other Related Costs	178,188	257,882
Total Collection, Transmission and Distribution Service	10,741,548	10,866,267
Total Operating Expenses	38,901,344	35,710,271
General and Administrative Expenses		
Payroll and Related Costs	3,343,236	3,444,298
Professional Fees	1,133,397	1,573,043
Insurance	471,189	518,425
Bad Debt	-	-
Other	3,844,235	2,781,201
Total General and Administrative Expense	8,792,057	8,316,967
Total Expenses	47,693,401	44,027,238
Income From Operations Before Depreciation	39,325,414	36,207,121
Depreciation	(15,983,865)	(15,105,344)
Operating Income	23,341,549	21,101,777
Non-Operating Revenue (Expense)		
Interest Expense,		
Net of Amounts Capitalized	(10,941,064)	(10,312,121)
Investment Income	1,338,537	903,993
Other	3,012	-
Improvement and Tapping Fees	4,048,410	3,033,482
Amortization	(385,545)	(1,174,018)
Total Non-Operating Expense	(5,936,650)	(7,548,664)
Increase In Net Position, Before Contributed Capital	17,404,899	13,553,113
Contributed Capital	-	192,833
Increase in Net Position	17,404,899	13,745,946
Net Position - Beginning of Year	244,652,273	234,178,514
Cumulative Change	-	(3,272,187)
Net Position - Beginning of Year, Restated	244,652,273	230,906,327
Net Position - End of Year	\$ 262,057,172	\$ 244,652,273

See accompanying notes to the financial statements.

**BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017**

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2018 and 2017 segment information is as follows:

Assets	2018			Totals
	Sewer System	Water System	Administrative Account	
Current Assets				
Cash and Investments	\$ 13,996,611	\$ 9,258,718	\$ 1,343,631	\$ 24,598,960
Accounts Receivable and Unbilled Revenue	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	293,945,954	145,484,365	5,383,895	444,814,214
Total Assets	<u>362,192,175</u>	<u>185,168,408</u>	<u>4,141,806</u>	<u>551,502,389</u>
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
Changes in Assumptions	632,513	155,628	-	788,141
Difference Between Expected and Actual Experience	162,431	40,607	-	203,038
Contributions Made Subsequent to Measurement Date	6,428,229	1,607,056	-	8,035,285
Total Deferred Outflows of Resources	<u>10,726,542</u>	<u>8,265,853</u>	<u>-</u>	<u>18,992,395</u>
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	156,519,961	91,561,281	3,496,528	251,577,770
Total Liabilities	<u>180,660,511</u>	<u>94,934,773</u>	<u>4,141,806</u>	<u>279,737,090</u>
Deferred Inflows of Resources				
Changes in Assumptions	36,187	6,638	-	42,825
Difference Between Projected and Actual Earnings on Investments	2,478,081	619,520	-	3,097,601
Proceeds from the Sale of Future Revenues	-	4,140,496	-	4,140,496
Total Deferred Inflows of Resources	<u>2,514,268</u>	<u>4,766,654</u>	<u>-</u>	<u>7,280,922</u>
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	12,679,810	26,202,109	(5,875,828)	33,006,091
Total Net Position	<u>\$ 189,743,938</u>	<u>\$ 93,732,834</u>	<u>\$ -</u>	<u>\$ 283,476,772</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017			Totals
	Sewer System	Water System	Administrative Account	
Assets				
Current Assets				
Cash and Investments	\$ 8,904,986	\$ 11,194,811	\$ 1,393,738	\$ 21,493,535
Accounts Receivable & Unbilled Revenue	22,076,404	4,854,323	(6,223,024)	20,707,703
Other	576,394	79,590	-	655,984
Non-Current Assets				
Restricted Assets	48,012,438	22,338,930	3,907,802	74,259,170
Capital Assets	<u>294,731,969</u>	<u>147,991,214</u>	<u>5,191,938</u>	<u>447,915,121</u>
Total Assets	<u>374,302,191</u>	<u>186,458,868</u>	<u>4,270,454</u>	<u>565,031,513</u>
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	4,223,088	6,924,098	-	11,147,186
Changes in Assumptions	788,141	197,035	-	985,176
Difference Between Expected and Actual Experience	208,819	52,205	-	261,024
Difference Between Projected and Actual Earnings on Investments	680,277	170,069	-	850,346
Contributions Made Subsequent to Measurement Date	<u>1,562,388</u>	<u>390,597</u>	<u>-</u>	<u>1,952,985</u>
Total Deferred Outflows of Resources	<u>7,462,713</u>	<u>7,734,004</u>	<u>-</u>	<u>15,196,717</u>
Liabilities and Net Position				
Liabilities				
Current Liabilities	22,888,994	3,518,492	809,871	27,217,357
Non-Current Liabilities	<u>175,965,552</u>	<u>94,087,732</u>	<u>3,460,583</u>	<u>273,513,867</u>
Total Liabilities	<u>198,854,546</u>	<u>97,606,224</u>	<u>4,270,454</u>	<u>300,731,224</u>
Deferred Inflows of Resources				
Changes in Assumptions	42,826	10,706	-	53,532
Proceeds from the Sale of Future Revenues	<u>-</u>	<u>4,313,017</u>	<u>-</u>	<u>4,313,017</u>
Total Deferred Inflows of Resources	<u>42,826</u>	<u>4,323,723</u>	<u>-</u>	<u>4,366,549</u>
Net Position				
Net Investment in Capital Assets	128,626,008	55,498,881	5,191,931	189,316,820
Restricted for Capital Activity	6,277,232	16,463,309	447,206	23,187,747
Restricted for Debt Service	24,622,642	5,870,408	-	30,493,050
Unrestricted	<u>23,341,650</u>	<u>14,430,327</u>	<u>(5,639,137)</u>	<u>32,132,840</u>
Total Net Position	<u>\$ 182,867,532</u>	<u>\$ 92,262,925</u>	<u>\$ -</u>	<u>\$ 275,130,457</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018		
	Sewer System	Water System	Totals
Operating Revenues			
Retail Sewer Service	\$ 48,634,267	\$ -	\$ 48,634,267
Wholesale Sewer Service	19,105,200	-	19,105,200
Retail Water Service	-	11,755,194	11,755,194
Wholesale Water Service	-	4,357,235	4,357,235
Improvement and Tapping Fees	-	279,425	279,425
Other Revenues	3,130,165	1,567,388	4,697,553
Total Operating Revenues	<u>70,869,632</u>	<u>17,959,242</u>	<u>88,828,874</u>
Expenses			
Operating Expenses			
Sewage Treatment and Water Procurement			
Sewage Treatment	20,862,709	-	20,862,709
Water Procurement	-	5,611,587	5,611,587
Total Sewage and Water Procurement	<u>20,862,709</u>	<u>5,611,587</u>	<u>26,474,296</u>
Plant Operations			
Payroll and Related Costs	1,592,995	-	1,592,995
Repairs and Maintenance	1,251,844	-	1,251,844
Electricity	461,808	-	461,808
Water and Sewage Testing	218,091	-	218,091
Total Plant Operations	<u>3,524,738</u>	<u>-</u>	<u>3,524,738</u>
Collection, Transmission and Distribution Service			
Payroll and related costs	6,404,591	1,787,297	8,191,888
Repairs and maintenance	1,660,514	331,489	1,992,003
Electricity	822,812	172,379	995,191
Other related costs	209,224	89,235	298,459
Total Collection, Transmission and Distribution Service Expense	<u>9,097,141</u>	<u>2,380,400</u>	<u>11,477,541</u>
Total Operating Expense	<u>33,484,588</u>	<u>7,991,987</u>	<u>41,476,575</u>
General and Administrative Expenses			
Payroll and related costs	5,714,319	1,066,453	6,780,772
Professional fees	1,747,815	233,440	1,981,255
Insurance	395,522	81,075	476,597
Other	4,821,938	111,852	4,933,790
Total General and Administrative Expenses	<u>12,679,594</u>	<u>1,492,820</u>	<u>14,172,414</u>
Income from Operations before depreciation	24,705,450	8,474,435	33,179,885
Depreciation	<u>(14,696,296)</u>	<u>(3,367,271)</u>	<u>(18,063,567)</u>
Operating Income	<u>10,009,154</u>	<u>5,107,164</u>	<u>15,116,318</u>
Nonoperating Revenue (Expense)			
Interest Expense, net of Amounts Capitalized	(5,405,915)	(3,611,700)	(9,017,615)
Investment Income	1,623,182	392,571	2,015,753
Other	4,824	-	4,824
Improvement and Tapping Fees	2,750,737	-	2,750,737
Amortization	(51,377)	-	(51,377)
Total Nonoperating Expense	<u>(1,078,549)</u>	<u>(3,219,129)</u>	<u>(4,297,678)</u>
Increase in Net Position, Before Contributed Capital	<u>8,930,605</u>	<u>1,888,035</u>	<u>10,818,640</u>
Contributed Capital	<u>710,204</u>	<u>69,710</u>	<u>779,914</u>
Net Position - Beginning of Year, as Previously Reported	182,867,532	92,262,925	275,130,457
Adjustment for GASB No. 75	<u>(2,764,403)</u>	<u>(487,836)</u>	<u>(3,252,239)</u>
Net Position - Beginning of Year, Restated	<u>180,103,129</u>	<u>91,775,089</u>	<u>271,878,218</u>
Net Position, End of Year	<u>\$ 189,743,938</u>	<u>\$ 93,732,834</u>	<u>\$ 283,476,772</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017		
	Sewer System	Water System	Totals
Operating Revenues			
Retail Sewer Service	\$ 45,876,948	\$ -	\$ 45,876,948
Wholesale Sewer Service	15,432,198	-	15,432,198
Retail Water Service	-	11,949,872	11,949,872
Wholesale Water Service	-	6,647,724	6,647,724
Improvement & Tapping Fees	-	232,767	232,767
Other Revenues	3,249,727	1,629,253	4,878,980
Total Operating Revenues	<u>64,558,873</u>	<u>20,459,616</u>	<u>85,018,489</u>
Expenses			
Operating Expenses			
Sewage Treatment and Water Procurement			
Sewage Treatment	17,676,455	-	17,676,455
Water Procurement	-	6,530,098	6,530,098
Total Sewage and Water Procurement	<u>17,676,455</u>	<u>6,530,098</u>	<u>24,206,553</u>
Plant Operations			
Payroll and Related Costs	1,566,670	-	1,566,670
Repairs and Maintenance	958,914	-	958,914
Electricity	407,469	-	407,469
Water and Sewage Testing	219,714	-	219,714
Total Plant Operations	<u>3,152,767</u>	<u>-</u>	<u>3,152,767</u>
Collection, Transmission and Distribution Service			
Payroll and related costs	6,419,918	1,969,201	8,389,119
Repairs and maintenance	1,314,607	262,103	1,576,710
Electricity	672,888	158,476	831,364
Other related costs	105,932	65,769	171,701
Total Collection, Transmission and Distribution Service Expense	<u>8,513,345</u>	<u>2,455,549</u>	<u>10,968,894</u>
Total Operating Expense	<u>29,342,567</u>	<u>8,985,647</u>	<u>38,328,214</u>
General and Administrative Expenses			
Payroll and related costs	3,206,904	623,007	3,829,911
Professional fees	1,322,262	265,487	1,587,749
Insurance	353,433	90,023	443,456
Other	3,503,737	393,590	3,897,327
Total General and Administrative Expenses	<u>8,386,336</u>	<u>1,372,107</u>	<u>9,758,443</u>
Income from Operations before depreciation	26,829,970	10,101,862	36,931,832
Depreciation	<u>(13,769,257)</u>	<u>(3,414,874)</u>	<u>(17,184,131)</u>
Operating Income	<u>13,060,713</u>	<u>6,686,988</u>	<u>19,747,701</u>
Non-Operating Revenue (Expense)			
Interest Expense, net of Amounts Capitalized	(4,463,766)	(4,352,345)	(8,816,111)
Investment Income	1,224,604	435,695	1,660,299
Improvement and Tapping Fees	1,497,598	-	1,497,598
Amortization	(280,152)	(736,050)	(1,016,202)
Total Non-Operating Expense	<u>(2,021,716)</u>	<u>(4,652,700)</u>	<u>(6,674,416)</u>
Increase in Net Position	11,038,997	2,034,288	13,073,285
Net Position, Beginning of Year	<u>171,828,535</u>	<u>90,228,637</u>	<u>262,057,172</u>
Net Position, End of Year	<u>\$ 182,867,532</u>	<u>\$ 92,262,925</u>	<u>\$ 275,130,457</u>

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2018			Totals
	Sewer System	Water System	Administrative Account	
Cash Flows from Operating Activities				
Cash Received from Customers	\$ 72,660,789	\$ 17,539,631	\$ -	\$ 90,200,420
Payments to Suppliers	(31,373,585)	(6,551,971)	-	(37,925,556)
Payroll and Related Payments	(13,711,973)	(3,095,494)	-	(16,807,467)
Other Operating (Payments) / Transactions	12,644,098	(13,022,354)	222,511	(155,745)
Net Cash Provided from Operations	40,219,329	(5,130,188)	222,511	35,311,652
Cash Flows from Capital and Related Financing Activities				
Acquisition and Construction of Capital Assets	(12,799,197)	(860,416)	(191,958)	(13,851,571)
Improvement and Tapping Fees	2,750,737	-	-	2,750,737
Bond Principal Repayments	(17,784,999)	(2,475,000)	-	(20,259,999)
Interest Paid	(6,364,234)	(3,537,201)	-	(9,901,435)
Net Cash Used in Capital and Related Financing Activities	(34,197,693)	(6,872,617)	(191,958)	(41,262,268)
Cash Flows from Investing Activities				
Sale of Investments, Net	(5,599,131)	12,069,155	-	6,470,024
Interest Received	14,790	392,571	-	407,361
Net Cash Used in Investing Activities	(5,584,341)	12,461,726	-	6,877,385
Net Increase (Decrease) in Cash and Cash Equivalents	437,295	458,921	30,553	926,769
Cash and Cash Equivalents - Beginning of Year	1,529,900	33,485	4,854,334	6,417,719
Cash and Cash Equivalents - End of Year	\$ 1,967,195	\$ 492,406	\$ 4,884,887	\$ 7,344,488
Displayed as:				
Cash and Cash Equivalents	\$ 1,967,195	\$ 492,406	\$ 1,343,631	\$ 3,803,232
Restricted Cash and Cash Equivalents	-	-	3,541,256	3,541,256
	\$ 1,967,195	\$ 492,406	\$ 4,884,887	\$ 7,344,488
Reconciliation of Operating Income to Net Cash Provided from Operations:				
Operating Income	\$ 10,009,154	\$ 5,107,164	\$ -	\$ 15,116,318
Adjustments to Reconcile Operating Income to Net Cash Provided from Operating Activities				
Depreciation	14,696,296	3,367,271	-	18,063,567
Changes in Assets and Liabilities:				
Receivables and Unbilled Revenue, Net	3,276,483	(247,091)	-	3,029,392
Prepaid Expenses	(34,155)	(5,410)	-	(39,565)
Intercompany Receivables (Payables)	12,685,022	(13,036,180)	351,158	-
Accounts Payable and Accrued Expenses	531,336	(121,266)	(164,592)	245,478
Interest Payable	(37,555)	16,262	-	(21,293)
Customer and Developer Deposits	-	-	35,945	35,945
Net Pension and OPEB Liabilities and Related Pension Deferrals	(907,252)	(210,938)	-	(1,118,190)
Net Cash Provided from Operations	\$ 40,219,329	\$ (5,130,188)	\$ 222,511	\$ 35,311,652

BUCKS COUNTY WATER AND SEWER AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)
DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION (CONTINUED)

	2017			Totals
	Sewer System	Water System	Administrative Account	
Cash Flows from Operating Activities				
Cash Received from Customers	\$ 62,575,421	\$ 20,069,302	\$ -	\$ 82,644,723
Payments to Suppliers	(25,232,863)	(7,175,732)	457,880	(31,950,715)
Payroll and Related Payments	(11,445,049)	(2,595,164)	-	(14,040,213)
Other Operating (Payments) / Transactions	(253,988)	(1,470,351)	1,625,942	(98,397)
Net Cash Provided from Operations	25,643,521	8,828,055	2,083,822	36,555,398
Cash Flows from Capital and Related Financing Activities				
Acquisition and Construction of Capital Assets	(15,016,258)	(3,846,355)	(1,629,962)	(20,492,575)
Improvement and Tapping Fees	1,497,598	-	-	1,497,598
Bond Principal Repayments	(17,375,000)	(2,390,000)	-	(19,765,000)
Bond Issuance Proceeds	34,112,802	80,744,268	-	114,857,070
Transfer to Escrow Agent for Bond Defeasance	(35,441,434)	(97,773,208)	-	(133,214,642)
Interest Paid	(7,346,730)	(4,899,811)	-	(12,246,541)
Net Cash Used in Capital and Related Financing Activities	(39,569,022)	(28,165,106)	(1,629,962)	(69,364,090)
Cash Flows from Investing Activities				
Sale of Investments, Net	12,001,747	17,241,059	-	29,242,806
Interest Received	1,241,452	435,696	-	1,677,148
Net Cash Provided by Investing Activities	13,243,199	17,676,755	-	30,919,954
Net Increase (Decrease) in Cash and Cash Equivalents	(682,302)	(1,660,296)	453,860	(1,888,738)
Cash and Cash Equivalents - Beginning of Year	2,212,202	1,693,781	4,400,474	8,306,457
Cash and Cash Equivalents - End of Year	<u>\$ 1,529,900</u>	<u>\$ 33,485</u>	<u>\$ 4,854,334</u>	<u>\$ 6,417,719</u>
Displayed as:				
Cash and Cash Equivalents	\$ 1,529,900	\$ 33,485	\$ 1,393,738	\$ 2,957,123
Restricted Cash and Cash Equivalents	-	-	3,460,596	3,460,596
	<u>\$ 1,529,900</u>	<u>\$ 33,485</u>	<u>\$ 4,854,334</u>	<u>\$ 6,417,719</u>
Reconciliation of Operating Income to Net Cash Provided from Operations:				
Operating Income	\$ 13,060,713	\$ 6,686,988	\$ -	\$ 19,747,701
Adjustments to Reconcile Operating Income to Net Cash Provided from Operating Activities				
Depreciation	13,769,257	3,414,874	-	17,184,131
Changes in Assets and Liabilities:				
Receivables and Unbilled Revenue, Net	(2,092,088)	578,398	-	(1,513,690)
Prepaid Expenses	(31,647)	9,560	155,474	133,387
Intercompany Receivables (Payables)	77,451	(1,420,368)	1,342,917	-
Accounts Payable and Accrued Expenses	935,352	(293,880)	341,623	983,095
Interest Payable	(63,616)	(144,543)	-	(208,159)
Customer and Developer Deposits	-	-	243,808	243,808
Net Pension Liability and Related Pension Deferrals	(11,901)	(2,974)	-	(14,875)
Net Cash Provided from Operations	\$ 25,643,521	\$ 8,828,055	\$ 2,083,822	\$ 36,555,398

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2018 AND 2017

Assets and Deferred Outflows of Resources	2018	2017	Liabilities, Deferred Inflows of Resources, and Net Position	2018	2017
Assets:			Liabilities:		
Current assets:			Current liabilities:		
Cash and cash equivalents	\$ 142,482,220	\$ 119,248,255	Accounts payable	\$ 7,180,579	\$ 7,167,120
Accounts receivable:			Accrued liabilities:		
Billed sewer revenue	16,544,587	17,185,654	Compensated absences	4,539,483	4,689,828
Unbilled sewer revenue	41,408,016	40,232,780	Salaries and wages	1,529,529	1,441,024
Other	4,469	4,635	Accrued interest on bonds	2,745,875	2,260,535
Other current assets	6,556,274	6,432,263	Reserve for litigation	2,371,900	2,371,900
Total current assets	<u>206,995,566</u>	<u>183,103,587</u>	Pretreatment advance payments	24,375	71,600
			Current maturities of sewer revenue bonds	26,630,000	25,395,000
Restricted/designated assets:			Total current liabilities	<u>45,021,741</u>	<u>43,397,007</u>
Cash and cash equivalents	83,445,720	100,289,509	Long-term liabilities:		
Investments	167,782,528	-	Other post-employment benefits	13,297,158	6,199,726
Accrued interest receivable	622,842	-	Net pension liability	6,121,872	16,421,705
Total restricted/designated assets	<u>251,851,090</u>	<u>100,289,509</u>	Sewer revenue bonds - less current maturities	677,935,000	547,335,000
Prepaid bond costs	7,187,959	6,472,479	Unamortized bond premium	55,857,500	48,952,220
Nondepreciable capital assets:			Net long-term debt	733,792,500	596,287,220
Land	5,344,896	5,344,896	Total long-term liabilities	<u>753,211,530</u>	<u>618,908,651</u>
Construction in progress	59,836,813	38,371,565	Total Liabilities	<u>798,233,271</u>	<u>662,305,658</u>
Total nondepreciable capital assets	65,181,709	43,716,461	Deferred Inflows of Resources:		
Depreciable capital assets -			Related to pensions	12,389,471	2,935,957
at cost, net of accumulated depreciation	557,161,609	564,883,734			
Total	<u>622,343,318</u>	<u>608,600,195</u>			
Net pension asset	2,705,577	-			
Total Assets	<u>1,091,083,510</u>	<u>898,465,770</u>	Net Position:		
Deferred Outflows of Resources:			Net investment in capital assets	120,849,236	95,281,689
Related to pensions	17,633,917	21,247,515	Unrestricted	185,255,671	167,264,184
Other post-retirement benefits	932,894	-	Total Net Position	<u>306,104,907</u>	<u>262,545,873</u>
Refunding adjustment	7,077,328	8,074,203	Total Liabilities, Deferred Inflows of		
Total Deferred Outflows of Resources	<u>25,644,139</u>	<u>29,321,718</u>	Resources, and Net Position	<u>\$ 1,116,727,649</u>	<u>\$ 927,787,488</u>
Total Assets and Deferred Outflows of Resources	<u>\$ 1,116,727,649</u>	<u>\$ 927,787,488</u>			

The notes to financial statements are an integral part of this statement.

EXHIBIT 20
Page 227 of 273

Appendix A-5.2 (Gannett Fleming)
ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues	\$ 169,724,327	\$ 170,182,173
Operating Expenses:		
Treatment	47,633,280	44,821,531
Intercepting sewer systems	8,490,808	7,100,846
Upper Allegheny system	563,244	487,512
Administrative and engineering	14,736,160	13,772,696
Billing and collecting	3,482,212	4,439,250
Management information systems	3,723,344	3,778,272
Total operating expenses before depreciation	78,629,048	74,400,107
Operating Income Before Depreciation	91,095,279	95,782,066
Depreciation	23,071,589	22,426,718
Operating Income	68,023,690	73,355,348
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	3,127,451	1,096,517
Interest expense on bonds, net of amounts capitalized	(20,735,872)	(21,544,440)
Amortization of prepaid bond costs	(629,995)	(693,501)
Change in value of pension related items	(61,702)	(3,196,667)
Change in value of OPEB related items	(789,172)	-
Total non-operating revenues (expenses)	(19,089,290)	(24,338,091)
Change in Net Position	48,934,400	49,017,257
Net Position:		
Beginning of year, as restated for 2018	257,170,507	213,528,616
End of year	\$ 306,104,907	\$ 262,545,873

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF NET POSITION

DECEMBER 31, 2017 AND 2016

Assets and Deferred Outflows of Resources	2017	2016	Liabilities, Deferred Inflows of Resources, and Net Position	2017	2016
Assets:			Liabilities:		
Current assets:			Current liabilities:		
Cash and cash equivalents	\$ 119,248,255	\$ 91,684,772	Accounts payable	\$ 7,167,120	\$ 8,192,941
Accounts receivable:			Accrued liabilities:		
Billed sewer revenue	17,185,654	14,582,462	Compensated absences	4,689,828	4,543,017
Unbilled sewer revenue	40,232,780	35,405,033	Salaries and wages	1,441,024	1,315,045
Other	4,635	40,361	Accrued interest on bonds	2,260,535	2,007,614
Other current assets	6,432,263	6,129,723	Reserve for litigation	2,371,900	2,371,900
Total current assets	183,103,587	147,842,351	Pretreatment advance payments	71,600	53,300
			Current maturities of sewer revenue bonds	25,395,000	24,205,000
Restricted/designated assets:			Total current liabilities	43,397,007	42,688,817
Cash and cash equivalents	100,289,509	92,275,291	Long-term liabilities:		
Investments	-	31,442,508	Other post-employment benefits	6,199,726	5,173,881
Accrued interest receivable	-	156,762	Net pension liability	16,421,705	10,265,284
Total restricted/designated assets	100,289,509	123,874,561	Sewer revenue bonds - less current maturities	547,335,000	572,730,000
Prepaid bond costs	6,472,479	7,165,980	Unamortized bond premium	48,952,220	54,514,841
Nondepreciable capital assets:			Net long-term debt	596,287,220	627,244,841
Land	5,344,896	5,344,896	Total long-term liabilities	618,908,651	642,684,006
Construction in progress	38,371,565	30,816,357	Total Liabilities	662,305,658	685,372,823
Total nondepreciable capital assets	43,716,461	36,161,253	Deferred Inflows of Resources:		
Depreciable capital assets -			Related to pensions	2,935,957	4,102,436
at cost, net of accumulated depreciation	564,883,734	559,206,163	Net Position:		
Total	608,600,195	595,367,416	Net investment in capital assets	95,281,689	77,051,463
Capital fees receivable	-	40,000	Unrestricted	167,264,184	136,477,153
Total Assets	898,465,770	874,290,308	Total Net Position	262,545,873	213,528,616
Deferred Outflows of Resources:			Total Liabilities, Deferred Inflows of Resources, and Net Position	\$ 927,787,488	\$ 903,003,875
Related to pensions	21,247,515	19,454,240			
Refunding adjustment	8,074,203	9,259,327			
Total Deferred Outflows of Resources	29,321,718	28,713,567			
Total Assets and Deferred Outflows of Resources	\$ 927,787,488	\$ 903,003,875			

The notes to financial statements are an integral part of this statement.

EXHIBIT 20
Page 229 of 273

Appendix A-5.2 (Gannett Fleming)
ALLEGHENY COUNTY SANITARY AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Operating Revenues	\$ 170,182,173	\$ 151,390,618
Operating Expenses:		
Treatment	44,821,531	44,955,562
Intercepting sewer systems	7,100,846	5,896,400
Upper Allegheny system	487,512	451,733
Administrative and engineering	13,772,696	12,366,247
Billing and collecting	4,439,250	3,348,876
Management information systems	3,778,272	3,571,943
Total operating expenses before depreciation	74,400,107	70,590,761
Operating Income Before Depreciation	95,782,066	80,799,857
Depreciation	22,426,718	21,271,326
Operating Income	73,355,348	59,528,531
Non-operating Revenues (Expenses):		
Interest income, net of amounts capitalized	1,096,517	310,794
Interest expense on bonds, net of amounts capitalized	(21,544,440)	(23,172,637)
Amortization of prepaid bond costs	(693,501)	(1,306,549)
Change in value of pension related items	(3,196,667)	(123,155)
Total non-operating revenues (expenses)	(24,338,091)	(24,291,547)
Change in Net Position	49,017,257	35,236,984
Net Position:		
Beginning of year	213,528,616	178,291,632
End of year	\$ 262,545,873	\$ 213,528,616

The notes to financial statements are an integral part of this statement.

EXHIBIT 20
Page 230 of 273

Appendix A-5.2 (Gannett Fleming)
CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2016

Assets and Deferred Outflows of Resources

Assets:

Current assets:

Cash and cash equivalents	\$ 31,370,479
Accounts receivable, net of allowance for uncollectible accounts of \$4,798,347	8,391,183
Due from the City of Harrisburg	2,995,798
Prepaid expenses	291,184
Inventory	489,164
	<hr/>
Total current assets	43,537,808

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	4,723,331
Investments - restricted under trust indentures	37,547,376
	<hr/>
Total restricted assets	42,270,707

Noncurrent assets:

Capital assets, not being depreciated	12,360,288
Capital assets, net of accumulated depreciation of \$118,292,680	136,420,246
	<hr/>
Total noncurrent assets	148,780,534

Total Assets

234,589,049

Deferred Outflows of Resources:

Deferred loss on refunding	8,778,954
Deferred outflows of resources for pensions	757,778
	<hr/>
Total Deferred Outflows of Resources	9,536,732

**Total Assets and Deferred Outflows
of Resources**

\$244,125,781

CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION YEAR ENDED DECEMBER 31, 2016

Operating Revenues:	
User charges	\$ 38,184,824
Total operating revenues	38,184,824
Operating Expenses:	
Operating	13,802,610
Administrative	5,051,155
Depreciation	4,298,812
Total operating expenses	23,152,577
Operating Income	15,032,247
Non-Operating Revenues (Expenses):	
Investment income	2,192,129
Intergovernmental revenue	16,177
Gain on sale of easements	4,671,738
Miscellaneous expense	(240,506)
Interest expense	(7,713,386)
Total non-operating revenues (expenses)	(1,073,848)
Change in Net Position Before Special Item	13,958,399
Special item	92,933
Change in Net Position	14,051,332
Net Position:	
Beginning of year	35,564,284
End of year	\$ 49,615,616

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER**BALANCE SHEET**

DECEMBER 31, 2017

Assets and Deferred Outflows of Resources**Assets:****Current assets:**

Cash and cash equivalents	\$ 39,042,983
Accounts receivable, net of allowance for uncollectible accounts of \$5,381,652	10,642,831
Due from the City of Harrisburg	2,999,854
Prepaid expenses	330,564
Inventory	475,789
	<hr/>
Total current assets	53,492,021

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	28,128,910
Investments - restricted under trust indentures	19,919,838
	<hr/>
Total restricted assets	48,048,748

Noncurrent assets:

Capital assets, not being depreciated	6,640,532
Capital assets, net of accumulated depreciation of \$123,593,986	149,741,828
	<hr/>
Total noncurrent assets	156,382,360

Total Assets**257,923,129****Deferred Outflows of Resources:**

Deferred loss on refunding	7,666,840
Deferred outflows of resources for pensions	1,087,971
	<hr/>
Total Deferred Outflows of Resources	8,754,811

**Total Assets and Deferred Outflows
of Resources****\$ 266,677,940**

CAPITAL REGION WATER

BALANCE SHEET

DECEMBER 31, 2018

Assets and Deferred Outflows of Resources

Assets:

Current assets:

Cash and cash equivalents	\$ 48,169,716
Accounts receivable, net of allowance for uncollectible accounts of \$5,914,774	10,001,747
Grants receivable	905,431
Due from the City of Harrisburg	3,686,285
Prepaid expenses	403,089
Inventory	347,960
	<hr/>
Total current assets	63,514,228

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	19,430,292
Investments - restricted under trust indentures	19,433,058
	<hr/>
Total restricted assets	38,863,350

Noncurrent assets:

Capital assets, not being depreciated	16,946,141
Capital assets, net of accumulated depreciation of \$128,988,007	160,175,578
Net pension asset	1,009,658
	<hr/>
Total noncurrent assets	178,131,377

Total Assets	<hr/> <hr/> 280,508,955
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Deferred Outflows of Resources:

Deferred loss on refunding	7,877,263
Deferred outflows of resources for other postemployment benefits	77,533
Deferred outflows of resources for pension	651,522
	<hr/>
Total Deferred Outflows of Resources	8,606,318

Total Assets and Deferred Outflows of Resources	<hr/> <hr/> \$ 289,115,273
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CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND
 CHANGES IN NET POSITION

YEAR ENDED DECEMBER 31, 2017

Operating Revenues:	
User charges	\$ 40,503,481
Total operating revenues	<u>40,503,481</u>
Operating Expenses:	
Operating	14,206,161
Administrative	5,367,287
Depreciation	<u>5,301,306</u>
Total operating expenses	<u>24,874,754</u>
Operating Income	<u>15,628,727</u>
Non-Operating Revenues (Expenses):	
Investment income	682,914
Intergovernmental revenue	471,421
Miscellaneous expense	(135,908)
Interest expense	<u>(7,450,743)</u>
Total non-operating revenues (expenses)	<u>(6,432,316)</u>
Change in Net Position	9,196,411
Net Position:	
Beginning of year - restated	<u>47,619,135</u>
End of year	<u><u>\$ 56,815,546</u></u>

The accompanying notes are an integral part of these financial statements.

CAPITAL REGION WATER

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION YEAR ENDED DECEMBER 31, 2018

Operating Revenues:	
User charges	\$ 44,895,271
Total operating revenues	44,895,271
Operating Expenses:	
Operating	13,894,496
Administrative	5,293,225
Depreciation	5,394,021
Total operating expenses	24,581,742
Operating Income	20,313,529
Non-Operating Revenues (Expenses):	
Investment income	568,004
Grant revenue	1,502,468
Gain on sale of easements	4,838,927
Miscellaneous expense	(180,383)
Interest expense	(6,812,458)
Total non-operating revenues (expenses)	(83,442)
Change in Net Position	20,230,087
Net Position:	
Beginning of year - restated	55,942,804
End of year	\$ 76,172,891

The accompanying notes are an integral part of these financial statements.

ALTOONA WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION

Appendix A-5.2 (Gannett Fleming) EXHIBIT 20
Page 236 of 273

	<u>December 31,</u>	
	<u>2017</u>	<u>2016</u>
ASSETS		
Current Assets		
Cash	\$ 1,187,229	\$ 2,426,395
Investments	3,009,242	3,590,996
Accounts Receivable	3,728,307	3,890,186
Accrued Interest Receivable	15,956	-
Prepaid Expenses	476,123	301,183
Total Current Assets	<u>8,416,857</u>	<u>10,208,760</u>
Restricted Assets		
Capital Projects	243,872	1,220,873
Debt Service	1,152,851	1,053,440
Debt Service Reserve	2,036,583	2,132,427
Surplus Fund	1,081,611	364,266
Total Restricted Assets	<u>4,514,917</u>	<u>4,771,006</u>
Right to Use Asset		
Right to Use Asset Net	<u>112,668,376</u>	--
Capital Assets		
Total Plant and Properties	--	348,811,369
Less: Accumulated Depreciation	--	(126,289,611)
Net Plant and Properties	--	<u>222,541,758</u>
TOTAL ASSETS	<u>125,600,150</u>	<u>237,521,524</u>
DEFERRED OUTFLOWS OF RESOURCES		
Outflow Related to Pension	<u>1,526,330</u>	<u>792,553</u>
LIABILITIES		
Current Liabilities		
Accounts Payable	1,211,479	1,353,287
Accrued Expenses	353,388	382,098
Accrued Payroll and Taxes	236,925	234,996
Deposits and Credits	99,009	98,909
Current Portion of City Lease Obligation	29,982	-
Current Portion of Notes Payable	2,682,406	1,862,721
Current Portion of Bonds Payable	<u>6,010,000</u>	<u>5,725,000</u>
Total Current Liabilities	<u>10,623,189</u>	<u>9,657,011</u>
Long Term Liabilities		
City Lease Obligation	113,242,714	--
Loans Payable - PennVest	38,640,937	41,937,165
Bonds Payable	31,728,617	37,372,825
Net Pension Liability	2,570,058	2,101,758
Unearned Interest - Series of 1994	<u>105,310</u>	<u>157,966</u>
Total Long Term Liabilities	<u>186,287,636</u>	<u>81,569,714</u>
TOTAL LIABILITIES	<u>196,910,825</u>	<u>91,226,725</u>
DEFERRED INFLOWS OF RESOURCES		
Inflow Related to Pension	<u>829,998</u>	<u>192,683</u>
NET POSITION		
Invested in Capital Assets Net of Related Debt	-	138,861,752
Restricted for:		
Construction	222,881	499,882
Debt Service	1,045,329	1,053,419
Unrestricted	<u>(71,882,553)</u>	<u>6,479,616</u>
TOTAL NET POSITION	<u>\$ (70,614,343)</u>	<u>\$ 146,894,669</u>

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
STATEMENTS OF

Appendix A-5.2 (Gannett Fleming)

EXHIBIT 20
Page 237 of 273

	<u>December 31,</u>	
	<u>2018</u>	<u>2017</u>
ASSETS		
<u>Current Assets</u>		
Cash	\$ 2,420,679	\$ 1,187,229
Investments	4,484,450	3,009,242
Accounts Receivable	4,460,455	3,728,307
Accrued Interest Receivable	29,077	15,956
Prepaid Expenses	<u>307,825</u>	<u>476,123</u>
Total Current Assets	<u>11,702,486</u>	<u>8,416,857</u>
<u>Restricted Assets</u>		
Capital Projects	247,194	243,872
Debt Service	1,041,048	1,152,851
Debt Service Reserve	2,067,009	2,036,583
Surplus Fund	<u>1,097,730</u>	<u>1,081,611</u>
Total Restricted Assets	<u>4,452,981</u>	<u>4,514,917</u>
<u>Right to Use Asset</u>		
Right to Use Asset Net	<u>106,598,286</u>	<u>112,868,376</u>
TOTAL ASSETS	<u>122,753,753</u>	<u>125,600,150</u>
<u>DEFERRED OUTFLOWS OF RESOURCES</u>		
Outflow Related to Pension	<u>2,359,034</u>	<u>1,526,330</u>
LIABILITIES		
<u>Current Liabilities</u>		
Accounts Payable	1,079,814	1,211,479
Accrued Expenses	352,761	353,388
Accrued Payroll and Taxes	274,897	236,925
Deposits and Credits	92,183	99,009
Demand Note	1,464,081	--
Current Portion of City Lease Obligation	1,114,720	29,982
Current Portion of Notes Payable	2,974,950	2,682,406
Current Portion of Bonds Payable	<u>6,305,000</u>	<u>6,010,000</u>
Total Current Liabilities	<u>13,658,206</u>	<u>10,623,189</u>
<u>Long Term Liabilities</u>		
City Lease Obligation	112,127,994	113,242,714
Loans Payable – PennVest	35,892,461	38,640,937
Bonds Payable	25,798,581	31,728,617
Net Pension Liability	4,271,068	2,570,058
Unearned Interest - Series of 1994	<u>52,855</u>	<u>105,310</u>
Total Long Term Liabilities	<u>178,142,739</u>	<u>186,287,636</u>
TOTAL LIABILITIES	<u>191,800,945</u>	<u>196,910,825</u>
<u>DEFERRED INFLOWS OF RESOURCES</u>		
Inflow Related to Pension	<u>642,998</u>	<u>829,998</u>
NET POSITION		
Restricted for:		
Construction	228,203	222,881
Debt Service	1,040,814	1,045,329
Unrestricted	<u>(68,598,173)</u>	<u>(71,882,553)</u>
TOTAL NET POSITION	<u>\$(67,331,156)</u>	<u>\$(70,614,343)</u>

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended	
	December 31,	
	2017	2016
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 28,033,026	\$ 27,234,701
Installations and Renewals Service Lines	119,509	116,080
Meter Sales, Shut-Offs, and Remotes	224,910	224,676
Timber Sales	40,197	142,007
Septic Hauler Fees	75,649	81,269
Fire Hydrant and Line Rentals	343,767	331,999
Service to Wastewater Division	1,057,455	1,097,406
Miscellaneous	322,114	414,937
Intermunicipal Service Reimbursements	1,409,183	1,346,227
Total Operating Revenues	31,625,810	30,989,302
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,117,738	5,106,472
Billing and Collection	709,035	750,662
Purification and Distribution/Disposal	5,001,575	5,078,445
Meter Division	482,163	476,819
Maintenance	3,823,793	3,918,953
Fringe Benefits and Insurance	3,706,216	3,838,891
Depreciation and Amortization	6,796,548	7,861,126
Total Operating Expenses- Functional and Departmental	22,637,068	27,031,368
Operating Income	8,988,742	3,957,934
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(223,701,014)	--
Investment Income	80,223	50,052
Interest Expense	(2,813,892)	(2,983,688)
Fees and Miscellaneous	(379)	(839)
Gain on Disposition of Fixed Assets	45,961	34,612
Contributed Capital	16,825	--
Amortization Bond Issue Costs	(125,478)	(126,251)
Total Nonoperating Revenues and (Expenses)	(226,497,754)	(3,026,114)
Net Income	(217,509,012)	931,820
<u>Net Position - January 1</u>	146,894,669	145,962,849
<u>Net Position - December 31</u>	\$ (70,614,343)	\$ 146,894,669

See Accompanying Notes to Financial Statements

Appendix A-5.2 (Gannett Fleming)
ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31,	
	2018	2017
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 30,794,341	\$ 28,033,026
Installations and Renewals Service Lines	139,503	119,509
Meter Sales, Shut-Offs, and Remotes	250,565	224,910
Timber Sales	116,337	40,197
Septic Hauler Fees	2,269,905	75,649
Fire Hydrant and Line Rentals	341,023	343,767
Service to Wastewater Division	1,047,022	1,057,455
Miscellaneous	421,392	322,114
Intermunicipal Service Reimbursements	1,231,099	1,409,183
Total Operating Revenues	36,611,187	31,625,810
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,180,781	2,117,738
Billing and Collection	681,880	709,035
Purification and Distribution/Disposal	5,060,425	5,001,575
Meter Division	505,784	482,163
Maintenance	3,956,167	3,823,793
Fringe Benefits and Insurance	4,133,886	3,706,216
Depreciation and Amortization	6,070,090	6,796,548
Total Operating Expenses- Functional and Departmental	22,589,013	22,637,068
Operating Income	14,022,174	8,988,742
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(4,277,135)	(223,701,014)
Investment Income	170,111	80,223
Interest Expense	(6,783,092)	(2,813,892)
Fees and Miscellaneous	--	(379)
Gain on Disposition of Fixed Assets	105,075	45,961
Contributed Capital	201,042	16,825
Amortization Bond Issue Costs	(154,988)	(125,478)
Total Nonoperating Revenues and (Expenses)	(10,738,987)	(226,497,754)
Net Income/(Loss)	3,283,187	(217,509,012)
<u>Net Position - January 1</u>	(70,614,343)	146,894,669
<u>Net Position - December 31</u>	\$(67,331,156)	\$(70,614,343)

See Accompanying Notes to Financial Statements

Management's Discussion and Analysis
December 31, 2018 and 2017

Financial Information

Net Position - The following schedule presents a summary of net position comparison at December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Assets			
Unrestricted current assets	\$ 25,886,197	\$ 24,371,571	\$ 20,614,911
Restricted current assets	9,389,010	11,067,725	19,177,004
Capital assets, net	64,973,550	59,036,648	55,262,527
Other asset	951,810	1,020,000	1,020,000
Deferred Outflow of Resources	<u>1,054,979</u>	<u>1,197,798</u>	<u>1,346,286</u>
Total Assets and Deferred Outflow of Resources	<u>\$ 102,255,546</u>	<u>\$ 96,693,742</u>	<u>\$ 97,420,788</u>
Liabilities			
Current liabilities	\$ 7,496,258	\$ 5,387,837	\$ 5,985,559
Long-term debt	<u>80,796,512</u>	<u>84,017,089</u>	<u>87,200,895</u>
Total Liabilities	<u>\$ 88,292,770</u>	<u>\$ 89,404,926</u>	<u>\$ 93,186,454</u>
Net Position			
Net investment in capital assets	\$ (18,130,096)	\$ (27,177,795)	\$ (22,222,481)
Restricted for debt service	7,513,275	7,426,839	7,409,503
Unrestricted	<u>24,579,597</u>	<u>27,039,772</u>	<u>19,047,312</u>
Total Net Position	<u>\$ 13,962,776</u>	<u>\$ 7,288,816</u>	<u>\$ 4,234,334</u>

Current liabilities increased by 39.1% in 2018 compared to a decrease by 10.0% in 2017 and an increase by 20.7% in 2016. The 2018 increase is attributable to increases in capital accounts payable.

Revenues - The following schedule presents a summary of revenues for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
Operating Revenues			
Water billings	\$ 29,663,185	\$ 29,736,140	\$ 29,622,297
Interest and penalty charges	541,209	472,340	586,502
Tampered meter and other charges	310,720	449,933	591,344
Tapping and connection fees	50,610	177,175	86,244
Abandonment fees	<u>20,107</u>	<u>60,907</u>	<u>32,001</u>
Total Operating Revenues	<u>\$ 30,585,831</u>	<u>\$ 30,896,495</u>	<u>\$ 30,918,388</u>

The 2018 fiscal year's total operating revenue decreased by 1.0% compared to 2017, and decreased by 0.1% and increased by 11.7% in 2017 and 2016, respectively.

Management's Discussion and Analysis
December 31, 2018 and 2017

Financial Information (continued)

Expenses - The following schedule presents a summary of expenses for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Operating Expenses			
Lease payments, City of Reading	\$ 11,640,032	\$ 11,426,339	\$ 11,441,419
Chemical supplies	1,051,101	746,486	1,197,002
Meter reading	-	-	539,483
Salaries, payroll taxes, and employee benefits	6,213,345	5,877,245	5,529,809
Contracted services	967,302	849,520	1,089,676
Other	<u>3,895,738</u>	<u>3,176,042</u>	<u>2,881,120</u>
Total Operating Expenses	<u>\$ 23,767,518</u>	<u>\$ 22,075,632</u>	<u>\$ 22,678,509</u>

The \$1,691,886 increase in expenses is primarily the result of the increase in chemical supplies, salaries, payroll taxes and employee benefits, and bad debt expense.

Changes in Net Position - The following schedule presents a summary of changes in net position for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Operating revenues	\$ 30,585,831	\$ 30,896,495	\$ 30,918,388
Operating expenses	<u>23,767,518</u>	<u>22,075,632</u>	<u>22,678,509</u>
Operating Income before Depreciation	6,818,313	8,820,863	8,239,879
Depreciation and amortization	<u>3,872,439</u>	<u>3,304,835</u>	<u>2,946,682</u>
Operating Income	2,945,874	5,516,028	5,293,197
Nonoperating revenues (expenses), net	<u>3,728,086</u>	<u>(2,461,546)</u>	<u>(3,468,433)</u>
Increase in Net Position	<u>\$ 6,673,960</u>	<u>\$ 3,054,482</u>	<u>\$ 1,824,764</u>

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2017 and 2016

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2017, 2016, and 2015 as restated. The change in net position increased from \$ 3.7 million in fiscal year 2016 to \$ 4.6 million in fiscal year 2017. Operating income increased \$ 1.1 million over last year while non-operating revenue (expense) increased \$ 1.1 million over fiscal year 2016.

	2017	2016	2015
Operating revenue	\$ 20,849,832	\$ 19,713,716	\$ 17,642,797
Operating expenses	15,710,138	14,557,000	12,620,147
Operating income	5,139,694	5,156,716	5,022,650
Non-operating revenue (expenses)	(908,165)	(1,983,244)	(741,293)
Income before capital contribution	4,231,529	3,173,472	4,281,357
Capital contribution	324,142	551,477	638,017
Change in net position	4,555,671	3,724,949	4,919,374
Net position, beginning of year	76,825,172	73,100,223	68,180,849
Net position, end of year	\$ 81,380,843	\$ 76,825,172	\$ 73,100,223

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2017 Operating Revenue and Operating Expenses, respectively.

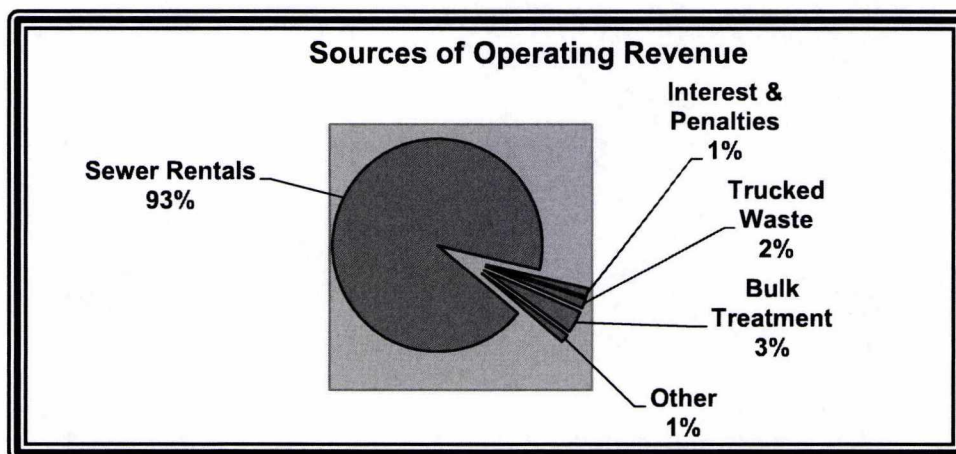


Table 3 - Sources of Operating Revenue - Fiscal Year 2017

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2018 and 2017

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2018, 2017, and 2016. The change in net position increased from \$ 4.6 million in fiscal year 2017 to \$ 9.0 million in fiscal year 2018. Operating income increased \$ 381,000 over last year while non-operating revenue (expense) increased \$ 3.2 million over fiscal year 2017.

	2018	2017	2016
Operating revenue	\$ 21,499,186	\$ 20,849,832	\$ 19,713,716
Operating expenses	15,978,558	15,710,138	14,557,000
Operating income	<u>5,520,628</u>	5,139,694	5,156,716
Non-operating revenue (expenses)	<u>2,251,417</u>	(908,165)	(1,983,244)
Income before capital contribution	7,772,045	4,231,529	3,173,472
Capital contribution	<u>1,224,093</u>	324,142	551,477
Change in net position	8,996,138	4,555,671	3,724,949
Net position, beginning of year	<u>81,380,843</u>	<u>76,825,172</u>	<u>73,100,223</u>
Net position, end of year	<u>\$ 90,376,981</u>	<u>\$ 81,380,843</u>	<u>\$ 76,825,172</u>

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2018 Operating Revenue and Operating Expenses, respectively.

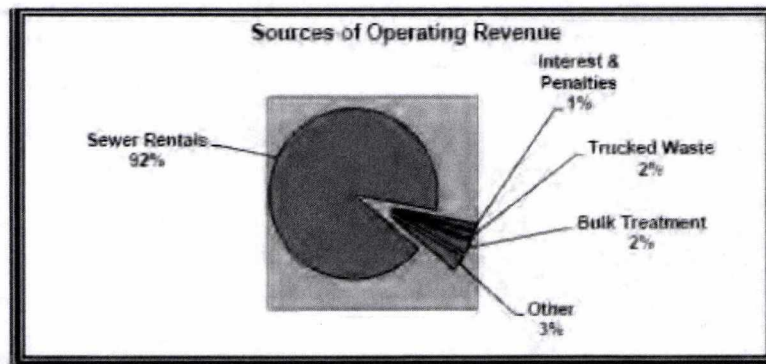


Table 3 - Sources of Operating Revenue - Fiscal Year 2018

**LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis**

Financial Analysis (Continued)

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2019, 2018, and 2017. The change in net position decreased from \$ 9.0 million in fiscal year 2018 to \$ 6.1 million in fiscal year 2019. Operating income increased \$ 564,000 over last year while non-operating revenue (expense) decreased \$ 3.1 million over fiscal year 2018.

	2019	2018	2017
Operating revenue	\$ 22,974,614	\$ 21,499,186	\$ 20,849,882
Operating expenses	16,889,502	15,978,558	15,710,138
Operating income	6,085,112	5,520,628	5,139,694
Non-operating revenue (expenses)	(825,158)	2,251,417	(900,165)
Income before capital contribution	5,259,954	7,772,045	4,231,529
Capital contribution	840,017	1,224,093	324,142
Change in net position	6,099,971	8,996,138	4,555,671
Net position, beginning of year	90,376,981	81,380,843	76,825,172
Net position, end of year	<u>\$ 96,476,952</u>	<u>\$ 90,376,981</u>	<u>\$ 81,380,843</u>

Table 2 - Condensed Statement of Revenues, Expenses, and Changes in Net Position

Table 3 and Table 4 below show a breakdown of fiscal year 2019 Operating Revenue and Operating Expenses, respectively.

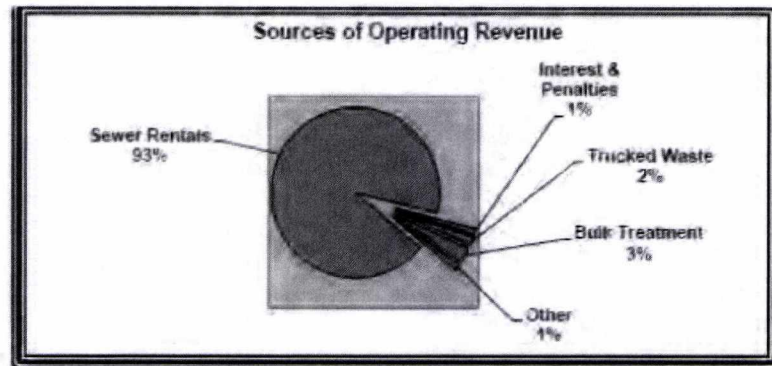


Table 3 - Sources of Operating Revenue - Fiscal Year 2019

**LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2017 and 2016**

Revenue

In fiscal year 2017, revenue exceeded budgeted revenue by 1.0% resulting from additional investment income earned from higher than expected rates of return and below projection draws on construction funds.

Expenses

Expenses, excluding depreciation, were 1.3% under budget. Interest expenses were below budget as 24% of paid interest expenses were capitalized as project costs. This was offset by above-budget expenditures in Administrative and Treatment Plant expenses. Higher than budgeted employee health care costs of \$ 113,000 in the self-funded health insurance plan and amortization of pension liability of \$ 52,000 generated above-budget Administrative expenses. Treatment plant expenses for nutrient credit purchases to remain in compliance with the Authority's discharge permit were over-budget by \$ 131,000 and expenses for sludge disposal were over-budget by \$ 63,000 to cover disposal costs during an extended repair of the centrifuge. Above-budget expense for depreciation account for 48.5% of the negative budget variance in operating expenses. Prior period adjustments to correct the posting of capitalized interest increased the asset value of constructed assets leading to above-budget depreciation costs.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2017 were \$ 119.7 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2017, 2016, and 2015 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2017	2016	2015
Construction in progress	\$ 24,247,571	\$ 8,328,405	\$ 6,383,634
Land	95,181	95,181	36,257
Sewer System			
Lines	99,909,426	99,088,012	89,292,400
Pump stations	33,042,528	32,887,101	32,787,258
Treatment plant	38,039,056	37,266,392	37,189,692
Buildings and improvements	3,640,150	3,199,420	3,199,420
Technology	1,353,402	1,295,369	1,295,369
Vehicles	1,760,826	1,706,256	1,699,097
Equipment	830,745	830,745	830,745
	<u>202,918,885</u>	<u>184,696,881</u>	<u>172,713,872</u>
Total accumulated depreciation	<u>(83,211,180)</u>	<u>(78,843,305)</u>	<u>(74,748,106)</u>
Total Capital Assets	<u>\$ 119,707,705</u>	<u>\$ 105,853,576</u>	<u>\$ 97,965,766</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2017, 2016, and 2015**

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
March 31, 2018 and 2017

Revenue

In fiscal year 2018, revenue exceeded budgeted revenue by 7.2% resulting from capacity reservation and tapping fee income exceeding budget, which offset below-budget investment and other income.

Expenses

Expenses, excluding depreciation, were 5.3% over budget. Interest expense was below budget as 52% of paid interest expense was capitalized as project costs. This was offset by above-budget expenditures in Administrative and Treatment Plant expenses. Higher than budgeted legal expenses of \$ 31,000 and amortization of pension liability of \$ 58,000 generated above-budget Administrative expenses. Treatment plant expenses for nutrient credit purchases to remain in compliance with the Authority's discharge permit were over-budget by \$ 62,000 and expenses for sludge disposal were over-budget by \$ 91,000. Above-budget expense for depreciation of \$ 573,000 accounts for 71.2% of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2018 were \$ 141.2 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2018, 2017, and 2016 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2018	2017	2016
Construction in progress	\$ 41,124,606	\$ 24,247,571	\$ 8,328,405
Land	95,181	95,181	95,181
Sewer System			
Lines	102,594,800	99,909,426	99,080,012
Pump stations	38,845,592	33,042,528	32,887,101
Treatment plant	38,193,779	38,039,056	37,266,392
Buildings and improvements	3,640,150	3,640,150	3,199,420
Technology	1,424,091	1,353,402	1,295,369
Vehicles	2,291,170	1,760,826	1,706,256
Equipment	830,745	830,745	830,745
	<u>229,040,114</u>	<u>202,918,885</u>	<u>184,696,881</u>
Total accumulated depreciation	<u>(87,820,739)</u>	<u>(83,211,180)</u>	<u>(78,843,305)</u>
Total Capital Assets	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>	<u>\$ 105,853,576</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2018, 2017, and 2016**

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis

Budgetary Highlights (Continued)

Revenue

In fiscal year 2019, actual revenue exceeded budgeted revenue by \$ 820,000 resulting from sewer rental, investment, and other income exceeding budget. These were partially offset by below-budget revenue in capacity reservation and tapping fee income.

Expenses

Expenses, excluding depreciation, were \$ 1.5 million over budget. Above average rainfall generated a 40% increase in flow through the collection system and treatment plant for the year. Consequently, electricity and chemical costs, sewer treatment costs from the City of Lancaster and the Borough of Columbia, and nutrient credit purchase costs were \$ 1.4 million over budget. When combined with extensive rehabilitation of the centrifuge at the treatment plant, the operating expenses, excluding depreciation, exceeded budget by \$ 1.5 million. Above-budget expense for depreciation of \$ 308,000 accounts for the balance of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2019 were \$ 142.3 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2019, 2018, and 2017 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2019	2018	2017
Construction in progress	\$ 37,011,554	\$ 41,124,606	\$ 24,247,571
Land	95,181	95,181	95,181
Sewer System			
Lines	110,392,727	102,594,800	99,909,426
Pump stations	40,897,235	38,845,592	33,042,528
Treatment plant	38,262,279	38,193,779	38,039,056
Buildings and improvements	3,640,150	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,353,402
Vehicles	2,295,745	2,291,170	1,760,826
Equipment	977,181	830,745	830,745
	<u>234,996,143</u>	<u>229,040,114</u>	<u>202,918,885</u>
Total accumulated depreciation	<u>(92,678,068)</u>	<u>(67,820,739)</u>	<u>(83,211,180)</u>
Total Capital Assets	<u>\$ 142,318,075</u>	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2019, 2018, and 2017**

Appendix A-5.2 (Gannett Fleming)
MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position
March 31, 2019 and 2018

	2019	Restated 2018
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 27,812,712	\$ 19,209,356
Accounts receivable, customers (net of allowance for doubtful accounts of \$473,827 in 2019 and \$470,533 in 2018)	6,547,940	6,298,373
Unbilled water and sewer service	9,852,958	9,851,714
Surcharges receivable, current portion	350,000	350,000
Other receivables	498,933	1,070,190
Inventory - material and supplies	2,868,304	2,515,551
Prepaid expenses	352,547	200,121
Total Current Assets	48,283,394	39,495,305
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	767,648,700	711,563,565
Less: accumulated depreciation	(213,403,548)	(201,495,896)
Property, Plant and Equipment, Net	554,245,152	510,067,669
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2019 and 2018	1,509,942	1,653,673
Prepaid bond insurance	913,328	958,845
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	207,837,151	234,717,525
Restricted cash held by the Authority (Note 6)	16,415,126	19,597,310
Total Non-Current Assets	226,675,547	256,927,353
Total Assets	829,204,093	806,490,327
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	30,552	-
Changes in assumptions related to pensions	57,541	77,283
Difference between expected and actual experience related to pensions	602,541	825,024
Contribution to pension plan subsequent to measurement date	150,548	56,041
Difference between expected and actual experience related to OPEB	24,517	-
Changes in assumptions related to OPEB	1,501,026	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,283,283	4,612,214
Total Deferred Outflows of Resources	6,650,008	5,570,562

(continued)

See accompanying notes to the financial statements.

Appendix A-5.2 (Gannett Fleming)
MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position
March 31, 2018 and 2017

	2018	2017
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 19,209,356	\$ 15,067,865
Accounts receivable, customers (net of allowance for doubtful accounts of \$470,533 in 2018 and \$458,506 in 2017)	6,298,373	5,597,012
Unbilled water and sewer service	9,851,714	9,777,602
Surcharges receivable, current portion	350,000	350,000
Other receivables	1,070,190	5,178,590
Inventory - material and supplies	2,515,551	2,289,998
Prepaid expenses	200,121	129,312
Total Current Assets	39,495,305	38,390,379
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	711,563,565	662,320,792
Less: accumulated depreciation	(201,495,896)	(189,824,163)
Property, Plant and Equipment, net	510,067,669	472,496,629
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2018 and 2017	1,653,673	1,959,138
Prepaid bond insurance	958,845	596,655
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	234,717,525	254,963,842
Restricted cash held by authority (Note 6)	19,597,310	19,003,328
Total Non-Current Assets	256,927,353	276,522,963
Total Assets	806,490,327	787,409,971
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	-	170,728
Changes in assumptions related to pensions	77,283	-
Difference between expected and actual experience related to pensions	825,024	104,074
Contribution to pension plan subsequent to measurement date	56,041	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,612,214	1,205,212
Total Deferred Outflows of Resources	5,570,562	1,480,014

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2018 and 2017

	<u>2018</u>	<u>2017</u>
Operating Revenues		
Water	\$ 81,638,410	\$ 77,440,502
Wastewater	14,901,786	14,121,562
Other operating revenues	<u>3,527,303</u>	<u>2,858,021</u>
Total Operating Revenues	100,067,499	94,420,085
Operating Expenses		
Source of supply	865,364	861,886
Treatment system	8,002,831	8,006,826
Distribution	17,775,014	17,459,687
Engineering	1,307,465	1,271,392
Wastewater system	8,509,813	7,632,386
Landfill	43,367	12,005
Depreciation and amortization	12,577,264	11,562,121
Commercial and general	28,228,521	25,817,145
Management fee	<u>1,225,000</u>	<u>1,200,000</u>
Total Operating Expenses	<u>78,534,639</u>	<u>73,823,448</u>
Operating Income Before Non-Operating Revenues	21,532,860	20,596,637
Non-Operating Revenues (Expenses)		
Investment income	3,535,070	3,225,914
Net increase (decrease) in the fair value of investments	(407,750)	431,964
Interest expense	(15,262,836)	(15,032,096)
Loss on disposals of property	<u>(336,175)</u>	<u>(1,732,987)</u>
Total Non-Operating Expenses	(12,471,691)	(13,107,205)
Income Before Capital Contributions	9,061,169	7,489,432
Capital Contributions	<u>13,400,327</u>	<u>13,432,729</u>
Increase in Net Position	22,461,496	20,922,161
Total Net Position, Beginning of Year	<u>135,957,658</u>	<u>115,035,497</u>
Total Net Position, End of Year	<u>\$ 158,419,154</u>	<u>\$ 135,957,658</u>

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2019 and 2018

	<u>2019</u>	<u>Restated 2018</u>
Operating Revenues		
Water	\$ 86,597,707	\$ 81,638,410
Wastewater	15,286,438	14,901,786
Other operating revenues	<u>5,450,849</u>	<u>3,527,303</u>
Total Operating Revenues	107,334,994	100,067,499
Operating Expenses		
Source of supply	935,776	865,364
Treatment system	8,810,618	8,002,831
Distribution	18,735,370	17,775,014
Engineering	1,530,906	1,307,465
Wastewater system	8,444,588	8,509,813
Landfill	4,765	43,367
Depreciation and amortization	13,433,385	12,577,264
Commercial and general	27,059,890	28,228,521
Management fee	<u>1,300,000</u>	<u>1,225,000</u>
Total Operating Expenses	<u>80,255,298</u>	<u>78,534,639</u>
Operating Income Before Non-Operating Revenues	27,079,696	21,532,860
Non-Operating Revenues (Expenses)		
Investment income	4,943,913	3,535,070
Net increase (decrease) in the fair value of investments	20,450	(407,750)
Interest expense	(20,975,541)	(15,262,836)
Loss on disposals of property	<u>(403,367)</u>	<u>(336,175)</u>
Total Non-Operating Expenses	(16,414,545)	(12,471,691)
Income Before Capital Contributions	10,665,151	9,061,169
Capital Contributions	<u>6,523,749</u>	<u>13,400,327</u>
Increase in Net Position	17,188,900	22,461,496
Total Net Position, Beginning of Fiscal Year	127,988,860	135,957,658
Prior Period Adjustment, see Note 19	<u>-</u>	<u>(30,430,294)</u>
Total Net Position, End of Fiscal Year	<u>\$ 145,177,760</u>	<u>\$ 127,988,860</u>

See accompanying notes to the financial statements.

Erie City Water Authority
(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

December 31, 2018 and 2017

to \$285.50 million. Total liabilities and inflows increased \$36.14 million [11.88%] to \$340.36 million. The primary reasons for the increase are discussed in the following *Changes in Net Position* section.

Restricted investments of \$32.39 million increased \$21.03 million [285.19%], primarily from \$27 million of new capital project funds from the 2018 bond issue.

Capital assets (net of depreciation) increased \$3.09 million. Gross capital assets (before depreciation) increased \$11.47 million representing capital additions in accordance with the Authority's adopted capital project program.

**ERIE CITY WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION**

	As of December 31,			
	2018	2017	\$ Change	% Change
ASSETS				
Current assets	\$ 17,026,267	\$ 13,116,705	\$ 3,909,562	29.8%
Restricted investments	32,386,195	11,356,255	21,029,940	185.2%
Capital assets, net of accumulated depreciation	191,070,499	187,981,855	3,088,644	1.6%
Other non-current assets	10,481,961	10,665,706	(183,745)	1.7%
Deferred outflows of resources	34,530,203	30,999,314	3,530,889	11.4%
Total Assets and Deferred Outflows	\$ 285,495,125	\$ 254,119,835	\$ 31,375,290	12.3%
As of December 31,				
	2018	2017	\$ Change	% Change
LIABILITIES AND NET ASSETS				
Current liabilities	\$ 8,766,073	\$ 7,893,978	\$ 872,095	29.8%
Long-term debt, net of unaccreted discounts	310,547,787	284,395,079	26,152,708	9.2%
Other non-current liabilities	21,044,412	11,930,218	(9,114,194)	76.4%
Deferred inflow of resources	-	1,113,991	(1,113,991)	-
Total liabilities and deferred outflow of resources	340,358,272	305,333,266	35,025,006	11.5%
Net position –				
Invested in capital assets, net of related debt	11,468,894	7,320,870	4,148,024	56.7%
Restricted for capital projects, debt service	9,849,537	7,691,083	2,158,454	28.1%
Unrestricted	(76,181,578)	(66,225,384)	(9,956,194)	15.0%
Total net position	(54,863,147)	(51,213,431)	(3,649,716)	7.1%
Total liabilities and net position	\$ 285,495,125	\$ 254,119,835	(\$ 31,375,290)	12.3%

Changes in Net Position –

The Authority's net position decreased by <\$3.65> million in 2018, compared to a <\$.84> million decrease in 2017. The 2018 decrease in the net position resulted from several factors – \$1.84 million increase in pension costs, \$1.1 million increase in interest expense and \$1.03 million of bond issue costs.

Total operating revenues for the year ended December 31, 2018 of \$39.8 million increased \$1.3 million [3.3%] compared to December 31, 2017.

Total operating expenses of \$21.4 million increased \$2.48 million [13.1%]. The majority of the

Erie City Water Authority
(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

December 31, 2017 and 2016

**ERIE CITY WATER AUTHORITY
STATEMENTS OF FINANCIAL POSITION**

As of December 31,				
	2017	2016	\$ Change	% Change
ASSETS				
Current assets	\$ 13,116,705	\$ 13,797,317	(\$ 680,612)	(4.9%)
Restricted investments	11,356,255	20,831,757	(9,475,502)	(45.5%)
Capital assets, net of accumulated depreciation	187,981,855	182,608,316	5,373,539	2.9%
Other non-current assets	10,665,706	11,274,848	(609,142)	(5.4%)
Deferred outflows of resources	30,999,314	34,010,414	(3,011,100)	(8.9%)
Total Assets and Deferred Outflows	\$ 254,119,835	\$ 262,522,652	(\$ 8,402,817)	(3.2%)
As of December 31,				
	2017	2016	\$ Change	% Change
LIABILITIES AND NET ASSETS				
Current liabilities	\$ 7,893,978	\$ 7,918,630	(\$ 24,652)	(4.9%)
Long-term debt, net of unaccrued discounts	284,395,079	289,960,220	(5,565,141)	(1.9%)
Other non-current liabilities	11,930,218	15,019,944	(3,089,726)	20.6%
Deferred inflow of resources	1,113,991	-	1,113,991	-
Total liabilities and deferred outflow of resources	305,333,266	312,898,794	(7,565,528)	2.4%
Net position –				
Invested in capital assets, net of related debt	7,320,870	7,270,325	50,545	0.7%
Restricted for capital projects, debt service	7,691,083	13,216,103	5,525,020	41.8%
Unrestricted	(66,225,384)	(70,862,570)	(4,637,186)	(6.5%)
Total net position	(51,213,431)	(50,376,142)	(837,289)	(1.7%)
Total liabilities and net position	\$ 254,119,835	\$ 262,522,652	(\$ 8,402,817)	(3.2%)

Changes in Net Position –

The Authority's net position decreased by \$.84 million in 2017, compared to a \$1.92 million in 2016. The 2017 increase in the net position deficit of \$.85 million resulted from several factors – \$2.6 million increase in net operating revenue - \$19.6 million in 2017 versus \$17.0 million in 2016 and a \$.4 million increase in interest expense - \$13.2 million in 2017 versus \$12.7 million in 2016.

Total operating revenues for the year ended December 31, 2017 of \$38.5 million increased \$1.8 million (4.9%) compared to December 31, 2016.

Total operating expenses of \$18.9 million decreased \$.77 million (3.9%). The majority of the 2017 decrease in operating expenses was attributable to lower repair costs on water mains.

Total 2017 expenses of \$40.3 million increased \$.15 million (.04%) compared to 2016.

Erie City Water Authority
(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

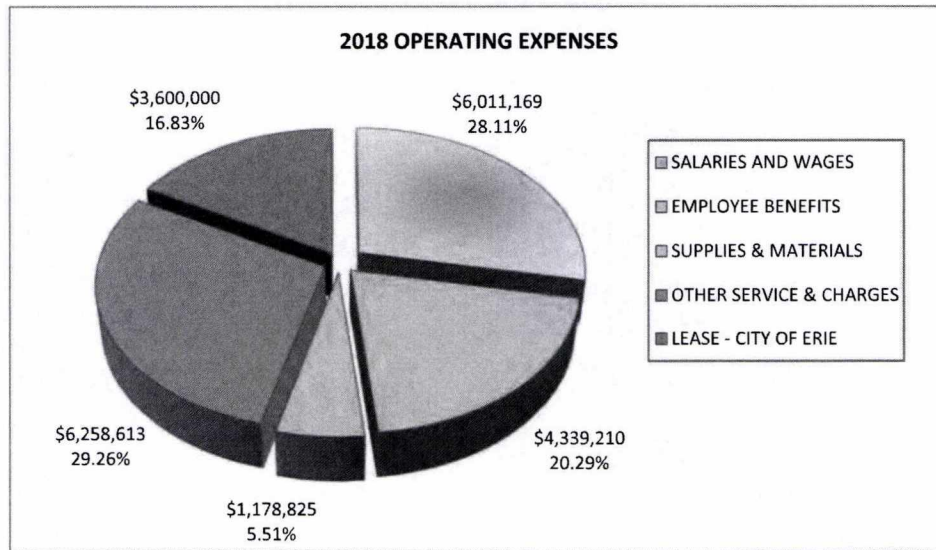
December 31, 2018 and 2017

2018 decrease in operating expenses was attributable to higher pension costs and contracted services.

Total 2018 expenses of \$44.0 million \$40.3 million increased \$3.7 million [9.18%] compared to 2017.

**ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**

	For the year ended December 31,			
	2018	2017	\$ Change	% Change
Operations -				
Operating revenues	\$ 39,770,149	\$ 38,483,311	\$ 1,286,838	3.3%
Operating expenses	(21,387,817)	(18,912,253)	2,475,564	13.1%
Depreciation	(8,377,223)	(8,214,879)	162,344	(2.0%)
Operating income	10,005,109	11,356,179	1,351,070	(11.9%)
Non-operating revenue (expense)				
Interest expense	(14,236,358)	(13,165,069)	1,071,289	8.1%
Other revenues	1,948,092	1,326,328	621,764	46.9%
Other expenses	(1,446,534)	(354,727)	1,091,807	307.8%
	(13,734,800)	(12,193,468)	1,541,332	12.6%
Net loss before capital contributions	(3,729,691)	(837,289)	(2,892,402)	(345.4%)
Capital asset contributions	79,975		79,975	-
Change in net position	(\$ 3,649,716)	(\$ 837,289)	(\$ 2,812,427)	(335.9%)



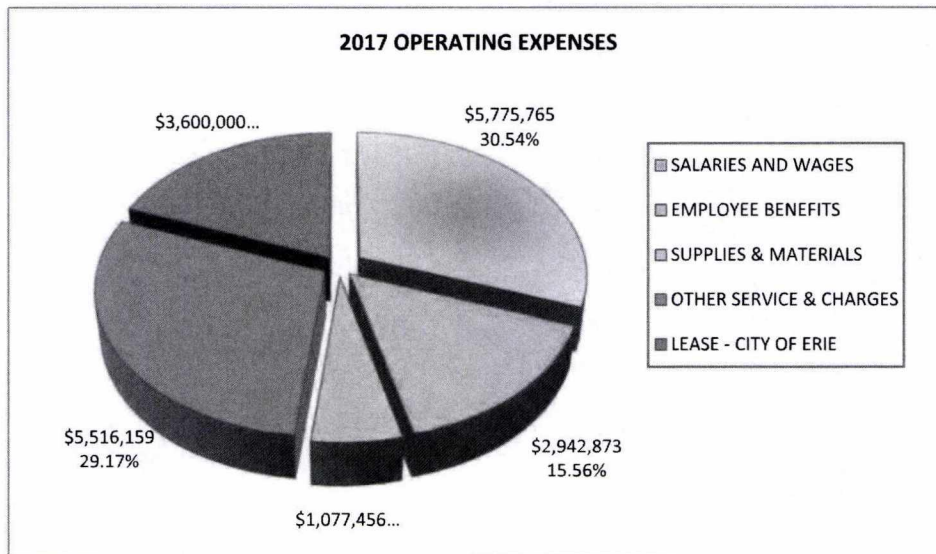
Erie City Water Authority
(aka Erie Water Works)

MANAGEMENT DISCUSSION AND ANALYSIS (Unaudited)

December 31, 2017 and 2016

**ERIE CITY WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION**

	For the year ended December 31,			
	2017	2016	\$ Change	% Change
Operations -				
Operating revenues	\$ 38,483,311	\$ 36,687,234	\$ 1,796,077	4.9%
Operating expenses	(18,912,253)	(19,686,218)	773,965	3.9%
Depreciation	(8,214,879)	(8,033,694)	(181,185)	(2.3%)
Operating income	11,356,179	8,967,322	(2,388,857)	(26.6%)
Non-operating revenue (expense)				
Interest expense	(13,165,069)	(12,733,444)	431,625	3.4%
Other revenues	1,326,328	1,292,480	33,848	2.6%
Other expenses	(354,727)	(924,621)	569,894	61.6%
	(12,193,468)	(12,365,585)	172,117	1.4%
Net loss before capital contributions	(837,289)	(3,398,263)	(2,560,974)	(75.4%)
Capital asset contributions		211,506	211,506	100.0%
Change in net position	(\$ 837,289)	(\$ 3,186,757)	(\$ 2,349,468)	(73.7%)



CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

As of December 31, 2017, the Authority had \$307.0 million of gross investment in capital assets, with \$119.0 million in accumulated depreciation, for a net book value of \$188.0 million. This amount represents a 3.0% increase over the prior year. Net capital assets make up 82.6% of the Authority's total

Chester Water Authority
Statements of Net Position
December 31, 2017 and 2016

Assets and Deferred Outflows of Resources

	December 31,	
	2017	2016
<u>Current Assets</u>		
Cash and cash equivalents	\$ 12,277,335	\$ 15,403,124
Investments	1,185,056	2,006,735
Accounts receivable, net of allowance for doubtful accounts of \$300,000 in both 2017 and 2016	4,018,123	4,041,759
Unbilled revenue	4,100,936	4,657,916
Materials and supplies	2,438,785	1,992,837
Other current assets	72,551	87,336
Total Current Assets	24,092,784	28,189,707
<u>Non-Current Assets</u>		
Property, plant, and equipment—net of accumulated depreciation	271,133,389	264,773,275
Net pension asset	1,501,182	-
Total Non-Current Assets	272,634,571	264,773,275
<u>Restricted Assets</u>		
Cash and cash equivalents	7,549,260	11,607,560
Total Restricted Assets	7,549,260	11,607,560
Total Assets	304,276,615	304,570,542
<u>Deferred Outflows of Resources</u>		
Changes in pension investment returns and actuarial assumptions	1,479,458	1,387,427
Deferred debt issuance costs	-	58,717
Total Deferred Outflows of Resources	1,479,458	1,446,144
Total Assets and Deferred Outflows of Resources	\$ 305,756,073	\$ 306,016,686

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2018 and 2017

Assets and Deferred Outflows of Resources

	December 31,	
	2018	2017
<u>Current Assets</u>		
Cash and cash equivalents	\$ 9,680,971	\$ 12,277,333
Investments	1,207,385	1,185,056
Accounts receivable, net of allowance for doubtful accounts of \$300,000 in both 2018 and 2017	4,215,519	4,018,123
Unbilled revenue	4,143,347	4,100,936
Materials and supplies	2,894,784	2,438,785
Other current assets	44,734	72,551
Total Current Assets	22,186,730	24,092,784
<u>Non-Current Assets</u>		
Property, plant, and equipment—net of accumulated depreciation	277,881,505	271,133,389
Net pension asset	-	1,501,182
Total Non-Current Assets	277,881,505	272,634,571
<u>Restricted Assets</u>		
Cash and cash equivalents	7,629,992	7,549,260
Total Restricted Assets	7,629,992	7,549,260
Total Assets	307,698,247	304,276,615
<u>Deferred Outflows of Resources</u>		
Changes in pension investment returns and actuarial assumptions	4,646,383	1,479,458
Changes in OPEB investment returns and actuarial assumptions	420,158	-
Total Deferred Outflows of Resources	5,066,541	1,479,458
Total Assets and Deferred Outflows of Resources	\$ 312,764,788	\$ 305,756,073

See accompanying notes to financial statements.

-11-

Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2017 and 2016

	December 31,	
	2017	2016
<u>Operating Revenues</u>		
Residential	\$ 16,471,074	\$ 15,921,450
Commercial	5,885,341	7,832,237
Industrial	7,414,215	7,555,707
Fire protection	4,001,045	3,741,370
Capacity charges, flat and late fee revenues	1,360,899	933,218
Sales to other water utilities	7,158,892	6,674,498
Total Operating Revenues	42,291,466	42,658,480
<u>Operating Expenses</u>		
Purification and Pumping	7,326,031	7,857,889
Distribution	7,159,659	6,740,726
Administrative	11,664,820	11,925,625
Finance/customer service, billing and collections	3,824,583	3,721,092
Depreciation	9,521,150	8,644,302
Total Operating Expenses	39,496,243	38,889,634
<u>Operating Income</u>	2,795,223	3,768,846
<u>Non-Operating Revenues (Expenses)</u>		
Net investment income	146,144	113,603
Interest expense	(2,681,713)	(2,384,151)
Other nonoperating revenues/expenses	982,798	294,218
Amortization of bond discounts and debt issue costs	250,136	20,360
Loss on disposal of property and equipment	(481,900)	(12,038)
Total Non-Operating Revenues/(Expenses)	(1,784,535)	(1,968,008)
<u>Income Before Contributions</u>	1,010,688	1,800,838
<u>Capital Contributions</u>	2,699,498	1,623,074
<u>Change In Net Position</u>	3,710,186	3,423,912
<u>Net Position—Beginning of year</u>	229,828,321	226,404,409
<u>Net Position—End of year</u>	\$ 233,538,507	\$ 229,828,321

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes in Net Position
For The Years Ended December 31, 2018 and 2017

	December 31	
	2018	2017
<u>Operating Revenues</u>		
Residential	\$ 16,270,379	\$ 16,471,074
Commercial	7,006,726	5,885,341
Industrial	8,262,780	7,414,215
Fire protection	3,902,103	4,001,045
Capacity charges, flat and late fee revenues	1,134,612	1,360,899
Sales to other water utilities	6,749,553	7,158,892
Total Operating Revenues	43,326,153	42,291,466
<u>Operating Expenses</u>		
Purification and Pumping	7,479,180	7,326,031
Distribution	7,989,652	7,159,659
Administrative	12,605,483	11,664,820
Finance/customer service, billing and collections	4,189,300	3,824,583
Depreciation	9,575,108	9,521,150
Total Operating Expenses	41,838,723	39,496,243
<u>Operating Income</u>	1,487,430	2,795,223
<u>Non-Operating Revenues (Expenses)</u>		
Net investment income	131,632	146,144
Interest expense	(2,776,729)	(2,681,713)
Other nonoperating revenues	514,231	982,798
Amortization of bond discounts and debt issuance costs	401,140	250,136
Gain (loss) on disposal of property and equipment	17,882	(481,900)
Total Non-Operating Revenues/(Expenses)	(1,711,844)	(1,784,535)
<u>(Loss) Income Before Contributions</u>	(224,414)	1,010,688
<u>Capital Contributions</u>	5,652,845	2,699,498
<u>Change in Net Position</u>	5,428,431	3,710,186
<u>Net Position—Beginning of year, as previously reported</u>	233,538,507	229,828,321
<u>Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability</u>	(4,932,637)	-
<u>Net Position - Beginning of year, restated</u>	228,605,870	229,828,321
<u>Net Position—End of year</u>	\$ 234,034,301	\$ 233,538,507

See accompanying notes to financial statements.

EXHIBIT 20
Page 260 of 273

Appendix A-5.2 (Gannett Fleming)
PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2017 AND 2016

	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	\$ 11,076	\$ 21,620
Accounts receivable, net:		
Water:		
Billed	9,335	6,388
Unbilled	6,760	5,886
Total water	16,095	12,274
Wastewater treatment:		
Billed	9,975	10,844
Unbilled	3,746	3,719
Total wastewater treatment	13,721	14,563
Other receivables	1,074	797
Total accounts receivable, net	30,890	27,634
Prepaid expenses	674	65
Inventory	3,777	2,218
Total current assets	46,417	51,537
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	18,264	11,900
Investments	11,684	14,437
Total restricted assets	29,948	26,337
Capital assets, not being depreciated	100,240	88,861
Capital assets, net of accumulated depreciation	589,567	587,937
Total noncurrent assets	719,755	703,135
Total Assets	766,172	754,672
Deferred Outflows of Resources		
Deferred charge on refunding	110,326	25,008
Accumulated decrease in fair value of hedging derivatives	3,279	70,897
Total Deferred Outflows of Resources	113,605	95,905

(Continued)

The notes to financial statements are an integral part of this statement.

Appendix A-5.2 (Gannett Fleming) EXHIBIT 20
Page 261 of 273

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 2018 AND 2017

	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 46,920	\$ 11,076
Accounts receivable, net:		
Water:		
Billed	8,537	9,335
Unbilled	8,583	6,760
Total water	17,120	16,095
Wastewater treatment:		
Billed	7,014	9,975
Unbilled	3,719	3,746
Total wastewater treatment	10,733	13,721
Other receivables	1,510	1,074
Total accounts receivable, net	29,363	30,890
Prepaid expenses	520	674
Inventory	1,984	3,777
Total current assets	78,787	46,417
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents	13,970	18,264
Investments	9,356	11,684
Total restricted assets	23,326	29,948
Hedging derivative - interest rate swap	4,750	-
Capital assets, not being depreciated	139,303	100,240
Capital assets, net of accumulated depreciation	618,177	589,567
Total noncurrent assets	785,556	719,755
Total Assets	864,343	766,172
Deferred Outflows of Resources		
Deferred charge on refunding	102,534	110,326
Accumulated decrease in fair value of hedging derivatives	757	3,279
Total Deferred Outflows of Resources	103,291	113,605

(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, 2017 AND 2016

	2017	2016
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 128,488	\$ 113,818
Wastewater treatment	68,935	62,125
Other	5,573	4,784
Total operating revenues	202,996	180,727
Operating Expenses:		
Direct operating expenses	71,156	60,687
Wastewater treatment	75,107	62,125
Cooperation agreement operating expenses:		
Indirect cost allocation - sewer conveyance	2,250	2,846
Indirect cost allocation - water	3,113	4,304
Expense of water provided by other entities:		
Subsidy of customers located in the City	5,594	1,974
Depreciation	16,172	16,657
Total operating expenses	173,392	148,593
Operating Income	29,604	32,134
Non-operating Revenues (Expenses):		
Donated property	1,595	981
Interest revenue	460	383
Investment income (loss) - change in fair value of swap	835	1,690
Interest and amortization	(34,913)	(36,966)
Bond issuance costs	(3,894)	-
Total non-operating revenues (expenses)	(35,917)	(33,912)
Net Income (Loss)	(6,313)	(1,778)
Net Position:		
Beginning of year	(37,523)	(35,745)
End of year	\$ (43,836)	\$ (37,523)

The notes to financial statements are an integral part of this statement.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

(Dollars expressed in thousands)

YEARS ENDED DECEMBER 31, 2018 AND 2017

	2018	2017
Operating Revenues:		
Residential, commercial, and industrial water sales	\$ 159,506	\$ 128,488
Wastewater treatment	67,261	68,935
Other	4,967	5,573
Total operating revenues	231,734	202,996
Operating Expenses:		
Direct operating expenses	72,633	71,156
Wastewater treatment	71,822	75,107
Reimbursement for City of Pittsburgh services	4,911	5,363
Expense of water provided by other entities:		
Subsidy of customers located in the City	3,814	5,594
Depreciation	16,894	16,172
Total operating expenses	170,074	173,392
Operating Income	61,660	29,604
Non-operating Revenues (Expenses):		
Donated property	13,649	1,595
Interest revenue	469	460
Investment income (loss) - change in fair value of swap	2,542	835
Interest and amortization	(34,365)	(34,913)
Bond issuance costs	-	(3,894)
Total non-operating revenues (expenses)	(17,705)	(35,917)
Special Item:		
Private lead line replacement	(4,478)	-
Net Income (Loss)	39,477	(6,313)
Net Position:		
Beginning of year	(43,836)	(37,523)
End of year	\$ (4,359)	\$ (43,836)

The notes to financial statements are an integral part of this statement.

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U.S. Capital Markets Performance by
Asset Class 1926–2018

Exhibit 7.1: Aggregate Market Capitalization and Company Counts of the CRSP (NYSE/NYSE MKT/NASDAQ) Deciles and Size Groupings
December 31, 2018

Decile	Historic Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in \$thousands)	Recent Percentage of Total Capitalization
1-Largest	63.22%	191	19,292,756,366	69.06%
2	13.91%	202	3,374,015,549	12.08%
3	7.53%	192	1,736,953,613	6.22%
4	4.72%	222	1,163,165,541	4.16%
5	3.25%	219	736,762,076	2.64%
6	2.41%	286	631,058,072	2.26%
7	1.79%	284	403,045,100	1.44%
8	1.33%	348	307,565,042	1.10%
9	1.02%	444	200,061,186	0.72%
10-Smallest	0.81%	725	89,596,785	0.32%
Mid-Cap 3-5	15.50%	633	3,636,881,230	13.02%
Low-Cap 6-8	5.52%	918	1,341,668,214	4.80%
Micro-Cap 9-10	1.84%	1,169	289,657,971	1.04%

Source of data: CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP, visit crsp.uchicago.edu

In Exhibit 7.2, the largest company in each of the CRSP (NYSE/NYSE MKT/NASDAQ) deciles and size groupings (by market capitalization) are listed as of September 30, 2018.

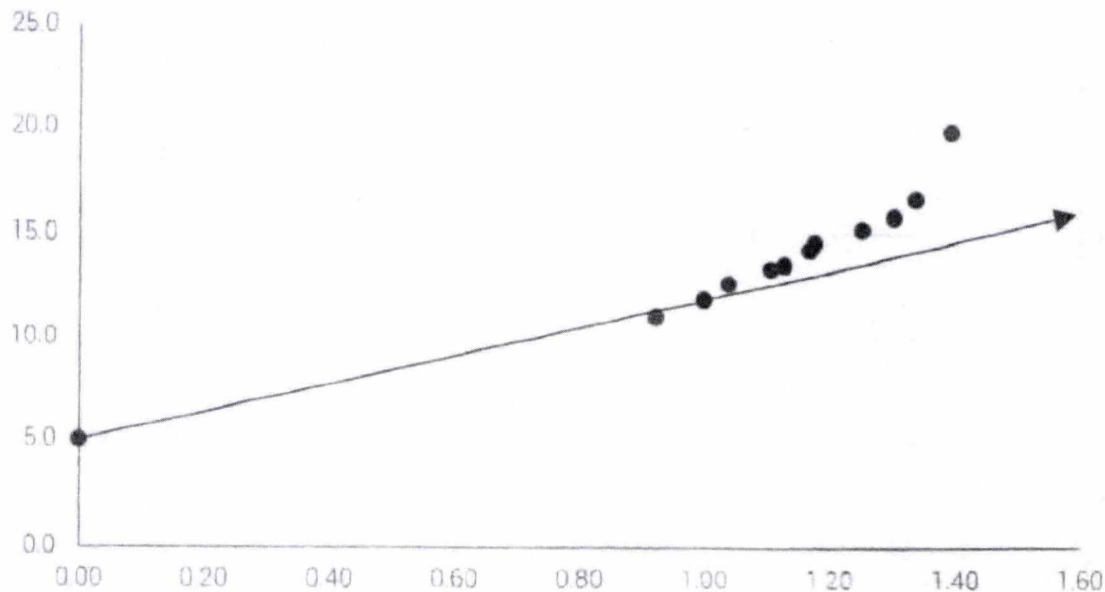
Exhibit 7.6: Summary Statistics of Annual Returns (CRSP NYSE/NYSE MKT/NASDAQ Deciles) (%)
1926–2018

Decile	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Serial Correlation
1 - Largest	9.3	11.0	18.8	0.06
2	10.4	12.7	21.4	0.00
3	10.9	13.4	23.2	-0.03
4	10.7	13.6	25.4	-0.03
5	11.2	14.3	26.0	-0.03
6	11.2	14.6	27.0	0.01
7	11.4	15.2	28.9	0.01
8	11.3	15.8	32.7	0.00
9	11.3	16.7	36.8	0.06
10	12.9	19.8	42.1	0.14
Mid-Cap	10.9	13.6	24.3	-0.03
Low-Cap	11.3	15.0	28.5	0.01
Micro-Cap	11.9	17.7	38.5	0.08
The "Market" (Deciles 1-10)	9.8	11.7	19.9	0.01

Source of underlying data: CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP visit crsp.com. All calculations performed by Duff & Phelps.

Exhibit 7.7 is a graphical depiction of the year-end index levels presented in Exhibit 7.5 for mid-cap stocks (a portfolio comprised of CRSP deciles 3, 4, and 5), low-cap stocks (a portfolio comprised of CRSP deciles 6, 7, and 8), micro-cap stocks (a portfolio comprised of CRSP deciles 9 and 10), and the "market" (a portfolio comprised of CRSP deciles 1–10).

Exhibit 7.9: Security Market Line Versus a Scatter-Plot of Average Arithmetic Total Returns of the CRSP NYSE/NYSE MKT/NADAQ Deciles 1–10 and Their Respective Betas.



Sources of underlying data: Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1926–December 2018. Historical riskless rate measured by the 93-year arithmetic mean income return component of SBBI® 20-year government bonds (4.97%). Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (11.88%) minus the arithmetic mean income return component of SBBI® 20-year government bonds (4.97%) from 1926–2018. Sources of underlying data: (i) Morningstar, Inc. Used with permission. All rights reserved. (ii) CRSP U.S. Stock Database and CRSP U.S. Indices Database © 2019 Center for Research in Security Prices (CRSP®), University of Chicago Booth School of Business. To learn more about CRSP, visit crsp.com. All calculations performed by Duff & Phelps.

Serial Correlation in Small-Cap Stock Returns

Serial correlation, or first-order autocorrelation, measures the degree to which the return of a given series is related from period to period. Serial correlation, like cross-correlation, ranges from 1.0 to negative 1.0. A positive serial correlation can be an indicator of a trend in a return series. A serial correlation of 1.0 indicates that returns from one period have a perfectly positive relationship to the returns of the next period; returns are therefore perfectly predictable from one period to the next. A negative serial correlation can be an indicator of a cycle in a return series. A serial correlation of negative 1.0 indicates that returns from one period have a perfectly negative relationship to the next period. A serial correlation near zero indicates that returns are random or unpredictable.

If stock returns have a positive or a negative serial correlation, one can gain some information about future performance based on prior period returns. The serial correlation of returns on large-cap stocks is near zero (see Exhibit 7.6). For the smallest deciles of stocks, the serial correlation tends to be higher. This observation bears further examination.

The Water Utility Industry consists of eight investor-owned utilities that are mostly regulated by state authorities.

Consolidation continues to occur at a slow, but steady pace.

Regulation continues to be one of the strengths of this sector. Unlike the electric and gas utility sectors, there is less confrontation among regulators and water utilities.

Over the past five years, the performance from the eight primary stocks in the group has been excellent. Indeed, the typical water equity has outperformed the broader market averages by a wide margin. In the fourth quarter of 2019, this was not the case, however.

Due in part to three cuts by the Federal Reserve, short-term rates have declined. Still, on a comparable basis, they seem more attractive than water utility stocks, which carry an average yield of only about 2.0%.

Based on many key indicators, the valuation of this group is close to a historical high.

Finally, even though several equities in the Water Utility Industry are ranked 1 (Highest) for year-ahead relative price performance, almost all have substantially less than average prospects over the next 18-month- and three- to five-year periods. Most equities here are already trading well within their estimated long-term Target Price Range.

Is The Rally Over?

For the most part, water utility stocks turned in another excellent performance in 2019. This has pretty much been the norm over the past decade. The group was once bought by investors for its high dividend yield, good annual payout prospects, and reliable earnings stream. Considered a conservative vehicle, investors were willing to forgo appreciation potential in return for certainty. The price performance has been so strong that the average yield is now lower than the average stock in the Value Line universe. Over the past few years, Wall Street questioned several times whether the rally here could continue. Was the last quarter the beginning of the end? Indeed, these stocks didn't fare well when compared to the broader market averages.

Industry Fundamentals

The water industry in the United States is extremely fragmented. Most water service is provided by authorities that are controlled by municipal or state agencies. There are currently, tens of thousands of these entities in operation. Consolidation has been accelerating as smaller districts are merging with larger ones. *American Water Works* and *Aqua America* are two examples of growth through acquisitions. In addition to increasing the size of their rate base (on which they earn a return), these firms have been able to achieve substantial economies of scale as there are many cost redundancies.

A construction boom is also underway. In the past, inefficient investment was made in maintaining the nation's pipelines and waste water facilities. The average age of a pipe in the United States is well over 50 years, with some assets being much older. Water utilities have been addressing the problem by increasing their capital budgets meaningfully. A good percentage of the

INDUSTRY TIMELINESS: 1 (of 95)

outlays are being targeted at replacing older pipes and valves.

Regulation

Investor-owned utilities are overseen by state regulators. In return for permitting a company to have a monopoly, authorities are allowed to determine what rate of return can be made on investments. Both regulators and companies have had a constructive relationship in determining the best way to improve the country's water system. By comparison, other regulated areas, such as electric and natural gas, relations have been less than cordial. For example, natural gas utilities are trying to expand their pipelines to increase use of the low-priced commodity. However, there has been push back here due to cost and environmental concerns.

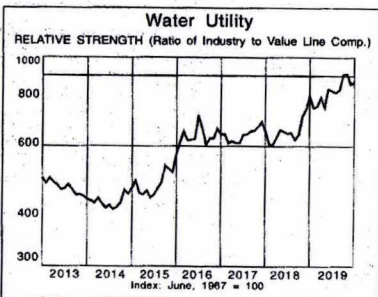
Liquid Gold?

As the world's population continues to grow, so will the demand for potable water. Due to insufficient supply in certain regions, some experts are calling water the next hot commodity. This could very well be true, but we do not know. For certain, a severe supply/demand imbalance is getting worse. In any case, the regulated water sector would not benefit, as these companies' earnings are capped (with the partial exception of *Consolidated Water*). Hence, the allowed rate of return will be set at a reasonable level. Excessive profits generated from operations would be returned to ratepayers in the form of lower water bills.

Conclusion

Despite the many positives of this group, the premium that investors have to pay to own a water stock is high based on most metrics. Several stand out for year-ahead performance. However, potential returns over the next 18 months and through 2022-2024 are subpar. As always, we recommend that subscribers carefully read each individual report before investing to have a better understanding of each company's specific risk profile.

James A. Flood



To subscribe call 1-800-VALUELINE

AMER. STATES WATER NYSE-AWR

RECENT PRICE **87.33** P/E RATIO **41.0** (Trading: 28.7, Historic: 21.0) RELATIVE P/E RATIO **2.23** D/D YLD **1.4%** VALUE LINE **1787**

TIMELINESS 1 (of 95) High: 21.0, 19.4, 19.9, 18.2, 24.1, 33.1, 38.7, 44.1, 47.2, 58.4, 50.1, 56.0, 65.3
Low: 13.8, 14.0, 15.6, 15.3, 17.0, 24.0, 27.0, 35.6, 41.1, 50.6, 61.3

SAFETY 2 (of 95) Rate: 70/12

TECHNICAL 2 (of 95) Lowest: 12/2019

Legend: 1.5x + Dividends as % of Price, 1.5x + Dividends as % of Price, 1.5x + Dividends as % of Price, 1.5x + Dividends as % of Price

18-Month Target Price Range: Low-High: 58-87, Midpoint (% to Mid): 58-87, 583 (-5%)

2023-24 PROJECTIONS: Price: 75, Gain: 15%, Div Yld: 1.4%, Total Return: 12%

Institutional Decisions: In Net: 138, In Sell: 109, In Hold: 2654, 2024: 139, 109, 2654, 2023: 140, 109, 2717

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue per sh	6.90	6.91	7.03	7.58	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	11.92	12.01	11.88	12.85	13.10
Cash Flow per sh	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.91	2.70	2.96	2.84	3.10	3.25
Earnings per sh	39	53	66	87	81	78	81	1.12	1.41	1.61	1.57	1.81	1.82	1.88	1.72	2.16	2.20	2.75
Div D Decl'd per sh	44	44	45	46	48	50	51	52	55	64	76	83	87	91	99	1.05	1.16	1.28
Cap Spending per sh	1.88	2.57	2.12	1.85	1.45	2.25	2.08	2.12	2.13	1.88	2.59	3.35	3.08	3.44	2.95	3.40	3.40	3.80
Book Value per sh	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	14.25	15.19	16.19	17.60	18.00	19.28
Common Sh Outg ^c	30.42	33.50	33.60	34.10	34.46	34.60	37.05	37.26	37.70	38.33	38.72	38.29	36.50	36.27	36.68	36.76	38.00	37.80
Avg Ann'l P/E Ratio	31.9	23.2	21.9	27.7	24.0	22.9	21.2	15.7	15.4	14.3	17.2	20.1	24.6	25.6	25.7	34.0	33.0	33.0
Relative P/E Ratio	1.82	1.23	1.17	1.50	1.27	1.38	1.41	1.00	0.97	0.91	0.97	1.06	1.24	1.34	1.29	1.82	1.82	1.82
Avg Ann'l Div'd Yld	3.5%	3.6%	3.1%	2.5%	2.2%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.0%	1.8%	1.4%	1.4%	1.4%

CAPITAL STRUCTURE as of 9/30/19
Total Debt \$475.3 mil. Due in 5 Yrs \$100.7 mil.
LT Debt \$475.0 mil. LT Interest \$24.0 mil. (45% of Cap)

Lapses, Uncapitalized: Annual rentals \$2.6 mil.
Pension Assets-12/18 \$102.5 mil. **Obliq.** \$106.1 mil.

Pfd Stock None

Common Stock 36,830,301 shs. as of 11/19/19

MARKET CAP: \$3.2 billion (Mid Cap)

Current Position	2017	2018	9/30/19
Cash Assets	2	7.1	10.4
Accr Payable	26.1	23.4	28.1
Other	120.2	101.0	94.0
Current Assets	155.5	131.5	132.5
Accr Payable	61.0	59.5	59.8
Debt Due	59.3	40.3	3
Other	48.4	46.8	53.7
Current Liab.	158.7	146.6	117.8

ANNUAL RATES Post Est'd '16-'18 of change (per sh)
10 Yrs. 5 Yrs. 10 to 24-4
Revenues 3.5% 4.5% 4.5%
Cash Flow 6.0% 3.0% 0.0%
Earnings 9.0% 4.5% 6.0%
Dividends 7.5% 9.0% 9.5%
Book Value 5.0% 5.0% 5.0%

QUARTERLY REVENUES (\$ mil.)
Cal-ender: Mar-31 Jun-30 Sep-30 Dec-31 Full Year

2016	83.5	112.0	123.6	106.8	436.1
2017	96.8	113.2	124.4	104.2	440.6
2018	94.7	106.9	124.2	111.0	436.8
2019	101.7	124.6	134.5	114.2	476.0
2020	105	125	140	115	485

EARNINGS PER SHARE \$
Cal-ender: Mar-31 Jun-30 Sep-30 Dec-31 Full Year

2016	29	45	59	30	162
2017	34	62	57	35	186
2018	29	44	62	37	172
2019	35	72	76	42	225
2020	38	67	70	45	220

QUARTERLY DIVIDENDS PAID \$
Cal-ender: Mar-31 Jun-30 Sep-30 Dec-31 Full Year

2016	224	224	224	242	911
2017	242	242	256	255	991
2018	255	255	275	275	1,060
2019	275	275	305	305	1,160
2020					

(A) Primary earnings. Excludes nonrecurring gains/losses. '04, '05, '06, '08, '09, '10, '11, '12, '13, '14, '15, '16, '17, '18, '19, '20. Next earnings report due mid-February.
(B) Dividends historically paid in early March, June, September, and December. = Div'd reinvestment plan available.
(C) In millions, adjusted for split.
(D) Includes intangibles. As of 6/30/19. = \$1.1 million/60.3 a share.

Shares of American States Water have not participated in the recent market rally. In the last quarter of 2019, the S&P 500 Index rallied almost 10%. Over that same time span, the value of AWR has actually declined approximately 3%, an underperformance of more than 1200 basis points. We think profit taking and sector rotation by institutional investors were at least partially responsible for the poor showing.

Earnings in 2020 should top last year's impressive figure. Even though 2019 likely ended on a down note, American States' share earnings probably climbed to \$2.15, a 25% increase above the previous year's weak number. Rate relief and cost cutting were most likely the primary reasons for the strong comparison. These factors will probably have less of an impact on 2020's bottom line, but earnings per share could still well rise 2% to \$2.20, as the unregulated operations' gain in importance (more below).

Finances are solid. The company remains a distance third in terms of size in the water industry (American Water Works and Aqua America are the two

giant). Nevertheless, thanks to a balance sheet that doesn't have a large amount of debt, American Water is one of the two utilities in this nine-member group that carries a Financial Strength rating as high as an A.

Nonutility operations are generating a steady amount of income. The company's ASUS provides water service to military bases via 50-year fixed-price contracts. As more military installations privatize their water systems, we expect ASUS to raise its presence in this sector, by being successful in the competitive bidding process. This business should account for between 20% to 30% of total income by early next decade.

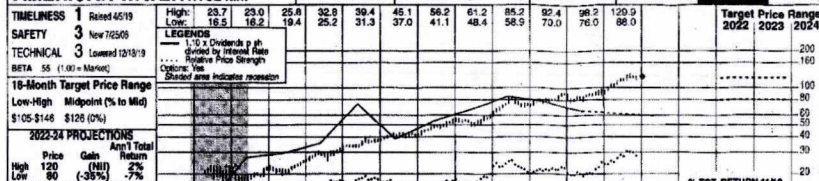
These shares are only for short-term investors. AWR carries a 1 (Highest) rank for year-ahead relative performance. Over the next 18-month period, our quantitative system believes the stock will actually decrease in value, however. In addition, even with the recent price decline, the equity is trading above our projected 2022-2024 Target Price Range. Finally, the dividend yield is subpar.

James A. Flood January 10, 2020

Company's Financial Strength **A**
Stock's Price Stability **6**
Price Growth Persistence **95**
Earnings Reliability **90**

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AMERICAN WATER NYSE-AWK RECENT PRICE **123.05** P/E RATIO **33.3** (Trading: 35.1) RELATIVE P/E RATIO **1.81** DIV/YLD **1.7%** VALUE LINE **1788**



Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
Revenue per sh	23.80	28.00	33.00	38.00	43.00	48.00	53.00	58.00	63.00	68.00	73.00	78.00	83.00	88.00	93.00	98.00	103.00	108.00	113.00	118.00	123.00	128.00	133.00	
Cash Flow per sh	8.30	9.50	10.50	11.50	12.50	13.50	14.50	15.50	16.50	17.50	18.50	19.50	20.50	21.50	22.50	23.50	24.50	25.50	26.50	27.50	28.50	29.50	30.50	
Earnings per sh	4.79	5.50	6.20	7.00	7.80	8.60	9.40	10.20	11.00	11.80	12.60	13.40	14.20	15.00	15.80	16.60	17.40	18.20	19.00	19.80	20.60	21.40	22.20	
Dividend per sh	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	
Cap Spending per sh	4.08	4.50	4.90	5.30	5.70	6.10	6.50	6.90	7.30	7.70	8.10	8.50	8.90	9.30	9.70	10.10	10.50	10.90	11.30	11.70	12.10	12.50	12.90	
Book Value per sh	41.25	45.00	48.75	52.50	56.25	60.00	63.75	67.50	71.25	75.00	78.75	82.50	86.25	90.00	93.75	97.50	101.25	105.00	108.75	112.50	116.25	120.00	123.75	
Common Shs Outg ^c	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
Avn Ann P/E Ratio	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	
Avn Ann Div/Yld	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	

CAPITAL STRUCTURE as of 9/30/19

Total Debt \$914.0 mil	2440.7	2710.7	2888.2	2876.9	2801.9	3011.3	3150.0	3302.0	3557.0	3440.0	3630.0	3810.0	4000.0	4200.0	4400.0	4600.0	4800.0	5000.0	5200.0	5400.0	5600.0	5800.0	6000.0
LT Debt \$850.0 mil	209.9	267.8	304.9	374.3	389.3	429.8	476.0	468.0	426.0	587.0	650.0	700.0	750.0	800.0	850.0	900.0	950.0	1000.0	1050.0	1100.0	1150.0	1200.0	1250.0
LT Intest \$270.0 mil (50% of Cap)	37.9%	40.4%	39.5%	40.7%	38.1%	38.4%	39.1%	39.2%	38.3%	28.2%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%

Leases: Uncapitalized: Annual rents \$17.0 mil. Pension Assets: \$218.1 million. Oblig: \$1,892.0 mil. Pfd Stock \$7.0 mil. Pfd Div \$4.4 mil

CURRENT CAP: \$22.2 billion (Large Cap)

Cash Assets	162	158	116
Accounts Receivable	272	301	335
Other	966	322	348
Current Assets	750	781	799
Accounts Payable	195	175	149
Debt Due	1227	1035	503
Other	303	684	536
Current Liab.	2326	2034	1483

ANNUAL RATES

Revenue	3.0%	3.5%	4.0%
Cash Flow	16.5%	8.0%	7.0%
Earnings	6.5%	8.5%	8.0%
Dividends	10.5%	10.5%	9.0%
Book Value	1.6%	4.0%	5.0%

QUARTERLY REVENUES (\$ mil.)

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mar-31	743.0	827.0	950.0	802.0	832.0	832.0	832.0	832.0	832.0
Jun-30	756.0	844.0	926.0	821.0	857.0	857.0	857.0	857.0	857.0
Sep-30	781.0	853.0	976.0	850.0	840.0	840.0	840.0	840.0	840.0
Dec-31	819.0	882.0	1013.0	822.0	863.0	863.0	863.0	863.0	863.0
2020	850	930	1080	890	910	910	910	910	910

EARNINGS PER SHARE

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mar-31	46	77	83	57	232	232	232	232	232
Jun-30	52	73	112	61	238	238	238	238	238
Sep-30	59	91	103	62	315	315	315	315	315
Dec-31	65	94	133	71	369	369	369	369	369
2020	85	100	146	80	330	330	330	330	330

QUARTERLY DIVIDENDS PAID

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mar-31	34	375	375	375	147	147	147	147	147
Jun-30	375	415	415	415	182	182	182	182	182
Sep-30	415	455	455	455	178	178	178	178	178
Dec-31	455	50	50	50	196	196	196	196	196
2020	455	50	50	50	178	178	178	178	178

AMERICAN WATER is the largest investor-owned water and wastewater utility in the U.S. providing the water and wastewater services to more than 14 million people in 46 states and Ontario, Canada. Nonregulated business assets municipalities and military bases with the maintenance and upkeep as well as regulated operations made up 87% of 2018 revenues. New Jersey is its largest market accounting for 24% of regulated revenues. Pennsylvania, 23%. Has 7,100 employees. The Vanguard Corp. owns 11.0% of outstanding shares; BlackRock, Inc., 7.3%; officers & directors, less than 1.0%. (3/19 Proff) President & CEO: Susan N. Story, Chairman: George MacFarlane, Address: 1 Water Street, Camden, NJ 08102. Tel: 856-348-8200. Internet: www.amwater.com

AMERICAN WATER WORKS enters the new decade as the most dominant member in this group. By any measure, it is the largest investor-owned water utility in the country. With its acquisition strategy and large spending budget (more below), the company should continue to grow its rate base substantially for the foreseeable future.

The consolidation of the water industry is providing the company with plenty of opportunities. The U.S. water sector is composed of thousands of small, inefficient water districts that are mostly run by local municipalities. As more capital is required to upgrade antiquated pipelines and wastewater facilities, many of these districts are looking to be acquired by larger entities. American has been buying up some of these districts every year. Its bottom line benefits from this process because economies of scale are very achievable in this space.

The projected construction program is massive. At the company's recent Investor Day, management announced that it planned on spending about \$1.8 billion this year and about \$2.1 billion over the next 10 years on expanding and improving its infrastructure. Relations with the different state regulators will remain very important as these authorities will decide what kind of return can be made on these investments. Based on the historical record, the regulatory climate should remain constructive.

Finances will likely just remain average, though. Over the past decade or so, the water utility has relied almost exclusively on debt and internally generated cash to fund the building program. With the value of the equity increasing more than sixfold during the period, the company could do well by increasing its equity base. Until this happens, we don't expect the balance sheet to stand out.

Shares of American Water Works hold our Highest (1) rank for Timeliness. Like most equities in the water utility industry, however, AWK is highly overvalued by several key financial measures. Our 18-month quantitative model also indicates that the stock will not do well. Total return potential to 2022-2024 is very unattractive.

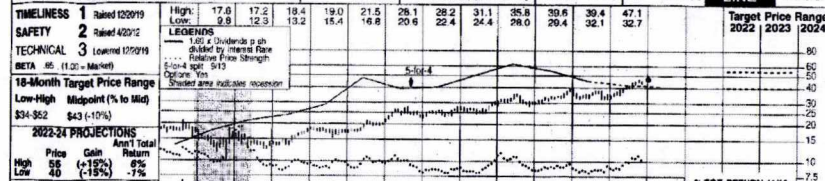
James A. Flood January 10, 2020

Company's Financial Strength

Stock Price Stability	35
Price Growth Persistence	85
Earnings Predictability	100

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AQUA AMERICA NYSE-WTR RECENT PRICE **47.08** P/E RATIO **35.9** (Trading: 47.3) RELATIVE P/E RATIO **1.95** DIV/YLD **2.1%** VALUE LINE **1789**



Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024		
Revenue per sh	23.80	27.80	30.80	32.30	35.10	37.10	39.30	42.10	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	43.20	
Cash Flow per sh	8.30	9.77	10.77	11.64	12.41	12.98	14.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	15.10	
Earnings per sh	4.79	5.57	6.56	7.57	8.58	9.59	10.60	11.61	12.62	13.63	14.64	15.65	16.66	17.67	18.68	19.69	20.70	21.71	22.72	23.73	24.74	25.75	26.76	
Dividend per sh	2.75	3.00	3.25	3.50	3.75	4.00	4.25	4.50	4.75	5.00	5.25	5.50	5.75	6.00	6.25	6.50	6.75	7.00	7.25	7.50	7.75	8.00	8.25	
Cap Spending per sh	4.08	4.51	4.94	5.37	5.80	6.23	6.66	7.09	7.52	7.95	8.38	8.81	9.24	9.67	10.10	10.53	10.96	11.39	11.82	12.25	12.68	13.11	13.54	
Book Value per sh	41.25	45.00	48.75	52.50	56.25	60.00	63.75	67.50	71.25	75.00	78.75	82.50	86.25	90.00	93.75	97.50	101.25	105.00	108.75	112.50	116.25	120.00	123.75	
Common Shs Outg ^c	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00	168.00
Avn Ann P/E Ratio	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	
Avn Ann Div/Yld	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	

CAPITAL STRUCTURE as of 9/30/19

Total Debt \$398.4 mil	670.5	726.1	712.0	757.8	788.6	779.9	814.2	818.9	809.5	880.0	830.0	880.0	930.0	980.0	1030.0	1080.0	1130.0	1180.0	1230.0	1280.0	1330.0	1380.0	1430.0
LT Debt \$268.8 mil	104.4	124.0	144.8	153.1	205.0	213.9	201.8	234.2	228.7	192.0	220.0	209.0	220.0	230.0	240.0	250.0	260.0	270.0	280.0	290.0	300.0	310.0	320.0
LT Intest \$208.0 mil (45% of Cap)	39.4%	39.2%	32.5%	39.0%	30.0%	30.5%	33.5%	32.6%	32.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%	28.6%

Pension Assets: \$218.1 million. Oblig: \$282.0 mil.

Pfd Stock None

Market Cap: \$10.2 billion (Large Cap)

CURRENT CAP: \$10.2 billion (Large Cap)

Cash Assets	162	158	116
Accounts Receivable	272	301	335
Other	966	322	348
Current Assets	750	781	799
Accounts Payable	195	175	149
Debt Due	1227	1035	503
Other	303	684	536
Current Liab.	2326	2034	1483

ANNUAL RATES

Revenue	3.0%	3.5%	4.0%
Cash Flow	16.5%	8.0%	7.0%
Earnings	6.5%	8.5%	8.0%
Dividends	7.5%	8.0%	8.0%
Book Value	6.5%	8.5%	9.0%

QUARTERLY REVENUES (\$ mil.)

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Mar-31	182.6	203.9	226.6	198.8	193.9	193.9	193.9	193.9	193.9
Jun-30	187.8	204.4	215.0	203.3	205.5	205.5	205.5	205.5	205.5
Sep-30	194.3	211.9	228.2	205.7	207.8	207.8	207.8</		

CALIFORNIA WATER NYSE:CWT

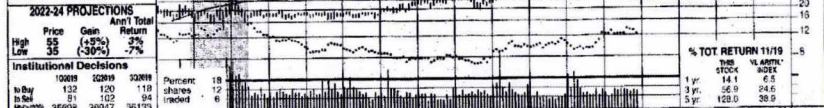
RECENT PRICE **51.52** P/E RATIO **31.0** (Trading: 27.1) RELATIVE P/E RATIO **1.68** DIV YLD **1.5%** VALUE LINE **1790**

High: 23.3 24.1 19.8 19.4 19.3 23.4 26.4 28.0 36.8 46.2 49.1 57.5
 Low: 13.8 16.7 16.9 16.7 18.4 20.3 20.3 19.5 22.5 32.4 35.3 44.6

Target Price Range 2022-2024
 2022: 120
 2023: 100
 2024: 80

TECHNICAL 3 Lowered 1/27/21
 TECHNICAL 3 Lowered 1/27/21
 BETA 70 (1.00 - Market)

18-Month Target Price Range
 Low-High Midpoint (% to Mid)
 \$44.59 - \$57 (10%)



Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue per sh	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Cash Flow per sh	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Earnings per sh	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Dividend per sh	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23

MARKET CAP: \$2.5 billion (Mid Cap)
CURRENT POSITION: 2017 2018 9/30/19
 Cash Assets 94.8 47.2 51.3
 Other 133.1 141.5 162.8
 Current Assets 227.9 188.7 212.1
 Accts Payable 94.0 66.8 109.6
 Debt Due 291.0 170.0 162.4
 Other 109.0 55.8 84.9
 Current Liab 491.0 321.2 333.9

ANNUAL RATES PAID Post Est '16-'18
 of change per sh 10 Yrs 5 Yrs 10-24
 Revenues 4.3% 5.0% 1.5%
 Cash Flow 6.0% 5.0% -3.5%
 Earnings 5.0% 5.5% 6.0%
 Dividends 2.0% 3.0% 6.5%
 Book Value 4.5% 4.5% 2.0%

QUARTERLY REVENUES (\$ mil) Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 121.7 152.4 164.3 151.0 634.4
 2017 122.1 171.1 211.1 182.0 686.9
 2018 134.5 174.9 225.4 167.4 602.2
 2019 126.1 179.0 225.5 172.4 703.0
 2020 140 185 237 178 740

EARNINGS PER SHARE Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 0.02 24.48 31 1.01
 2017 0.02 39 19 1.40
 2018 0.02 31 75 32 1.36
 2019 0.16 35 88 33 1.40
 2020 0.03 42 85 40 1.70

QUARTERLY DIVIDENDS PAID Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 0.02 0.02 0.02 0.02 0.08
 2017 0.02 0.02 0.02 0.02 0.08
 2018 0.02 0.02 0.02 0.02 0.08
 2019 0.02 0.02 0.02 0.02 0.08
 2020 0.02 0.02 0.02 0.02 0.08

Long term, investment spending and
 (A) Basic EPS. Excl. nonrecurring gain (loss).
 (B) Dividends historically paid in late Feb.
 (C) Incl. intangible assets in '18: \$247 mil.
 (D) In millions, adjusted for spillover.
 (E) Excludes non-imp. rev.
 (F) In millions, adjusted for spillover.
 (G) Company's Financial Strength
 Stock's Price Stability 80
 Price Growth Persistence 80
 Earnings Prevalability 60
 (H) In millions, adjusted for spillover.

CONSOL. WATER CO. NDC:CWCO

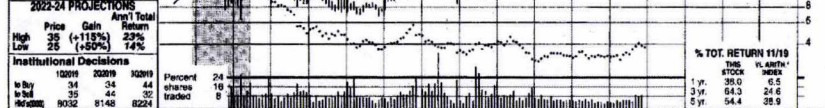
RECENT PRICE **16.46** P/E RATIO **27.4** (Trading: 30.5) RELATIVE P/E RATIO **1.49** DIV YLD **2.1%** VALUE LINE **1791**

High: 29.9 21.3 15.1 11.7 9.2 16.9 14.5 13.8 14.7 14.0 15.4 17.9
 Low: 7.8 6.2 8.1 7.3 6.2 7.5 8.4 9.6 10.0 10.8 11.1

Target Price Range 2022-2024
 2022: 40
 2023: 30
 2024: 20

TECHNICAL 3 Lowered 1/27/21
 TECHNICAL 3 Lowered 1/27/21
 BETA 86 (1.00 - Market)

18-Month Target Price Range
 Low-High Midpoint (% to Mid)
 \$10-\$19 \$15 (10%)



Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue per sh	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40	8.40
Cash Flow per sh	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Earnings per sh	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Dividend per sh	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34

MARKET CAP: \$250 million (Small Cap)
CURRENT POSITION: 2017 2018 9/30/19
 Cash Assets 47.2 31.3 43.6
 Accts Receivable 15.0 24.2 23.0
 Other 4.6 8.9 6.8
 Current Assets 66.7 62.4 73.4
 Accts Payable 5.7 4.6 2.2
 Debt Due 1.2 3.3 2.3
 Other 1.2 3.3 2.3
 Current Liab 7.8 7.9 5.5

ANNUAL RATES PAID Post Est '16-'18
 of change per sh 10 Yrs 5 Yrs 10-24
 Revenues 4.3% 5.0% 1.5%
 Cash Flow 6.0% 5.0% -3.5%
 Earnings 5.0% 5.5% 6.0%
 Dividends 2.0% 3.0% 6.5%
 Book Value 4.5% 4.5% 2.0%

QUARTERLY REVENUES (\$ mil) Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 14.6 15.4 14.4 14.1 57.5
 2017 15.6 15.3 16.8 14.8 62.3
 2018 14.3 15.9 18.8 16.7 65.7
 2019 17.0 18.3 15.9 16.8 68.0
 2020 17.0 18.0 16.5 17.5 69.0

EARNINGS PER SHARE Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 16 15 13 10 27
 2017 16 11 08 04 41
 2018 14 08 30 30 58
 2019 17 16 11 14 59
 2020 17 17 15 15 69

QUARTERLY DIVIDENDS PAID Full Year
 Mar-31 Jun-30 Sep-30 Dec-31
 2016 0.075 0.075 0.075 0.075 0.30
 2017 0.075 0.075 0.075 0.075 0.30
 2018 0.085 0.085 0.085 0.085 0.34
 2019 0.085 0.085 0.085 0.085 0.34
 2020 0.085 0.085 0.085 0.085 0.34

Consolidated Water's share earnings
 will probably recover, to some extent,
 in 2020. Last year's bottom line was hurt
 when bulk water rates were reduced in the
 Cayman Islands. Year-over-year compar-
 isons were also not favorable due to
 some unusual gains recorded in 2018.
 However, increased activity at the Aerex
 business, which manufactures parts for
 desalination facilities, should rise as more
 of these projects are built. All told, Consol-
 idated share net could climb 11%.

The desalination segment of the water
 sector remains attractive. Management
 currently estimates that there are 18,500
 desalination plants in the world that supply
 water to over 800 million people. Annual
 growth in this sector is expected to
 average close to 10%. Much of this will be
 attributable to rising populations in many
 parts of the world where potable water is
 not plentiful. Indeed, in California and the
 southwestern United States, the use of this
 process ought to pick up considerably.
 In the Golden State, there are 11 projects
 in operation, with another 10 in the plan-
 ning stages. Consolidated has most of its
 plants domiciled in countries where opera-

(A) Fully diluted earnings. Excludes gains from discontinued operations: '17, \$0.07 a share; '18, \$0.07 a share; '19, \$0.24 a share. Net earnings report date mid-February. (B) Dividends historically paid in late January. (C) Includes intangibles. As of 9/30/19, \$3.3 million/\$0.62 a share. (D) In millions, adjusted for spillover. (E) In millions, adjusted for spillover. (F) Company's Financial Strength Stock's Price Stability 80 Price Growth Persistence 80 Earnings Prevalability 60 (G) In millions, adjusted for spillover. (H) Company's Financial Strength Stock's Price Stability 80 Price Growth Persistence 80 Earnings Prevalability 60 (I) In millions, adjusted for spillover.

MIDDLESEX WATER NDQ:MXE										RECENT PRICE	PE RATIO	YIELD	VALUE LINE						
										63.56	31.5	1.71	1792						
TIME LINES 3 Lowest 12/21/19 SAFETY 2 New 10/21/11 TECHNICAL 2 Billed 10/23 BETA .75 (1.00 = Market) 18-Month Target Price Range Low-High Midpoint (% to Mid) \$52-\$89 \$71 (10%) 2022-24 PROJECTIONS Price Gain Ann'l Total High Low 45 (-30%) 65 (+30%) 0% Institutional Decisions To Buy 72 70 56 30219 To Sell 67 58 67 30219 Net Buy 5 12 11 0 Volume 2432 2015 4										MARKET CAP: \$1.1 billion (Mid-Cap) CURRENT POSITION 2017 2018 9/30/19 (SMILL) Cash 4.9 3.7 3.2 Other 24.5 27.1 31.5 Current Assets 29.2 30.8 34.7 Accts Payable 13.9 19.9 20.2 Debt Due 34.9 55.8 65.7 Other 15.7 19.3 17.6 Current Liab. 64.5 84.4 103.3 ANNUAL RATES Past Past Est'd '16-'18 of change (per sh) 10 Yrs. 5 Yrs. to 22-24 Revenues 2.5% 3.5% 2.9% Cash Flow 5.5% 8.0% 6.5% Earnings 6.0% 11.0% 7.0% Dividends 2.0% 3.0% 5.0% Book Value 3.5% 4.5% 3.0% QUARTERLY REVENUES (\$ mil.) Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 30.6 32.7 37.8 31.8 132.9 2017 30.1 33.0 38.2 31.5 130.8 2018 31.2 34.9 38.7 33.3 138.1 2019 30.7 33.4 37.8 33.1 135.0 2020 30.0 32.0 35.0 35.0 128.0 EARNINGS PER SHARE \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 29 36 54 19 138 2017 27 33 46 32 138 2018 27 52 74 43 139 2019 28 45 66 41 145 2020 40 55 80 45 160 QUARTERLY DIVIDENDS PAID \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 1.9675 1.9875 1.9875 2.1125 2017 2.1125 2.1125 2.1125 2.2375 2018 2.2375 2.2375 2.2375 2.4 2019 2.4 2.4 2.4 2.582 2.98									
MARKET CAP: \$1.1 billion (Mid-Cap) CURRENT POSITION 2017 2018 9/30/19 (SMILL) Cash 4.9 3.7 3.2 Other 24.5 27.1 31.5 Current Assets 29.2 30.8 34.7 Accts Payable 13.9 19.9 20.2 Debt Due 34.9 55.8 65.7 Other 15.7 19.3 17.6 Current Liab. 64.5 84.4 103.3 ANNUAL RATES Past Past Est'd '16-'18 of change (per sh) 10 Yrs. 5 Yrs. to 22-24 Revenues 2.5% 3.5% 2.9% Cash Flow 5.5% 8.0% 6.5% Earnings 6.0% 11.0% 7.0% Dividends 2.0% 3.0% 5.0% Book Value 3.5% 4.5% 3.0% QUARTERLY REVENUES (\$ mil.) Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 30.6 32.7 37.8 31.8 132.9 2017 30.1 33.0 38.2 31.5 130.8 2018 31.2 34.9 38.7 33.3 138.1 2019 30.7 33.4 37.8 33.1 135.0 2020 30.0 32.0 35.0 35.0 128.0 EARNINGS PER SHARE \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 29 36 54 19 138 2017 27 33 46 32 138 2018 27 52 74 43 139 2019 28 45 66 41 145 2020 40 55 80 45 160 QUARTERLY DIVIDENDS PAID \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 1.9675 1.9875 1.9875 2.1125 2017 2.1125 2.1125 2.1125 2.2375 2018 2.2375 2.2375 2.2375 2.4 2019 2.4 2.4 2.4 2.582 2.98																			

SJW GROUP NYSE: SJW										RECENT PRICE	PE RATIO	YIELD	VALUE LINE						
										71.79	44.3	2.41	1793						
TIME LINES 3 Suspended 5/1/19 SAFETY 3 New 4/23/11 TECHNICAL 3 Suspended 5/1/19 BETA .60 (1.00 = Market) 18-Month Target Price Range Low-High Midpoint (% to Mid) \$45-\$85 \$66 (5%) 2022-24 PROJECTIONS Price Gain Ann'l Total High Low 95 (-30%) 65 (+30%) 0% Institutional Decisions To Buy 88 91 94 30219 To Sell 71 62 62 30219 Net Buy 17 29 32 0 Volume 13346 19526 19564										MARKET CAP: \$2.2 billion (Mid Cap) CURRENT POSITION 2017 2018 9/30/19 (SMILL) Cash Assets 7.6 42.0 42.4 Accts Receivable 17.3 19.2 20.0 Other 41.8 62.6 55.1 Current Assets 66.7 123.8 117.5 Accts Payable 23.0 24.9 29.2 Debt Due 62.1 139.1 116.1 Other 85.1 164.0 144.3 ANNUAL RATES Past Past Est'd '16-'18 of change (per sh) 10 Yrs. 5 Yrs. to 22-24 Revenues 5.0% 5.5% 4.0% Cash Flow 7.0% 11.0% 3.0% Earnings 8.0% 18.5% 7.0% Dividends 4.5% 5.0% 7.0% Book Value 5.5% 8.0% 7.5% QUARTERLY REVENUES (\$ mil.) Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 61.1 66.9 112.3 79.4 339.7 2017 69.0 102.1 124.6 93.5 389.2 2018 75.0 99.1 124.9 98.7 397.7 2019 77.7 103.0 114.0 115 310 2020 105 135 170 125 535 EARNINGS PER SHARE \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 16 22 92 67 257 2017 18 30 94 84 239 2018 26 29 38 28 132 2019 21 47 33 44 146 2020 20 25 85 85 245 QUARTERLY DIVIDENDS PAID \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 2025 2025 2025 2025 2025 2017 2175 2175 2175 3975 104 2018 28 28 28 112 2019 30 30 30 30 120									
MARKET CAP: \$2.2 billion (Mid Cap) CURRENT POSITION 2017 2018 9/30/19 (SMILL) Cash Assets 7.6 42.0 42.4 Accts Receivable 17.3 19.2 20.0 Other 41.8 62.6 55.1 Current Assets 66.7 123.8 117.5 Accts Payable 23.0 24.9 29.2 Debt Due 62.1 139.1 116.1 Other 85.1 164.0 144.3 ANNUAL RATES Past Past Est'd '16-'18 of change (per sh) 10 Yrs. 5 Yrs. to 22-24 Revenues 5.0% 5.5% 4.0% Cash Flow 7.0% 11.0% 3.0% Earnings 8.0% 18.5% 7.0% Dividends 4.5% 5.0% 7.0% Book Value 5.5% 8.0% 7.5% QUARTERLY REVENUES (\$ mil.) Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 61.1 66.9 112.3 79.4 339.7 2017 69.0 102.1 124.6 93.5 389.2 2018 75.0 99.1 124.9 98.7 397.7 2019 77.7 103.0 114.0 115 310 2020 105 135 170 125 535 EARNINGS PER SHARE \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 16 22 92 67 257 2017 18 30 94 84 239 2018 26 29 38 28 132 2019 21 47 33 44 146 2020 20 25 85 85 245 QUARTERLY DIVIDENDS PAID \$ Full Cal- Mar-31 Jun-30 Sep-30 Dec-31 Year 2016 2025 2025 2025 2025 2025 2017 2175 2175 2175 3975 104 2018 28 28 28 112 2019 30 30 30 30 120																			

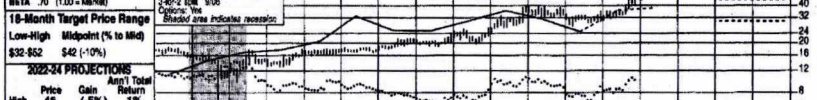
(A) Diluted earnings. Next earnings report due late January. (B) Dividends historically paid in mid-Feb., May, Aug., and November a Div r reinvestment plan available. (C) In millions. Company's Financial Strength Stock's Price Stability Price Growth Persistence Earnings Predictability

(A) Diluted earnings. Excludes nonrecurring losses. '03: \$1.97, '04: \$3.78, '05: \$1.09, '06: \$1.36, '07: \$1.22, '08: \$0.45, GAAP average. '09 as of 2015. Next earnings report due early February. Quarterly earnings may not add due to rounding. (B) Dividends historically paid in early March, June, September, and December. a Div r reinvestment plan available. (C) In millions, adjusted for stock splits. (D) Paid special dividend of \$0.17 per share on 1/17/17. Company's Financial Strength Stock's Price Stability Price Growth Persistence Earnings Predictability

Appendix A-5
 2022-24
 C
 9/27/23
 EXHIBIT 20

YORK WATER NDQ:YORW

RECENT PRICE	46.38	PE RATIO	39.3 (Trailing 48.7 Median: 23.0)	RELATIVE PE RATIO	2.14	DIVID YLD	1.6%	VALUE LINE	1794
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Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
High	21.8	25.8	25.6	27.8	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.88	3.70	3.77	3.74	3.86	4.05	4.05	4.05	4.05	4.05	4.05
Low	8.5	7.9	7.7	8.8	8.8	9.5	1.07	1.12	1.19	1.36	1.45	1.42	1.53	1.38	1.78	1.80	1.80	1.80	1.80	1.80	1.80	1.80

2022-24 PROJECTIONS	Price	Gain	Ann'l Total Return
High	45	(-5%)	1%
Low	30	(-35%)	-7%

CAPITAL STRUCTURE as of 9/30/19	Total Debt \$100.7 mil.	Due in 5 Yrs \$42.5 mil.	LT Debt \$58.2 mil.	LT Interest \$9.5 mil.
Pension Assets \$121.8 mil.	Oblig. \$41.5 mil.	(49% of Cost)		
Pfd Stock None	Common Stock 12,984,826 sha.	MARKET CAP: \$500 million (Small Cap)		

CURRENT POSITION (\$ MIL)	2017	2018	9/30/19
Cash Assets	4.8	4.8	4.5
Accounts Receivable	4.8	4.8	4.5
Inventory (Avg. Cost)	9	9	9
Other	3.2	3.3	4.4
Current Assets	25.8	3.0	23.9
Accts Payable	3.1	3.0	4.8
Debt Due	6.0	1.0	6.5
Other	6.0	6.8	5.8
Current Liab.	9.1	10.8	16.3

ANNUAL RATES of change (per ct)	10 Yrs	5 Yrs	10-18 to 22-24
Revenues	3.0%	3.0%	5.5%
Cash Flow	6.0%	6.0%	9.0%
Earnings	5.5%	6.5%	9.5%
Dividends	3.5%	4.0%	6.5%
Book Value	4.5%	4.9%	4.5%

QUARTERLY REVENUES (\$ mil.)	Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	11.3	11.8	12.6	11.9	47.6	
2017	11.3	12.3	12.7	12.3	48.6	
2018	11.6	12.0	12.7	12.1	48.4	
2019	11.8	13.0	13.7	13.0	51.5	
2020	12.2	13.0	14.0	13.3	52.5	

QUARTERLY DIVIDENDS PAID (\$ mil.)	Cal-ender	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	1.555	1.555	1.555	1.500	6.27	
2017	1.622	1.622	1.622	1.586	6.45	
2018	1.666	1.666	1.666	1.733	6.73	
2019	1.733	1.733	1.733	1.902	7.0	
2020						

(A) Diluted earnings. Next earnings report due late January.
 (B) Dividends historically paid in late February, June, September, and December.
 (C) In millions, adjusted for split.

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January 10, 2020 BROKERS & EXCHANGES INDUSTRY 1795

The Brokers & Exchanges Industry, as a whole, is poised to do well in the near term. The group is ranked in the upper third of the Value Line investment universe for year-ahead relative price performance. The members herein have been hard-tossed by macroeconomic headwinds. Nevertheless, we believe the financial companies' ongoing strategic growth measures and business improvements will help them brave the storm in the near term and persist over the long haul.

INDUSTRY TIMELINESS: 25 (of 95)

platforms. And within days the rest of the e-brokers cut commissions on trades. We believe this move will lead to robust customer growth, given the little-to-no barrier to entry, and enable them to better compete with the slew of zero-fee trading apps and services that have joined the market over the past few years. That said, we imagine the online brokers will now have to work harder to recoup the lost trading revenues.

The Macroeconomic Backdrop

The global markets have been quite volatile over the last several months. Trade and tariff concerns remain at the forefront of investors' minds. The United States is renegotiating agreements with its largest trading partners. The country recently redrafted its trade treaties with Canada and Mexico (replacing NAFTA). And the U.S. and China are planning to sign "Phase One" of their long-awaited trade accord in early January, but there are worries that these negotiations, and the potential of retaliatory actions, such as heavier tariffs on imported goods, could prove disruptive to the global economy.

Indeed, many have worked to improve their customers' experience. Technological investments, including product innovation, have remained key priorities. Too, some have been ramping up marketing expenditures and branding efforts to widen their client base.

This industry is no stranger to consolidation. In December, Charles Schwab and TD Ameritrade announced plans to merge. The tie-up was likely motivated by the aforementioned zero-commission move, and we expect it will serve the combined company well over the long haul.

Furthermore, several of the financial companies have been scanning the market for bolt-on acquisitions. Some may eye additions that help widen their geographic footprint or expand their market reach. Others may pursue assets that complement their rosters.

The negative currency effects have weighed on many of the exchange operators and online brokers. Too, oil prices and the energy markets have been up and down, hurting the companies herein with exposure to the commodities markets.

Conclusion

They say a rising tide lifts all boats, and while increased market uncertainty has helped bolster trading activity and benefited the Brokers & Exchanges Industry, it is often vulnerable to negative headwinds, as well.

The Federal Reserve has been pursuing an accommodative policy. The central bank lowered interest rates thrice over the course of the past year. Though lower rates generally favor consumer spending and help spur the equities markets, these moves have hurt those with larger exposures to fixed-income and interest-sensitive values.

Many of the issues herein have gained a lot of ground since our October review, and several are ranked to outpace the broader market averages in the coming year. However, these stocks' recent momentum has cut into their long-term appreciation potential.

Meanwhile, across the pond, the United Kingdom is still in the midst of disentangling itself from the European Union. And there are rising fears regarding how Brexit will reverberate across the euro zone and global markets.

Still, thanks to their long histories and stable finances, a few here possess high marks for Financial Strength and Safety. And we think these properties will help shield their stocks from some of the market volatility.

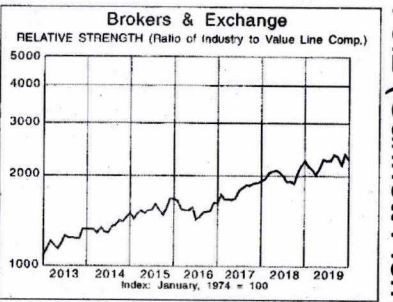
Internal Business Improvements

The companies herein have been strengthening their operations. Many have focused on increasing efficiencies, often relying on technological enhancements to improve their platforms, services, and products.

As always, we caution with painting with too broad a brush, and recommend readers evaluate each individual stock before making any capital commitments.

Orly Seidman

What's more, some of the brokers and exchange operators have used the integration of acquisitions to shore up their businesses. Cost synergies have led to greater restructuring efforts. Plus, others have used cost-cutting measures to lower operating expenses and widen margins. Likewise, a few have been streamlining their asset rosters to better focus on their more profitable business segments.



Market Competition

Both the exchange operators and online brokers run in fairly crowded spaces. Most of the companies have worked hard to differentiate themselves.

In early October, the online brokerages reached a detente in their trading fee war. Interactive Brokers led the charge, when it rolled out a new no-fee service, IBKR Lite. And Charles Schwab soon followed, by eliminating all fees on stock and ETF trades on its online and mobile

Company's Financial Strength	B+
Stock's Price Stability	B0
Price Growth Persistence	B0
Earnings Predictability	B0

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EXHIBIT 20 Appendix A-5.2 (Gannett Financial)

Company Name AMERICAN AMERICAN ARTESIAN I CALIFORNI. ESSENTIAL MIDDLESEX SJW GROU THE YORK I

2014 Sales-Net[y14]	465.791	3011	72.465	597.499	779.903	117.139	319.668	45.9
2015 Sales-Net[y15]	458.641	3159	77.024	588.368	814.204	126.025	305.082	47.089
2016 Sales-Net[y16]	436.087	3302	79.089	609.37	819.875	132.906	339.706	47.584
2017 Sales-Net[y17]	440.603	3357	82.235	676.113	809.525	130.775	389.225	48.589
2018 Sales-Net[y18]	436.816	3440	80.411	698.196	838.091	138.077	397.699	48.437
2019 Sales-Net[y19]	473.869	3610	83.595	714.557	889.692	134.598	420.482	51.578
2014 Cash & Short Term Investment	75.988	23	0.243	19.587	4.138	2.673	2.399	1.488
2015 Cash & Short Term Investment	4.364	45	0.209	8.837	3.229	3.469	5.239	2.879
2016 Cash & Short Term Investment	0.436	75	0.226	25.492	3.763	3.879	6.349	4.209
2017 Cash & Short Term Investment	0.214	55	0.952	94.776	4.204	4.937	7.799	0.002
2018 Cash & Short Term Investment	7.141	130	0.293	47.176	3.627	3.705	420.722	0.002
2019 Cash & Short Term Investment	1.334	60	0.596	42.653	1868.922	2.23	12.944	0.002
2014 Current Assets-Total[y14]	209.451	575	16.648	154.124	152.522	22.864	68.093	11.233
2015 Current Assets-Total[y15]	132.697	657	14.444	127.578	128.37	24.41	73.376	11.577
2016 Current Assets-Total[y16]	166.875	784	14.635	142.069	128.65	26.716	99.611	12.62
2017 Current Assets-Total[y17]	155.463	720	18.985	227.873	131.246	29.247	66.858	8.611
2018 Current Assets-Total[y18]	131.468	781	16.118	188.702	147.172	30.815	502.722	9.011
2019 Current Assets-Total[y19]	122.456	1285	14.207	184.712	2012.738	29.133	122.046	9.384
2014 Debt in Current Liabilities[y14]	0.292	511	19.877	85.722	77.013	24.91	13.784	0.043
2015 Debt in Current Liabilities[y15]	28.312	682	12.322	39.658	52.314	8.739	38.091	0.044
2016 Debt in Current Liabilities[y16]	90.33	1423	8.478	123.308	169.822	18.159	14.325	0.044
2017 Debt in Current Liabilities[y17]	59.324	1230	11.258	291.02	139.048	34.865	25	1.044
2018 Debt in Current Liabilities[y18]	40.32	1049	17.784	170.011	228.723	55.843	100	1.03
2019 Debt in Current Liabilities[y19]	7.193	824	9.24	198.42	142.941	27.178	139.481	6.5
2014 Current Liabilities-Total[y14]	99.29	1241	30.192	217.706	225.335	43.872	44.694	5.93
2015 Current Liabilities-Total[y15]	123.507	1533	22.403	147.898	193.199	28.319	79.623	6.197
2016 Current Liabilities-Total[y16]	177.944	2392	19.328	250.23	301.536	47.056	63.573	8.184
2017 Current Liabilities-Total[y17]	156.662	2325	28.461	490.959	284.488	64.537	85.052	9.145
2018 Current Liabilities-Total[y18]	146.585	2094	37.731	321.166	398.977	94.363	163.985	10.841
2019 Current Liabilities-Total[y19]	115.998	2045	25.599	358.721	318.849	64.981	234.567	15.156
2014 noncash wkcap	34.465	-178	6.09	2.553	0.062	1.229	34.784	3.858
2015 noncash wkcap	33.138	-239	4.154	10.501	-15.744	1.361	26.605	2.545
2016 noncash wkcap	78.825	-260	3.559	-10.345	-6.827	-22.577	99.403	8.455
2017 noncash wkcap	57.911	-430	0.83	-66.842	-18.398	-5.362	-0.993	0.508
2018 noncash wkcap	18.062	-394	-4.122	-9.629	-26.709	-11.41	18.015	-0.802
2019 noncash wkcap	12.317	4	-2.748	-18.242	-32.092	-10.9	14.016	0.726
2015 Change Non cashWrk Cap	-1.327	-61	-1.936	7.948	-15.806	0.132	-8.179	-1.313
2016 Change Non cashWrk Cap	45.687	-21	-0.595	-20.846	8.917	-23.938	72.798	5.91
2017 Change Non cashWrk Cap	-20.914	-170	-2.729	-56.497	-11.571	17.215	-100.396	-7.947
2018 Change Non cashWrk Cap	-39.849	36	-4.952	57.213	-8.311	-6.048	19.008	-1.31
2019 Change Non cashWrk Cap	-5.745	398	1.374	-8.613	-5.383	0.51	-3.999	1.528
2015 WK cap/sale	-0.29%	-1.93%	-2.51%	1.35%	-1.94%	0.10%	-2.68%	-2.79%
2016 WK cap/sale	10.48%	-0.64%	-0.75%	-3.42%	1.09%	-18.01%	21.43%	12.42%
2017 WK cap/sale	-4.75%	-5.06%	-3.32%	-8.36%	-1.43%	13.16%	-25.79%	-16.36%
2018 WK cap/sale	-9.12%	1.05%	-6.16%	8.19%	-0.99%	-4.38%	4.78%	-2.70%
2019 WK cap/sale	-1.21%	11.02%	1.64%	-1.21%	-0.61%	0.38%	-0.95%	2.96%
Median	-1.21%	-0.64%	-2.51%	-1.21%	-0.99%	0.10%	-0.95%	-2.70%
						Median		-1.10%