

**Application of Pennsylvania-American Water Company for Acquisition of
the Wastewater Assets of Upper Pottsgrove Township
66 Pa. C.S. § 1329
Application Filing Checklist – Water/Wastewater
Docket No. A-2020-3021460**

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

RESPONSE: See enclosed appraisals performed by Jerome C. Weinert, P.E., Principal and Director for AUS Consultants on behalf of PAWC at **Appendix A-5.1** and by Harold Walker III, Manager – Financial Studies for Gannett Fleming on behalf of Upper Pottsgrove at **Appendix A-5.2**.

UPPER POTTSGROVE TOWNSHIP
WASTEWATER SYSTEM ASSETS

FAIR MARKET VALUE APPRAISAL

AT

AUGUST 31, 2020

Prepared by:

GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC



Valley Forge, Pennsylvania



*Excellence Delivered **As Promised***

October 20, 2020

Via email to manager@uptownship.org

Ms. Michelle L. Reddick
Township Manager
Upper Pottsgrove Township
1409 Farmington Avenue
Pottstown, PA 19464-1829

Re: Fair Market Value Appraisal

Dear Ms. Reddick:

In accordance with your request, we have prepared a fair market value appraisal of the Upper Pottsgrove Township's wastewater system assets ("Wastewater System") as of August 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 Wastewater System as of August 31, 2020 is \$17,617,000 (rounded).

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

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

Gannett Fleming Valuation and Rate Consultants, LLC

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Ms. Michelle L. Reddick
Pottstown, PA 19464

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October 20, 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	\$18,984,989
Income Approach	18,849,576
Market Approach	15,024,830

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

Respectfully Submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC



HAROLD WALKER, III
Manager, Financial Studies

HW:amp

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INTRODUCTION

Introduction and Summary. The following narrative report presents our findings and conclusions regarding the fair market value of the wastewater system assets of Upper Pottsgrove Township as of August 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 Upper Pottsgrove Township's wastewater system assets is \$17.6 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 \$15.0 million to \$19.0 million. However, most of the appropriate indicated values approximated \$17.6 million.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by Upper Pottsgrove Township ("Township") to estimate the fair market value of Upper Pottsgrove Township's wastewater system assets ("Wastewater System") as of August 31, 2020.

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

¹ The International Glossary of Business Valuation Standards

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As stated, the standard of value for this engagement is fair market value. The premise of value is the going concern. The going concern premise of business value assumes that the business will continue running normally using all of its assets to produce income and will continue operating beyond the valuation date.

We valued the Wastewater System's assets as a group under the premise that the assets collectively comprise an ongoing operating business enterprise. Additionally, in accordance with 66 Pa. C.S. Section 1329 the original source of funding for any part of the Wastewater System's assets was not relevant to the determination of the value of said assets.

Intended Use of the Valuation. The intended use of the valuation is to comply with 66 Pa. C.S. Section 1329, Valuation of Acquired Water and Wastewater Systems and conduct a fair market value appraisal of the Wastewater System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches.

Client and Users. The client is Upper Pottsgrove Township. The intended users of the valuation are the Township, Pennsylvania American Water Company, Inc. ("PAWC") and the Pennsylvania Public Utility Commission ("PUC").

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 Upper Pottsgrove 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

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and marketable, no hidden defects in the property or soil and no hazardous conditions or materials exist which could affect the assets.

Site Inspection. We viewed or observed the Wastewater System's facilities on September 23, 2020. We also relied on engineering assessment of the Wastewater System's facilities report, "Engineering Assessment Study of Upper Pottsgrove Township's Wastewater System Assets" and related files prepared by LTL Consultants and AUS Consultants, to confirm the condition of the Wastewater System's property and equipment.

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

Engineer's assessment report "Engineering Assessment Study of Upper Pottsgrove Township's Wastewater System Assets" and related files prepared by LTL Consultants and AUS Consultants;

Township provided electronic files (PDF and Excel);

Wastewater System's Customer data;

Wastewater System's Fee Schedule;

Wastewater System's 537 Plan;

Wastewater System's Sewage Treatment Agreement;

Asset Purchase Agreement;

Upper Pottsgrove Township's Audited Financials (2016 - 2019);

Upper Pottsgrove Township's Budgets for Wastewater System (2019 - 2020);

Blue Chip Financial Forecasts;

US Census Bureau, various data files;

Value Line Investment Survey; and

S&P Capital IQ.

Description of Upper Pottsgrove Township. The Township is located in western Montgomery County in southeastern Pennsylvania. It is immediately north of the Borough of Pottstown and east of Berks County. The Township is bounded by several Montgomery County townships, including Lower Pottsgrove to the southeast, West Pottsgrove to the southwest, Douglass to the northeast, and New Hanover to the east. The Township is the 36th largest land mass of Montgomery County's 62 municipalities and was the 39th most populous with 5,483 people (2015) and 1,963 housing units (2015). The Township consists of 5.1 square miles and lies approximately 40 miles northwest of Philadelphia and 20 miles southeast of Reading, Pennsylvania. According to U.S. Census figures, the Township's population grew 29.6% from 2000 to 2010, while population in Pennsylvania grew 3.4% and 6.6% in Montgomery County.

Description of the Wastewater System. The Township owns and operates the Wastewater System which consists of four pump stations, about 18,102 linear feet of force mains, approximately 102,252 linear feet of gravity sewer collection mains, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows to an interceptor for treatment at the Pottstown Borough Authority Sewage Treatment Plant for which the Township has purchased capacity. The average annual flow for the Township in 2018 was 0.444 MGD.

The Wastewater System's four pump stations are Pine Ford Road, Regal Oaks, Hollyberry Court and Evans Road. The Wastewater System collection system has approximately three miles of force mains. About 55% of the force mains installations occurred in the 2010s and earliest installation was 1986. The force mains materials are polyvinyl chloride ("PVC") and ductile iron ("DIP").

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The Wastewater System has approximately 19 miles of gravity collectors and interceptors ranging in size from 6 to 18 inches diameter. About 54% of the gravity mains installations occurred in the 2000s and 2010s. The gravity mains materials are PVC, vitrified clay, and DIP and there are 534 manholes.

The Township utilizes one enterprise fund to account for the Wastewater System's operations. The Township's audited financial statements reflect the use of the modified cash basis of accounting and provide limited information for the Wastewater 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 revenues and operating expenditures for the Wastewater System, do not report plant, assets, capitalization, depreciation nor capital expenditures for the Wastewater System and therefore, provide limited information for the Wastewater System. For the year ended December 31, 2019, (shown on Exhibit 1) the Wastewater System had reported revenues of \$1.380 million and expenses of \$0.355 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 Wastewater System. The Wastewater System debt shown on Exhibit 1 was calculated by adding the annual debt principal repayments to the 12/31/19 balance of debt attributed to the Wastewater System.

The Wastewater System is exempt from PUC regulation as a municipal utility. The Wastewater System's rate requirements are established by the needed funds to run the system.

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

As shown on Exhibit 2, the Wastewater System provides service to 1,428 customers. The Wastewater System had average daily flows of 0.444 MGD (2018) and serviced approximately 1,573 Equivalent Dwelling Units (“EDU”).

Demographics and Growth for the Wastewater System. As shown on Exhibit 3, Table 3.1, according to U.S. Census figures, the U.S. population grew 9.7% from 2000 to 2010, and the population in Pennsylvania grew 3.4%. During this same period, Montgomery County’s population grew 6.6% and the Township’s population grew 29.6% (Exhibit 3, Table 3.2). The Township’s population growth was ranked 123 of the 2,572 municipalities in Pennsylvania.

The Census Bureau and planning agencies provide population projections for future time periods. Population projections are a primary indicator of expected future growth, and they help determine predictable demand for utility services, housing, roads, business services and facilities. The Delaware Valley Regional Planning Commission (“DVRPC”) publishes population

projections and employment projections for 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 277% 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 87 percent or 87th 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 146% 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 5,530 people (Exhibit 2) in the Wastewater System’s service area. There are 2,037 housing units in the Wastewater System’s service area, and the ratio of people in households to households is 2.71 persons per household. The Wastewater System’s service area density is 3.9 people per customer based on an estimated population of 5,530 and 1,428 customers. The Wastewater 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 (August 31, 2020) is the specific date at which the value of the Wastewater System is based. Generally, only the circumstances existing at the valuation date and events occurring up to the valuation date are considered. Events which could

affect the value may occur 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 Wastewater 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 Wastewater System assets will provide service for decades.

Moreover, the Wastewater 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 Wastewater 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 August 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 August 31, 2020. In particular, we focused on the forecasts and economic

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commentary presented in Blue Chip Financial Forecasts in the August 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>2Q 2020</u>	<u>3Q 2020</u>	<u>4Q 2020</u>
<u>Key Assumptions</u>			
Real GDP	-32.9	18.4	6.7
GDP Price Index	-1.8	1.5	1.3
Consumer Price Index	-3.5	2.5	1.7
<u>Interest Rates</u>			
3-mo. Treasury Bills	0.14	0.1	0.2
10 Year Notes	0.69	0.7	0.8
30 Year Notes	1.38	1.4	1.5
Aaa Corporate Bond Yield	2.81	2.4	2.5
Baa Corporate Bond Yield	3.67	3.6	3.7
State & Local Bonds	3.28	2.5	2.5
Home Mortgage Rate	3.23	3.1	3.1

Table 1

Industry Review. A review of the industry in which the company operates is important in determining value. The trends and stability of the specific economic environment affecting operations need to be reviewed to gain further insight regarding the prospects and risks associated with the industry and each company.

The wastewater utility industry has a Standard Industrial Classification ("SIC") code of 4952 (Sewerage Systems), has sewer utilities, and includes establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided. There are currently 2,154 U.S. Businesses with a SIC code of 4952.

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The wastewater utility industry is a fragmented industry, although not as fragmented as the water supply industry. According to the U.S. Environmental Protection Agency's ("EPA") most recent survey of publicly-owned wastewater treatment facilities in 2012, there are approximately 15,000 such facilities in the nation, serving approximately 76% of the U.S. population. Eighty percent of domestic wastewater systems are government owned rather than IOUs. Currently, there are no wastewater utility companies that have actively traded stock.

A comparative industry to the wastewater utility industry is the water supply industry. A comparative industry to the wastewater utility industry is the water supply industry. The water utility industry has a Standard Industrial Classification ("SIC") code of 4941 (Water Supply), has water utilities, and includes establishments primarily engaged in distributing water for sale for residential, commercial, and industrial uses. Government controlled establishments such as municipal service districts and public utilities dominate the industry. Private companies or IOUs are active in the construction and improvement of water supply facilities and infrastructure. There are currently 11,014 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 (August 31, 2020), there are only about nine investor owned water utility companies with publicly traded stock in the U.S.

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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 requirements² and to replace the aging infrastructure of many systems, has moved the wastewater and water

² 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 wastewater system, the Wastewater 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 Wastewater System, and a group of companies (“Comparable Group”) that operate in the same basic or similar industry as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Wastewater System. We list the Comparable Group chosen for study in Table 2.

The companies in the Comparable Group were selected based upon: (1) the availability of financial information; (2) inclusion in the S&P Capital IQ database; (3) an August 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) an August 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 August 31, 2020; (6) with a Standard Industrial Classification (SIC) of 4941 (i.e., Water Supply Facilities and Infrastructure) and (7) with a North American

Appendix A-5.2 (Gannett)

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>
Upper Pottsgrove Township Wastewater System Assets	<u>\$1.380</u>	<u>1,428</u>	<u>5,530</u>	<u>3.9</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 Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike. Table 2 presents comparative statistics regarding total revenues, customers, population of the area served, and customer density (population ÷ customers). On average, the Comparable Group are larger than the Wastewater System. The relative size difference between the group and the Wastewater System suggests that the risk of the Wastewater System is greater than the Comparable Group. We will discuss the difference in risk resulting from size later in this report.

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Financial Review. We conducted a financial review that considered the financial and operating statistics for the Wastewater System and the Comparable Group for the three-year period, 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 Wastewater System. However, consideration must be given to the fact that no two companies are exactly alike.

The determination of reasonable water rates and sewer rates for the Comparable Group is subject to rate regulation. For the Comparable Group, rate regulation serves as a substitute for competition in the marketplace since utility companies are precluded from exercising complete control over the price to be charged their customers. Under rate regulation, a cost of service formula is used to set the price for service charged to customers. The cost of service formula equates revenues to the sum of annual operating expenses, taxes other than income, depreciation expense, income taxes, and the product of the rate base times a fair rate of return.

It is the responsibility of the utility seeking changes in rates to present sufficient evidence to their regulators in support of their request. Historically, the Wastewater System's rates have not considered a fair rate of return nor taxes. That is, the Wastewater System's rates would have been higher and their financial results would have been healthier if they included a provision for a fair rate of return and taxes. Additionally, after comparing the Wastewater System's historical financial performance to budgeted numbers we believe the Wastewater System's historical financial performance (pre-transfers) do not include all salary, wage and benefits expenses. Therefore, the results of the Wastewater System's historical financial performance shown on Exhibits 4 and 6 should be viewed with this knowledge.

Financial Benchmark Analysis. To gain insight into the risk differences between the Wastewater System and the Comparable Group, we reviewed financial ratios and coverages.

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Unfortunately, there is no single measure that best indicates investment risk from an investor's perspective. However, from a creditor's viewpoint, the best measure of investment risk is debt rating. The debt rating process generally provides a good measure of investment risk for common stockholders because the factors considered in the debt rating process are usually relevant factors that a common stock investor would consider in assessing the risk of an investment.

The types of financial benchmarks applied by credit rating agencies such as Standard and Poor's ("S&P") for rating IOU public utility debt are broader than the traditional measure of financial risk, leverage. Besides reviewing the amounts of leverage employed (i.e., percentage of debt used in the capital structure), S&P also focuses on earnings protection and cash flow adequacy. During the period 2017-2019, the Wastewater System's financial benchmark ratios show (Exhibit 4) higher investment risk than the Comparable Group based on coverage and cash flow.

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

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

As mentioned previously, size is a determinant of risk. Based on size, the Wastewater System's risk is higher than the Comparable Group given Wastewater System's relatively small size. Table 2 details the size difference between the Wastewater System and the Comparable Group. As shown on Table 2, the Wastewater System is many times smaller than the Comparable Group.

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Size is a determinant of risk because the loss of a large customer impacts a small company much more than a large company because a large customer of a small company usually accounts for a larger percentage of the small company's sales. Further, a larger company has much more diversification in customer mix, economic conditions, source of supplies, weather, demographic, and financing than the Wastewater System. Because the larger Comparable Group has a more diverse geographic operation than the Wastewater System, it enables them to sustain earnings fluctuations caused by adverse weather conditions in one portion of its service territory. Further, the larger Comparable Group has a more diverse customer base and is less susceptible to local downturns associated with regional economic conditions than the Wastewater System.

Exhibit 5, Table 5.1, provides an illustration which shows company size has been inversely related to returns and the volatility of their common stock. Specifically, Ibbotson Associates sorted 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 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 August 31, 2020 ranged from \$329 million to \$25,611 million as shown on Table 5.2 of Exhibit 5. Based on their market value, the Comparable Group's median market quartile was 3. Wastewater System's market value would place them in quartile 4 based upon Wastewater System's financial statements and since the largest company in quartile 4 on Table 5.1 had a market value of \$728 million.

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The change in risk adjusted common stock return rate between quartile 3 and quartile 4 (column J) is 97 basis points. The results of the illustration shown on Exhibit 5 suggests the Wastewater System's common equity cost rate could be about 97 basis points higher than the Comparable Group. The history of common stock returns indicates small company stocks are riskier than large company stocks because as one moves from the larger to smaller quartiles, the standard deviation (a measure of risk) of returns increases. Historically, common stock investors have been compensated for taking on this additional risk by the higher returns provided by small company stocks.

In general, it is reasonable to expect small companies to be more risky than large ones. Exhibit 5 shows small company stocks have been riskier over a long period of time than larger company stocks due to the various advantages that larger companies have over smaller companies. For example, small capitalized firms generally have less access to capital and, overall, not as many financial resources. Further, small capitalized stocks have lower trading liquidity than larger ones.

The bond market, particularly the corporate bond market, also differentiates between large and small bond issues, where many large institutional investors such as pension funds and insurance companies require large blocks of bonds for liquidity and performance. Because of this size preference, smaller bond issuers often pay a cost rate premium when compared to larger bond issuers.

A higher return requirement for companies the size of Wastewater System translates into a higher capitalization rate. All else being equal, a higher capitalization rate will produce a lower value. However, all things are seldom equal as shown by the array of market multiples for the companies that comprise the Comparable Group (Exhibit 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 Wastewater System can best be characterized as a wastewater collection system with treatment rights. The Wastewater System does not have the number of large treatment facilities that the Comparable Group has. The Wastewater System's gross property, plant and equipment is in relatively good condition given its age (Exhibit 6, Table 6.1) with 76% of their gross property, plant and equipment remaining undepreciated while 77% of the Comparable Group's gross property, plant and equipment remained undepreciated.³

Property Plant and Equipment Analysis for Contributions. Most regulatory commissions determine rates for utilities based on a cost of service formula reflective of gross plant, property and equipment less accumulated depreciation (i.e., net property, plant and equipment) being roughly equal to investor provided capital (i.e., debt and equity capital) plus "cost free" capital such as customer contributions. Under 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Wastewater Systems), the original source of funding for any part of the assets of a selling utility is not relevant to determining the value of a selling utility's assets.

We found a 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

³ The Wastewater System's gross and net property, plant and equipment is developed on Exhibit 7.

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 Wastewater System’s property, plant and equipment for “cost free” capital, or customer contributions, because the original source of funding for any part of the assets of a selling utility is irrelevant to the valuation process under 66 Pa. C.S. Section 1329.

Capital Expenditures Analysis. The level of capital expenditures required for business purposes is an indicator of risk. Over the last four years, the Comparable Group had annual capital expenditures of about 9% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2016-19, net plant was not reported for the Wastewater System in their financial statements. 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 the Wastewater System’s revenues have been growing less than the Comparable Group (Exhibit 6, page 4, Table 6.4) over the last three years, as has operating income plus depreciation and operating income. Prospectively, the Wastewater 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

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.

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Wastewater System's management has been at generating income from the operation of the business. We also compared operating profitability or earnings before interest, tax, depreciation and amortization ("EBITDA") divided by total revenue to gain a clearer view of the Wastewater System's core profitability. The Wastewater System's EBITDA profit margins are higher than the Comparable Group's as are the EBIT profit margins indicating less risk (Exhibit 6, page 5, Table 6.5).

VALUATION

The purpose of this valuation is to comply with 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Water Systems) and conduct a fair market value appraisal of the Wastewater System's assets as of August 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 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

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

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

The reproduction cost method begins with determining the reproduction cost new ("RPCN") by determining the current cost of constructing identical new property. The replacement cost method begins with estimating the replacement cost new ("RCN") based on approximating the current cost of replacing service of existing property with similar new property having the nearest equivalent utility to the property being valued (as defined by the *International Glossary of Business Valuation Terms*).

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

construction, and entrepreneurial 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. 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

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.

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 "Engineering Assessment Study of Upper Pottsgrove Township's Wastewater System Assets" and related files prepared by LTL Consultants and AUS Consultants, to confirm the condition of the Wastewater System's property and equipment. We utilized the Engineering Assessment and calculated the Original Cost and Related Accrued Depreciation of the Wastewater System as of August 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 Wastewater System as of August 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 Wastewater System was determined from the Engineering Assessment and is summarized on page 2 of Exhibit 7. A summarizing analysis of the original cost of the Wastewater System by account and vintage year is shown on Exhibit 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 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 Wastewater System's

utility plant in service as of August 31, 2020 was not less than \$15.3 million (\$15,295,347 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$3.7 million (\$3,746,450 rounded) as of August 31, 2020. After factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Wastewater System's utility plant in service as of August 31, 2020 was determined to be \$11.5 million ($\$15,295,347 - \$3,746,450 = \$11,548,897$).

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 Wastewater System as of August 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 Wastewater System as of August 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 Wastewater System (see Exhibit 10) was calculated by trending 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 Wastewater 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

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.

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

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life procedure was used to apply the methods of depreciation to group properties for which a survivor curve was used to recognize the existence of life dispersion. The detailed calculations of accrued depreciation applicable to replacement cost new by account and vintage are included in Exhibit 11.

The results of the RCNLD Study established that the RCN of the Wastewater System's utility plant in service as of August 31, 2020 was not less than \$26.8 million (\$26,750,022 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$7.8 million (\$7,765,033 rounded) as of August 31, 2020. After factoring in the RCNLD Study's accrued depreciation reserve, the RCNLD of Wastewater System's utility plant in service as of August 31, 2020 was determined to be \$19.0 million ($\$26,750,022 - \$7,765,033 = \$18,984,989$).

The results of the OCNLD and RCNLD Cost Approaches show a range of value for the Wastewater System of \$11.5 million to \$19.0 million and collectively, indicated value of \$19.0 million (\$18,984,989 rounded) for the Wastewater System based on the results of the RCNLD.

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 1.84-times (Exhibit 17, page 2) their OCNLD or net property, plant and equipment. Similarly, the Comparable Group's Enterprise Value is currently 1.47-times (Exhibit 17, page 2) their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" understate the multiple

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applicable to the Wastewater System because some of the Comparable Group's property, plant and equipment includes assets that were originally financed with "cost free" capital such as customer contributions.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 1.94-times OCNLD and 1.55-times OCN for the Comparable Group.

Multiplying the Wastewater System's OCN of \$15.3 million by the Comparable Group's 1.47-times OCN multiple or the 1.55-times contributions adjusted OCN multiple indicates a range of market value of \$22.5 million to \$23.7 million for the Wastewater System, similar to the RCNLD of \$19.0 million. Further, multiplying the Wastewater System's OCNLD of \$11.5 million by the Comparable Group's 1.84-times OCNLD multiple or the 1.94-times contributions adjusted OCNLD multiple indicates a range of market value of \$21.2 million to \$22.3 million for the Wastewater System, similar to the RCNLD of \$19.0 million.⁹ The aforementioned range of market values for the Wastewater System are not a substitute for an appraisal. However, the referenced range of market values for the Wastewater System can be a meaningful metric to evaluate the reasonableness of other indication of value produced by other valuation methods.

Comparing the results of the OCNLD method and RCNLD method to the benchmark metrics indicates that the value indicated by the OCNLD method of \$11.5 million is inconsistent with the benchmark metrics. Therefore, the results of \$19.0 million RCNLD method form the

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.

⁹ Similarly, multiplying the Wastewater System's number of customers of 1,428 by the Comparable Group's \$10,104-times customer multiple indicates a market value of \$14.4 million, similar to the RCNLD of \$19.0 million.

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basis for our Cost Approach conclusion of \$19.0 million (\$18,984,989 rounded) and is used as the Cost Approach as part of our fair market value determination for the Wastewater 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.

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 Wastewater System, the appropriate discount rate is the current

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municipal revenue bond yield on August 31, 2020 of 3.35%. The appropriate IOU discount rate is the current net of tax overall cost of capital (weighted average cost of capital) on August 31, 2020 and ranges from 5.91% to 7.10%.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 Wastewater System as it is currently owned (i.e., non-IOU) and operated. However, change in ownership of the Wastewater 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 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, 3.35%, 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, 3.35%, at the valuation date is used in accordance with accepted valuation practices

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.”

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).

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), 5.91% to 7.10% (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 26.0% debt and 74.0% equity, a market cost of debt of 2.90% and a range of market cost of equity of 7.26% to 8.86%.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

We began the Income Approach for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized or discounted. The Debt Free Net Cash Flow is comprised of EBIT, minus income taxes, plus depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. The development of Wastewater System's Debt Free Net Cash Flow begins on Exhibit 1 and ends on Exhibits 12 through 16.

Differences in accounting practices exist between GASB, DCED and FASB because there are differences in their purpose. The GASB's and DCED's impetuses are to make sure government entities are accountable for the money they receive from the public or taxpayers, while

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 6.04% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation because a "hypothetical buyer" cannot finance an acquisition at such a rate and therefore, its use would provide a meaningless result. Where the 6.04% DSIC related cost was determined based the Comparable Group's book value capital structure of 49.4% debt and 50.6% equity, a cost of debt of 2.90% and a DSIC cost of equity of 9.90%. We note the 6.04% Comparable Group's DSIC related net of tax overall cost of capital falls within the 5.91% to 7.10% range of discount rates used in our Income Approach.

the FASB's focus is to help investors and creditors make decisions. These differences in accounting objectives between GASB, DCED and FASB can present a problem when it comes to comparing the financial statements of entities that are either publicly or privately owned, such as the Wastewater System and the Comparable Group.

Exhibit 1 presents the Wastewater System's financial information contained in their financial statements, so it is more consistent with the Comparable Group and more practical for valuation purposes. The information on Exhibit 1 was used to develop Exhibits 12 through 16. As noted previously, the Wastewater System's financial statements and their rates did not include taxes, a fair rate of return, nor complete salary, wages or benefits. Accordingly, on Exhibits 13 through 16 we adjusted the Wastewater System's post-2020 financial information for pro forma expenses and returns to be reflective of a MUNI or IOU ownership.

The Capitalization of Earnings Method. The capitalization of earnings method begins with an estimate of the income or cash flow producing capabilities of the business (Exhibit 12) for a recent time period and assumes current ownership and operations. We began the capitalization of earnings method for the Wastewater System by first determining the Debt Free Net Cash Flow to be capitalized. The Debt Free Net Cash Flow is comprised of current EBIT, minus income taxes, plus current depreciation and amortization, plus or minus projected changes in net cash working capital, less projected capital expenditures. Specifically, our capitalization of earnings method capitalizes Wastewater 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 August 31, 2020 of 3.35% (Exhibit 12, line 24) as a capitalization rate. We also did a second capitalization of earnings calculation based on a 3.15% capitalization rate (Exhibit 12, line 27), or 20-basis points

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below the current level to reflect the unique population growth projected for the Wastewater System's because we assumed the Wastewater System's Debt Free Net Cash Flow growth will be at least 0.2% (20-basis points).

We computed the Wastewater System's indicated value based on the capitalization of earnings method by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow. We considered two ranges of growth in the capitalization of earnings method, no growth and 0.2% growth. However, based upon our quantitative and qualitative analysis, and the projected population growth, we believe the 0.2% growth scenario is the most probable for the Wastewater System based on current ownership and operations.

We adjusted the Wastewater System's Debt Free Net Cash Flow (Pro Forma column Exhibit 12, line 23) to account (subtract) for the average capital additions of \$422,129 if system is not sold.¹⁴ Exhibit 12 shows the results of the capitalization of earnings method. For the Wastewater System, the capitalization of earnings method using a 3.35% capitalization rate (no growth) indicates a value of \$22.3 million (without rate increases) and \$9.8 million (without rate increases) on pro forma 2020 results. The capitalization of earnings method using a 3.15% capitalization rate (growth) indicates a value of \$23.8 million (without rate increases) and \$10.4 million (without rate increases) on pro forma 2020 results. Collectively, for Wastewater System, we believe the 0.2% growth scenario is the most probable result based on current ownership and operations and therefore, the capitalization of earnings method suggests a value of \$10.4 million (without rate increases) based on pro forma 2020 results.

¹⁴ The capital expenditures of \$422,129 utilized is the 2017-2020 average additions in the asset inventory for existing assets.

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The DCF Method. For the Wastewater System, the DCF method considers two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model (“Market Multiple DCF”) and the capitalization of terminal value model (“Capitalization DCF”). We show the results of these models on Exhibits 13 through 16.

The DCF method begins with an estimate of the income or cash flow producing capabilities of the business. Specifically, our DCF methods use estimates of the results of the Wastewater System’s operations over the next 24 years. We use two different assumptions for the Wastewater System’s future operations in the DCF methods: MUNI ownership shown on Exhibits 13 and 15; and IOU ownership shown on Exhibits 14 and 16.

Under the MUNI ownership the discount rate is the current 3.35% 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 5.91% to 7.10%. 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 Wastewater System’s projected EBIT and EBITDA by the Comparable Group’s adjusted multiples of 23.8-times and 15.7-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.

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Exhibit 13 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 13 show a range of value for the Wastewater System of \$18.8 million to \$19.3 million. The results of the Market Multiple DCF shown on Exhibit 13 show a value of \$17.6 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$18.5 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 14 shows the results of the DCF method under the IOU ownership scenario. The results of the Capitalization DCF shown on Exhibit 14 show a range of value for Wastewater System of \$9.3 million to \$11.4 million. The results of the Market Multiple DCF shown on Exhibit 14 show a range of value of \$11.9 million to \$14.1 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of indicates a value of \$11.7 million for the Wastewater System.¹⁵

The DCF method based on the MUNI ownership scenario indicates a value of \$18.5 million and the DCF method based on the IOU ownership scenario indicates a value of \$11.7 million. Collectively, the DCF method indicates a value of \$15.1 million based on OCNLD.

Change in ownership of the Wastewater System to a MUNI or an IOU produces a myriad of problems for the DCF Method. Under a MUNI purchase, future cash flow estimates are uncertain because they would reflect the actual price paid for the acquisition. Under an IOU purchase and the associated regulation by the PUC, future cash flow estimates are uncertain since

¹⁵ If we used the 6.04% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 14, the results of the Capitalization DCF would show a value for Wastewater System of \$11.0 million. Further, the results of the Market Multiple DCF would show a value of \$13.8 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicate a value of \$12.5 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of \$18.5 million and the DCF method based on the IOU ownership scenario indicates a value of \$12.5 million. Collectively, the DCF method indicates a value of \$15.5 million based on OCNLD.

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

Therefore, Exhibits 13 and 14 are recalculated on Exhibits 15 and 16 to reflect revenues and cash flows derived from an earnings base between 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 Wastewater System of \$21.0 million to \$21.7 million. The results of the Market Multiple DCF shown on Exhibit 15 show a value of \$20.5 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$21.1 million for the Wastewater System based on the 0.2% growth assumption.

Exhibit 16 shows the results of the DCF method under the IOU ownership. The results of the Capitalization DCF shown on Exhibit 16 show a range of value for Wastewater System of \$13.2 million to \$16.2 million. The results of the Market Multiple DCF shown on Exhibit 16 show a range of value of \$17.1 million to \$20.3 million. Collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption indicates a value of \$16.6 million for the Wastewater System.¹⁶

¹⁶ If we used the 6.04% Comparable Group's DSIC (distribution system improvement charge) related net of tax overall cost of capital in our valuation shown on Exhibit 16, the results of the Capitalization DCF would show a value for Wastewater System of \$15.7 million. Further, the results of the Market Multiple DCF would show a value of \$19.9 million and collectively, the DCF method based on the IOU ownership scenario and a 0.2% growth assumption would indicate a value of \$17.9 million for the Wastewater System. The DCF method based on the MUNI ownership scenario indicates a value of \$21.1 million and the DCF method based on the IOU ownership scenario using DSIC indicates a value of \$17.9 million. Collectively, the DCF method indicates a value of \$19.5 million when DSIC is considered.

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The DCF method based on the MUNI ownership scenario indicates a value of \$21.1 million and the DCF method based on the IOU ownership scenario indicates a value of \$16.6 million. Collectively, the DCF method indicates a value of \$18.8 million based on the Income Approach.

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

The Market Multiples Method. The market multiples method valuation begins by reviewing market price data of corporations engaged in the same or a similar line of business as the Wastewater System. We relied upon market data for the Comparable Group for these purposes since they are equally affected by similar economic, industry, and business risks as the Wastewater System. Since no marketplace exists for the common stock of the Wastewater System, an alternative to estimate the value of the Wastewater System is to analyze the price investors are willing to pay for the publicly traded common stock of companies that are similar to the Wastewater System. The specific market price data reviewed includes the market value of common equity plus minority interest, preferred stock, and total debt net of cash and cash equivalents (i.e., Enterprise Value). Where the market value of common equity is the product of multiplying the closing stock price by the number of common shares outstanding. The Enterprise Value provides an indication of the value of the entire business. The Enterprise Value multiples (“Market Multiples”) are shown on Exhibit 17. For the Comparable Group, the Market Multiples were calculated as of August 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 August 31, 2020 and calculated Market Multiples of: revenue (“Revenue”); EBITDA; EBIT; gross property plant and equipment

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(“GPPE”); net property plant and equipment (“NPPE”); investor provided capital (“ICAP”); utility customers (“Customers”); and population of the area served (“Population”).

The next step in the market multiples method valuation was applying the Comparable Group’s Market Multiples to corresponding financial and operating statistics of the Wastewater System. The Comparable Group’s Market Multiples reflect their capitalization rate of each financial and operating statistic. For example, a Market Multiple of EBIT of 16.14 times equates to a capitalization of EBIT of 6.20% ($1 \div 16.14 = 6.20\%$). Each capitalization rate is unique to the entity and the statistic being evaluated and reflects the growth and investment risk of the entity.

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

Accordingly, the Comparable Group’s Market Multiples are not directly applicable to the Wastewater System. We assumed the higher risk due to the Wastewater System’s size is added to the higher risk found in our quantitative and qualitative analysis. This combined risk was assumed to result in the Wastewater System being 25% more risky than the Comparable Group and produces a 25% ($100\% - 25\%$) base risk adjustment to the Comparable Group’s Market Multiples. We applied the 75% base risk adjustment to all financial multiples. For example, the

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Comparable Group's ICAP multiple was multiplied by 75% to produce a lower multiple applicable to the Wastewater System to account for risk differences.

The Comparable Group's Market Multiples of Revenue, EBITDA, and EBIT were adjusted for the base risk adjustment to produce multiples applicable to the Wastewater System (Exhibit 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 with "cost free" capital such as contributions because "cost free" capital should not be part of this valuation process. The Comparable Group's Market Multiples of Customers and Population were adjusted for the type of assets of the Wastewater System 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: 75% of ICAP (more risk/less growth), 79% of GPPE (more risk/lower growth and contributions), 79% of NPPE (more risk/lower growth and contributions), 75% of Revenue (more risk/lower growth); 75% of EBIT and 75% EBITDA (more risk/lower growth); and 80% 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.¹⁷ Consequently, we do not believe the results of the multiples of Revenue, EBIT and EBITDA are meaningful and should not be used for municipal utilities.

In the market multiples method, the meaningful Market Multiples of the Comparable Group are used to develop an indicated value of the Wastewater System. This is accomplished by multiplying the Wastewater System's financial and operating data by the Comparable Group's median Market Multiples (Exhibit 17, page 1). The results of the market multiples method (Exhibit 17, page 1) show a range of value for the Wastewater System of \$12.1 million to \$17.2 million and collectively, indicate value of \$14.7 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.

¹⁷ The Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

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 (August 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 August 31, 2020 valuation multiples so that the August 31, 2020 valuation multiples have an index value of 100.

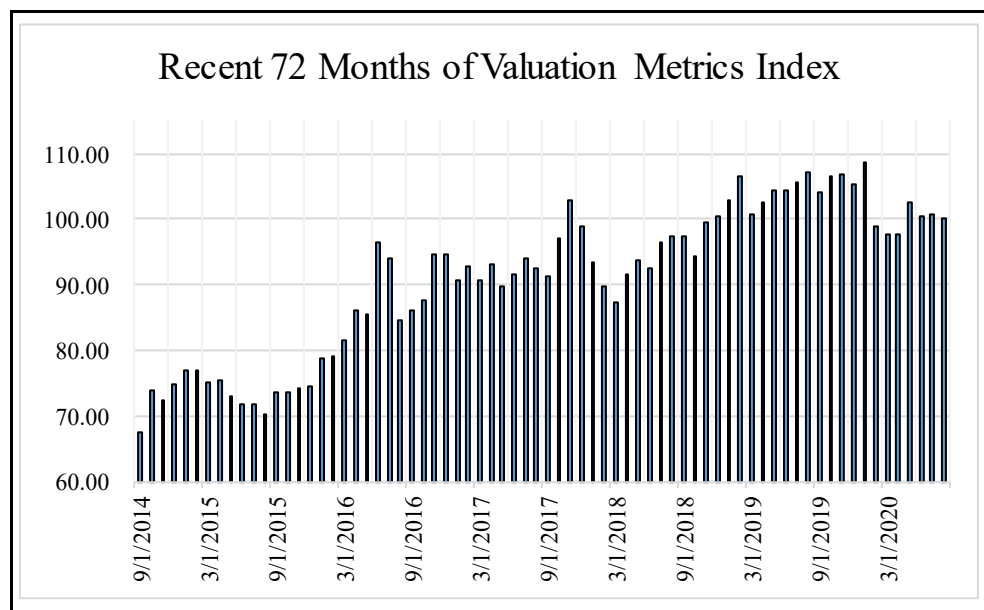


Figure 1

The index of the Comparable Group's appraisal date (August 31, 2020) valuation multiples is 2% above the 2020's lowest levels and 9% below the 2020's highest levels and 2% above the 2019's lowest levels and 7% below 2019's highest levels. The index of the Comparable Group's August 31, 2020 valuation multiples are 13% higher than 2018's lowest levels and equal to the 2018's highest levels, are 13% higher than 2017's lowest levels and 3% below 2017's highest levels, are 4% to 21% higher than 2016's, and are 23% to 30% higher than 2015's multiples' index.

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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 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 Wastewater System’s selected transactions method indicated values based on Capital Items and those based on Demographics Items. We attribute this to the fact the selling utilities’ dollars of Income Statement Items do not reflect any provision for taxes.¹⁸ 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

¹⁸ Further, Revenue, EBIT and EBITDA for the Wastewater System also do not include a fair rate of return.

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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 Wastewater System. This is accomplished by multiplying the Wastewater 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 Wastewater System of \$13.9 million when mostly collection/distribution assets are solely considered and \$16.9 million when all transactions are considered. Collectively, the selected transactions method indicates a value of \$15.4 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 Wastewater System, it does provide a range of indicated value for the Wastewater 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 Wastewater System. This is accomplished by multiplying the Wastewater System’s financial and operating data by the selling utilities’ transactions multiples. The results of the Connecticut Water selected transactions show a range of value for the Wastewater System of \$15.4 million when the reported significant selected transactions multiples are considered and a value of \$19.5 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 Wastewater System is not.

The results of the market multiples method shown on Exhibit 17 indicate value of \$14.7 million. The results of the selected transactions method shown on Exhibit 18 indicate value of \$15.4 million. Based on the aforesaid results, the Market Approach to valuation indicates a value of \$15.0 million for the Wastewater System based on the results of the market multiples method and the selected transactions method.

Conclusion. We summarize our findings for the Wastewater System on Exhibit 19. Our findings for the Wastewater System is based on the Cost, Market and Income Approaches to valuation. We used seven methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, Market Multiple Discounted Cash Flow Method, Capitalization Discounted Cash Flow Method, Market Multiples Method, and the Selected Transactions Method.

The results from the 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,

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our conclusion regarding the fair market value is \$17.6 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 Wastewater System of \$15.0 million to \$19.0 million and collectively indicate a fair market value of \$17,617,000 for the Wastewater System.

APPENDIX A - QUALIFICATIONS

APPENDIX A

Professional Qualifications
of
Harold Walker, III
Manager, Financial Studies
Gannett Fleming Valuation and Rate Consultants, LLC.

EDUCATION

Mr. Walker graduated from Pennsylvania State University in 1984 with a Bachelor of Science Degree in Finance. His studies concentrated on securities analysis and portfolio management with an emphasis on economics and quantitative business analysis. He has also completed the regulation and the rate-making process courses presented by the College of Business Administration and Economics Center for Public Utilities at New Mexico State University. Additionally, he has attended programs presented by The Institute of Chartered Financial Analysts (CFA).

Mr. Walker was awarded the professional designation "Certified Rate of Return Analyst" (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

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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

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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 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 (August 31, 2020) is the specific date at which the value of the Wastewater System is based. Generally, only the circumstances existing at the valuation date and events occurring up to the valuation date are considered. Events which could affect the value may occur 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 August 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

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evidence, the risk to water supplies is low.¹⁹ EPA has also stated that wastewater treatment plants treat the COVID-19 virus, “wastewater treatment plants treat viruses and other pathogens. Coronavirus, which causes COVID-19, is a type of virus that is particularly susceptible to disinfection. Standard treatment and disinfectant processes at wastewater treatment plants are expected to be effective.”²⁰ 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.”²¹

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.”²² 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. 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) from pre-COVID-19 levels..

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

20 <https://www.epa.gov/coronavirus/do-wastewater-treatment-plants-treat-covid-19>, 7/31/20.

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

22 <https://www.jpmorgan.com/jmpdf/1320748588999.pdf>, 5/29/20.

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		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	8/31/20	1.49	2.9	3.22	1.41
Daily	9/30/20	1.46	2.90	3.25	1.44	1.79

* - Valuation date of current appraisal

Table 3

Before the COVID-19 pandemic the previous all-time market high for the S&P 500 Index occurred on February 19, 2020. Subsequent to February 19, 2020 the COVID-19 pandemic resulted in large-scale economic shutdowns, produced widespread stock market turbulence and generally resulted in decreased financial asset prices for some sectors of the economy. As a result, by March 23, 2020 the S&P 500 index had decline by 34% from its February 19, 2020 peak. More recently, between August 18, 2020 and September 2, 2020, the S&P 500 Index reached a number of new all-time highs. During this entire period of widespread stock market turbulence, the 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.²³

²³ The first six spot dates and the related multiples shown in the market multiples Table 4 were taken from recent Gannett Fleming appraisals filed with the PA PUC.

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
* 8/31/2020	1.94	1.47	1.84	8.44	20.99	31.75	\$10,104	\$2,861
9/30/2020	1.98	1.40	1.70	9.91	21.29	37.80	\$9,681	\$3,269

* - 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 may 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 economy. We do not believe the appraised value of the long-lived Wastewater System assets will

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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 Wastewater System assets will provide service for decades.

Moreover, the Wastewater 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 Wastewater System's revenues and cash flows should not be materially impacted on a relative basis.

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COMPLIANCE & APPRAISAL CERTIFICATION

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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 Upper Pottsgrove Township. The intended users of the valuation are the Upper Pottsgrove 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 Upper Pottsgrove Township's Wastewater 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.**

Upper Pottsgrove Township owns and operates the Wastewater System which consists of four pump stations, about 18,102 linear feet of force mains, approximately 102,252 linear feet of gravity sewer collection mains, associated infrastructure and appurtenances, and related land and land rights. The Wastewater System's sewage flows to an interceptor for treatment at the Pottstown Borough Authority Sewage Treatment Plant for which the Township has purchased capacity. The average annual flow for the Township in 2018 was 0.444 MGD.

The Wastewater System's four pump stations are Pine Ford Road, Regal Oaks, Hollyberry Court and Evans Road. The Wastewater System collection system has approximately three miles of force mains. About 55% of the force mains installations occurred in the 2010s and earliest installation was 1986. The force mains materials are polyvinyl chloride ("PVC") and ductile iron ("DIP").

The Wastewater System has approximately 19 miles of gravity collectors and interceptors ranging in size from 6 to 18 inches diameter. About 54% of the gravity mains installations occurred in the 2000s and 2010s. The gravity mains materials are PVC, vitrified clay, and DIP and there are 534 manholes.

Upper Pottsgrove Township's Wastewater System land and land rights include land used for wastewater collection and transmission, about 22 miles of mains, four

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Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

pump stations and multiple easements and rights-of-way necessary to operate the Wastewater 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

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

The effective date of the appraisal is as of August 31, 2020 and the appraisal report date is October 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 Upper Pottsgrove Township's Wastewater 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 Upper Pottsgrove 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.

Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

The appraisal considered all three approaches to value: the cost, income and market. Briefly the scopes of work for each are as follows:

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

Income Approach - The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of earning method converted a single base economic income number to a value by dividing it by a capitalization rate. The discounted cash flow method used estimates of future debt free net cash flow and discounted them to arrive at a present value or price of the cash flows. The capitalization rate and the discount rate were developed based on market debt and equity rates at the appraisal date. The discounted cash flow method reflected two types of discounted cash flow analyses, the EBIT and EBITDA terminal value model and a capitalization of terminal value model.

Market Approach - The market approach was developed based on the market multiples method and the selected transaction method. The market multiples method was based on the market price data of publicly traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publicly traded corporations was used to calculate the market multiples for the comparable publicly traded corporations at the appraisal date. The selected transactions method used certain public information relating to the purchase or sales of businesses involved in the same or a similar business line as the Wastewater System to calculate market multiples at the time of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied by the corresponding the Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

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

- **Clearly and conspicuously:**

- **State all extraordinary assumptions and hypothetical conditions;**

There were no extraordinary assumptions required or hypothetical conditions in this appraisal.

- **State that their use might have affected the assignment results**

Not applicable.

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

Not applicable.

- **Describe the information analyzed, the appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions**

See scope of work above.

- **State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal**

Upper Pottsgrove Township's Wastewater System land and land rights include land used for wastewater collection and transmission, about 22 miles of mains, four pump stations and multiple easements and rights-of-way necessary to operate the Wastewater System.

The Upper Pottsgrove Township Wastewater System's land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal.

- **State and describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate**

Appendix A-5.2 (Gannett)

Compliance with Uniform Standards of Professional

Appraisal Practice (USPAP) 2020-2021

Fulfillment of Requirements for a Personal Property Appraisal and Report

All land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal, were valued at original cost, and not at highest and best use of the real estate.

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

No departures for Standard 1 were made.

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

See attached for signed certification.

APPRAISAL CERTIFICATION

Upper Pottsgrove Township, Pennsylvania

Upper Pottsgrove Township

Wastewater System Assets

Fair Market Value Appraisal Report

As of August 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 Upper Pottsgrove Township Wastewater 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)

APPRAISAL CERTIFICATION

Upper Pottsgrove Township, Pennsylvania

Upper Pottsgrove Township

Wastewater System Assets

Fair Market Value Appraisal Report

As of August 31, 2020

- The signers of this report relied upon Gregory R. Herbert, Rate Analyst at Gannett Fleming Valuation and Rate Consultants, LLC., who viewed or observed the property that is the subject of this report.
- Individuals providing significant appraisal assistance to the person signing this certification include: John J. Spanos, President, Joanna Lappin, Depreciation Analyst and Gregory R. Herbert, Rate Analyst at 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)

EXHIBITS

Upper Pottsgrove Township Wastewater System Assets
Selected Audited Financial Information

	12-Months Ended December 31:			
	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
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	0	0	0	0
Debt	6,498,050	5,933,352	5,338,888	4,728,505
Equity	NA	NA	NA	NA
Total Capital	NA	NA	NA	NA
OPERATING REVENUES				
Charges for services	1,319,318	1,312,039	1,362,072	1,374,115
Other operating income	0	0	0	6,127
TOTAL OPERATING REVENUES	1,319,318	1,312,039	1,362,072	1,380,242
Expenses	347,490	595,002	425,021	354,533
Depreciation	0	0	0	0
TOTAL OPERATING EXPENSES	347,490	595,002	425,021	354,533
CAPX *	NA	320,901	469,500	97,860
Interest	190,493	177,935	163,230	145,775
Principal	540,080	564,698	594,464	610,383

* - CAPX is based on additions to plant asset inventory

Source of Information: Audited Financial Statements (2016-2019)

Upper Pottsgrove Township Wastewater System Assets
Population, Housing Units, Customer Count, and
New Connections

	<u>2020</u>	<u>Population To Customers</u>
Population	5,530	<u>3.9</u>
Housing Units	<u>2,037</u>	
Average Size	<u>2.71</u>	

	<u>Current</u>
<u>Customers</u>	
Residential	1,390
Commercial	28
Mixed Use	7
Public	3
Total	<u>1,428</u>

Total EDUs	<u>1,573</u>

Projected New EDUs

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
New EDUs	58	55	24	52	69

Annual Daily Average Sewage Flow (MGD)

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Township Totals	NA	NA	NA	NA	0.444

Population and Housing Units (2020)

<u>Total Population</u>	<u>Population in Households</u>	<u>Total Housing Units</u>	<u>Vacancy Rate</u>	<u>Population per Housing Unit</u>
5,530	5,530	2,037	4.7%	2.71

TABLE 3.1 US Population Census Counts, 2000 & 2010

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			

TABLE 3.2 Pennsylvania Population Census by County and Municipality, 2000 & 2010

Geographic Area	Population		Percentage Change	Municipal Growth Rank
	2000	2010		
Pennsylvania	12,281,054	12,702,379	3.4%	-
Montgomery County	750,097	799,874	6.6%	-
Upper Pottsgrove township	4,102	5,315	29.6%	123 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%
Upper Pottsgrove Township	5,483	5,774	6,065	6,357	6,649	6,941	7,233	5.3%	5.0%	4.8%	4.6%	4.4%	4.2%	31.9%

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%
Upper Pottsgrove Township	1,161	1,186	1,227	1,264	1,301	1,335	1,361	2.2%	3.5%	3.0%	2.9%	2.6%	1.9%	17.2%

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 Upper Pottsgrove Township Wastewater System Assets
And the Comparable Group
2017 - 2019 (1)

	Upper Pottsgrove Township Wastewater System Assets			Comparable Group		
	2019	2018	2017	2019	2018	2017
Debt Service Coverage	1.4	1.2	1.0	2.0	3.7	2.7
Pre-Tax Interest Coverage - Including AFC(2)(x)	7.0	5.7	4.0	3.6	3.6	4.4
Post-Tax Interest Coverage - Including AFC(2)(x)	7.0	5.7	4.0	2.9	3.0	3.5
GCF / Interest Coverage(3)(x)	7.0	5.7	4.0	4.7	4.9	5.9
GCF / Tot. Debt(4)(%)	18.6	14.5	9.1	15.8	18.7	23.2
GCF / Construction(5)(%)	899.2	164.8	168.0	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

Upper Pottsgrove Township Wastewater System Assets
 Illustrating the Impact of Size on Risk and Return
Through Common Stock Returns

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

<u>A</u>		<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>
Market Quartile	Market Quartile Name	Average	Standard	Change in Quartile Premium	Largest Market Value in the Quartile (Mill \$)	Quartile Beta	Comparison Group Beta	Beta Ratio	Beta Adjusted	
		Quartile	Deviation						Quartile	Change in
		Premium	of						Size	Quartile
		1926-18	Return	Premium					Premium	Premium
		(%)	(%)	(%)					(%)	(%)
(Largest Stocks)										
1	Large-Cap	0.00	19.9	--	1,073,390	1.00	0.80	80%	0.00	
2	Mid-Cap	0.89	24.3	0.89	13,456	1.12	0.80	71%	0.64	0.64
3	Low-Cap	1.60	28.5	0.71	2,993	1.22	0.80	66%	1.05	0.41
4	Mico-Cap	3.40	38.5	1.80	728	1.35	0.80	59%	2.01	0.97
(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

	<u>8/31/2020</u> <u>Market</u> <u>Value</u> <u>(Mill \$)</u>	<u>Market</u> <u>Quartile</u> <u>Name</u>	<u>Market</u> <u>Quartile</u>
<u>Comparable Group</u>			
American States Water Co	2,806	Low-Cap	3
American Water Works Co Inc	25,611	Large-Cap	1
Artesian Resources -Cl A	329	Mico-Cap	4
California Water Service Gp	2,240	Low-Cap	3
Essential Utilities, Inc.	10,704	Mid-Cap	2
Middlesex Water Co	1,120	Low-Cap	3
SJW Corp	1,784	Low-Cap	3
York Water Co	595	Mico-Cap	4
Median	2,012	Low-Cap	3

Upper Pottsgrove Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.1 Property Plant & Equipment Analysis

(Current Know Statistics)			
	Gross Property, Plant & Equipment	Net Property, Plant & Equipment	Percentage of Property, Plant & Equipment Not Depreciated
(Millions of \$)			
Upper Pottsgrove Township Wastewater System Assets *	\$15.295	\$11.549	<u>76%</u>
<u>Comparable Group</u>			
American States Water Company	\$1,980.305	\$1,437.042	73%
American Water Works Company	24,044.000	18,335.000	76%
Artesian Resources Corporation	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 Company	893.664	722.044	81%
SJW Group	3,192.780	2,230.343	70%
The York Water Company	399.269	313.993	<u>79%</u>
Median			<u>77%</u>
* - Developed on Exhibit 7.			

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 4/30/2020)				
	Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	2019 Percentage of Known "Cost Free" Capital
(Millions of \$)				
<u>Comparable Group</u>				
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	<u>76%</u>	<u>28%</u>
Median			<u>79%</u>	<u>26%</u>

Upper Pottsgrove Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.3 Capital Expenditures Analysis

	PP&E-Total Net				Capital Expenditures			
	2019	2018	2017	2016	2019	2018	2017	2016
	(Millions of \$)				(Millions of \$)			
Upper Pottsgrove Township Wastewater System Assets	NA	NA	NA	NA	\$0.098	\$0.470	\$0.321	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				
Upper Pottsgrove Township Wastewater 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%				

Upper Pottsgrove Township Wastewater 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 \$)			

Upper Pottsgrove Township Wastewater System Assets	\$1.380	\$1.362	\$1.312	\$1.319	\$1.026	\$0.937	\$0.717	\$0.972

Comparable Group

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 \$)			

Upper Pottsgrove Township Wastewater System Assets	\$1.026	\$0.937	\$0.717	\$0.972

Comparable Group

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

Upper Pottsgrove Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.4 Growth Rate Analyses

	Revenue Growth			EBITDA Growth		
	2019	2018	2017	2019	2018	2017
Upper Pottsgrove Township Wastewater System Assets	1.3%	3.8%	-0.5%	9.5%	30.7%	-26.2%
<u>Comparable Group</u>						
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			
Upper Pottsgrove Township Wastewater System Assets	9.5%	30.7%	-26.2%			
<u>Comparable Group</u>						
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%			

Upper Pottsgrove Township Wastewater System Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.5 Profit Margin Analyses			
	EBITDA / Revenue - Margin		
	2019	2018	2017
Upper Pottsgrove Township Wastewater System Assets	74.3%	68.8%	54.6%
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
Upper Pottsgrove Township Wastewater System Assets	74.3%	68.8%	54.6%
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

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ORIGINAL COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT	DESCRIPTION	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.00	LAND AND LAND RIGHTS	8,865.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	1,612,326.03	365,413
355.00	POWER GENERATION EQUIPMENT	47,512.12	30,485
360.20	COLLECTION SEWERS - FORCE	647,820.96	123,312
361.20	COLLECTION SEWERS - GRAVITY	6,522,768.17	1,476,422
361.21	COLLECTION SEWERS - MANHOLES	1,586,684.06	362,536
363.20	SERVICES TO CUSTOMERS	1,731,293.99	413,990
365.20	METER INSTALLATIONS	12,604.82	7,122
380.40	TREATMENT AND DISPOSAL EQUIPMENT	3,125,472.00	967,170
	TOTAL COMPANY	15,295,347.15	3,746,450

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF ORIGINAL COST
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT	DESCRIPTION	ORIGINAL COST
(1)	(2)	(3)
353.00	LAND AND LAND RIGHTS	8,865.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	1,612,326.03
355.00	POWER GENERATION EQUIPMENT	47,512.12
360.20	COLLECTION SEWERS - FORCE	647,820.96
361.20	COLLECTION SEWERS - GRAVITY	6,522,768.17
361.21	COLLECTION SEWERS - MANHOLES	1,586,684.06
363.20	SERVICES TO CUSTOMERS	1,731,293.99
365.20	METER INSTALLATIONS	12,604.82
380.40	TREATMENT AND DISPOSAL EQUIPMENT	3,125,472.00
	TOTAL COMPANY	15,295,347.15

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

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

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	ORIGINAL COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	8,865.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	50-R2.5	1,612,326.03	365,413
355.00	POWER GENERATION EQUIPMENT	25-S2.5	47,512.12	30,485
360.20	COLLECTION SEWERS - FORCE	65-R2.5	647,820.96	123,312
361.20	COLLECTION SEWERS - GRAVITY	60-R2.5	6,522,768.17	1,476,422
361.21	COLLECTION SEWERS - MANHOLES	60-R3	1,586,684.06	362,536
363.20	SERVICES TO CUSTOMERS	55-R2.5	1,731,293.99	413,990
365.20	METER INSTALLATIONS	40-R3	12,604.82	7,122
380.40	TREATMENT AND DISPOSAL EQUIPMENT	45-S0.5	3,125,472.00	967,170
	TOTAL COMPANY		15,295,347.15	3,746,450

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.00 LAND AND LAND RIGHTS

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

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

NONDEPRECIABLE

1998	8,865.00						

	8,865.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPHOUSE

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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							
1986	36,000.00	50.00	2.00	720.00	21.22	0.5756	20,722
1998	259,251.52	50.00	2.00	5,185.03	30.30	0.3940	102,145
2010	1,035,752.63	50.00	2.00	20,715.05	40.60	0.1880	194,721
2011	281,321.88	50.00	2.00	5,626.44	41.50	0.1700	47,825
	1,612,326.03			32,246.52			365,413
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00							

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 25-S2.5							
NET SALVAGE PERCENT.. 0							
1998	36,479.46	25.00	4.00	1,459.18	6.83	0.7268	26,513
2011	11,032.66	25.00	4.00	441.31	16.00	0.3600	3,972
	47,512.12			1,900.49			30,485
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00							

UPPER POTTSGROVE TOWNSHIP

ACCOUNT 360.20 COLLECTION SEWERS - FORCE

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

RELATED TO ORIGINAL COST AT AUGUST 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 65-R2.5							
NET SALVAGE PERCENT.. 0							
1986	26,880.00	65.00	1.54	413.95	35.13	0.4595	12,352
1990	21,123.01	65.00	1.54	325.29	38.29	0.4109	8,680
1998	81,861.75	65.00	1.54	1,260.67	44.93	0.3088	25,276
2007	74,512.46	65.00	1.54	1,147.49	52.83	0.1872	13,951
2008	6,192.90	65.00	1.54	95.37	53.73	0.1734	1,074
2010	425,470.21	65.00	1.54	6,552.24	55.54	0.1455	61,923
2020	11,780.63	65.00	1.54	181.42	64.69	0.0048	56
	647,820.96			9,976.43			123,312
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54							

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.20 COLLECTION SEWERS - GRAVITY

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 60-R2.5							
NET SALVAGE PERCENT.. 0							
1984	170,612.28	60.00	1.67	2,849.23	28.93	0.5178	88,348
1986	356,488.70	60.00	1.67	5,953.36	30.42	0.4930	175,749
1990	66,275.83	60.00	1.67	1,106.81	33.50	0.4417	29,272
1995	580,961.10	60.00	1.67	9,702.05	37.53	0.3745	217,570
1996	39,880.78	60.00	1.67	666.01	38.35	0.3608	14,390
1998	229,712.25	60.00	1.67	3,836.19	40.03	0.3328	76,455
1999	155,043.85	60.00	1.67	2,589.23	40.87	0.3188	49,433
2000	72,274.84	60.00	1.67	1,206.99	41.72	0.3047	22,020
2001	90,076.13	60.00	1.67	1,504.27	42.58	0.2903	26,152
2003	220,404.82	60.00	1.67	3,680.76	44.32	0.2613	57,598
2005	127,473.99	60.00	1.67	2,128.82	46.07	0.2322	29,596
2007	1,889,760.85	60.00	1.67	31,559.01	47.85	0.2025	382,677
2008	668,353.16	60.00	1.67	11,161.50	48.75	0.1875	125,316
2010	993,656.14	60.00	1.67	16,594.06	50.56	0.1573	156,332
2017	270,906.56	60.00	1.67	4,524.14	57.02	0.0497	13,456
2018	291,642.63	60.00	1.67	4,870.43	57.96	0.0340	9,916
2019	45,150.72	60.00	1.67	754.02	58.90	0.0183	828
2020	254,093.54	60.00	1.67	4,243.36	59.69	0.0052	1,314
6,522,768.17				108,930.24	1,476,422		

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.21 COLLECTION SEWERS - MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 60-R3							
NET SALVAGE PERCENT.. 0							
1984	32,609.52	60.00	1.67	544.58	27.32	0.5447	17,761
1986	84,124.42	60.00	1.67	1,404.88	28.89	0.5185	43,619
1990	49,462.45	60.00	1.67	826.02	32.14	0.4643	22,967
1995	104,746.14	60.00	1.67	1,749.26	36.38	0.3937	41,235
1996	12,366.13	60.00	1.67	206.51	37.25	0.3792	4,689
1998	18,567.53	60.00	1.67	310.08	39.01	0.3498	6,495
1999	69,013.73	60.00	1.67	1,152.53	39.91	0.3348	23,108
2000	19,939.67	60.00	1.67	332.99	40.81	0.3198	6,377
2001	23,963.62	60.00	1.67	400.19	41.71	0.3048	7,305
2003	79,106.13	60.00	1.67	1,321.07	43.54	0.2743	21,701
2005	76,013.39	60.00	1.67	1,269.42	45.40	0.2433	18,496
2007	168,796.46	60.00	1.67	2,818.90	47.27	0.2122	35,814
2008	201,119.41	60.00	1.67	3,358.69	48.21	0.1965	39,520
2010	410,712.52	60.00	1.67	6,858.90	50.12	0.1647	67,632
2017	28,720.38	60.00	1.67	479.63	56.89	0.0518	1,489
2018	90,877.44	60.00	1.67	1,517.65	57.87	0.0355	3,226
2019	33,712.54	60.00	1.67	563.00	58.85	0.0192	646
2020	82,832.58	60.00	1.67	1,383.30	59.67	0.0055	456
	1,586,684.06			26,497.60			362,536

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 55-R2.5							
NET SALVAGE PERCENT.. 0							
1986	43,786.68	55.00	1.82	796.92	25.77	0.5315	23,270
1990	10,876.01	55.00	1.82	197.94	28.76	0.4771	5,189
1995	237,347.44	55.00	1.82	4,319.72	32.69	0.4056	96,278
1996	21,199.09	55.00	1.82	385.82	33.50	0.3909	8,287
1998	16,014.95	55.00	1.82	291.47	35.15	0.3609	5,780
1999	74,731.02	55.00	1.82	1,360.10	35.98	0.3458	25,843
2000	29,417.49	55.00	1.82	535.40	36.82	0.3306	9,724
2001	57,110.25	55.00	1.82	1,039.41	37.67	0.3151	17,995
2003	77,263.05	55.00	1.82	1,406.19	39.38	0.2840	21,943
2005	106,617.79	55.00	1.82	1,940.44	41.12	0.2524	26,906
2007	78,257.99	55.00	1.82	1,424.30	42.89	0.2202	17,231
2008	522,841.43	55.00	1.82	9,515.71	43.78	0.2040	106,660
2010	261,404.53	55.00	1.82	4,757.56	45.58	0.1713	44,771
2017	21,274.36	55.00	1.82	387.19	52.02	0.0542	1,153
2018	54,387.92	55.00	1.82	989.86	52.96	0.0371	2,017
2019	18,996.75	55.00	1.82	345.74	53.90	0.0200	380
2020	99,767.24	55.00	1.82	1,815.76	54.69	0.0056	563

1,731,293.99	31,509.53	413,990

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 365.20 METER INSTALLATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 40-R3							
NET SALVAGE PERCENT.. 0							
1995	12,604.82	40.00	2.50	315.12	17.40	0.5650	7,122
	12,604.82			315.12			7,122
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50							

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 380.40 TREATMENT AND DISPOSAL EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO ORIGINAL COST AT AUGUST 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 45-S0.5							
NET SALVAGE PERCENT.. 0							
1990	1,001,717.00	45.00	2.22	22,238.12	23.17	0.4851	485,943
1994	350,000.00	45.00	2.22	7,770.00	25.37	0.4362	152,677
2005	604,764.00	45.00	2.22	13,425.76	32.33	0.2816	170,277
2010	736,597.00	45.00	2.22	16,352.45	36.05	0.1989	146,502
2011	19,755.00	45.00	2.22	438.56	36.84	0.1813	3,582
2013	28,267.00	45.00	2.22	627.53	38.48	0.1449	4,096
2018	32,592.00	45.00	2.22	723.54	42.91	0.0464	1,514
2020	351,780.00	45.00	2.22	7,809.52	44.67	0.0073	2,579
	3,125,472.00			69,385.48			967,170

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.22

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF REPLACEMENT COST AND ACCRUED DEPRECIATION
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT	DESCRIPTION	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)
353.00	LAND AND LAND RIGHTS	8,865.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	2,340,397.20	590,761
355.00	POWER GENERATION EQUIPMENT	122,658.65	81,754
360.20	COLLECTION SEWERS - FORCE	1,061,340.12	233,711
361.20	COLLECTION SEWERS - GRAVITY	11,737,552.16	3,173,233
361.21	COLLECTION SEWERS - MANHOLES	2,796,125.44	778,619
363.20	SERVICES TO CUSTOMERS	2,820,598.92	770,217
365.20	METER INSTALLATIONS	28,928.06	16,344
380.40	TREATMENT AND DISPOSAL EQUIPMENT	5,833,556.58	2,120,394
	TOTAL COMPANY	26,750,022.13	7,765,033

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

SUMMARY OF ANALYSIS OF REPLACEMENT COST
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT	DESCRIPTION	REPLACEMENT COST
(1)	(2)	(3)
353.00	LAND AND LAND RIGHTS	8,865.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	2,340,397.20
355.00	POWER GENERATION EQUIPMENT	122,658.65
360.20	COLLECTION SEWERS - FORCE	1,061,340.12
361.20	COLLECTION SEWERS - GRAVITY	11,737,552.16
361.21	COLLECTION SEWERS - MANHOLES	2,796,125.44
363.20	SERVICES TO CUSTOMERS	2,820,598.92
365.20	METER INSTALLATIONS	28,928.06
380.40	TREATMENT AND DISPOSAL EQUIPMENT	5,833,556.58
	TOTAL COMPANY	26,750,022.13

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

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

ACCOUNT	DESCRIPTION	SURVIVOR CURVE	REPLACEMENT COST	ACCRUED DEPRECIATION
(1)	(2)	(3)	(4)	(5)
353.00	LAND AND LAND RIGHTS	NONDEPRECIABLE	8,865.00	
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	50-R2.5	2,340,397.20	590,761
355.00	POWER GENERATION EQUIPMENT	25-S2.5	122,658.65	81,754
360.20	COLLECTION SEWERS - FORCE	65-R2.5	1,061,340.12	233,711
361.20	COLLECTION SEWERS - GRAVITY	60-R2.5	11,737,552.16	3,173,233
361.21	COLLECTION SEWERS - MANHOLES	60-R3	2,796,125.44	778,619
363.20	SERVICES TO CUSTOMERS	55-R2.5	2,820,598.92	770,217
365.20	METER INSTALLATIONS	40-R3	28,928.06	16,344
380.40	TREATMENT AND DISPOSAL EQUIPMENT	45-S0.5	5,833,556.58	2,120,394
	TOTAL COMPANY		26,750,022.13	7,765,033

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETSSUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT	DESCRIPTION	VINTAGE YEAR	BASE COST	TRANSITION FACTOR	FACTOR REFERENCE	REPLACEMENT COST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
353.00	LAND AND LAND RIGHTS	1998	8,865.00	1.00	(1)	8,865.00
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	1986	36,000.00	3.09	(2)	111,090.13
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	1998	259,251.52	2.13	(2)	553,121.20
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	2010	1,035,752.63	1.28	(2)	1,329,832.39
354.30	STRUCTURES AND IMPROVEMENTS - PUMPHOUSE	2011	281,321.88	1.23	(2)	346,353.48
355.00	POWER GENERATION EQUIPMENT	1998	36,479.46	2.81	(3)	102,500.57
355.00	POWER GENERATION EQUIPMENT	2011	11,032.66	1.83	(3)	20,158.08
360.20	COLLECTION SEWERS - FORCE	1986	26,880.00	3.32	(4)	89,283.76
360.20	COLLECTION SEWERS - FORCE	1990	21,123.01	2.81	(4)	59,439.17
360.20	COLLECTION SEWERS - FORCE	1998	81,861.75	2.39	(4)	195,315.22
360.20	COLLECTION SEWERS - FORCE	2007	74,512.46	1.60	(4)	119,079.35
360.20	COLLECTION SEWERS - FORCE	2008	6,192.90	1.44	(4)	8,920.73
360.20	COLLECTION SEWERS - FORCE	2010	425,470.21	1.36	(4)	577,521.26
360.20	COLLECTION SEWERS - FORCE	2020	11,780.63	1.00	(4)	11,780.63
361.20	COLLECTION SEWERS - GRAVITY	1984	170,612.28	3.47	(4)	592,248.37
361.20	COLLECTION SEWERS - GRAVITY	1986	356,488.70	3.32	(4)	1,184,101.68
361.20	COLLECTION SEWERS - GRAVITY	1990	66,275.83	2.81	(4)	186,497.10
361.20	COLLECTION SEWERS - GRAVITY	1995	580,961.10	2.55	(4)	1,482,150.76
361.20	COLLECTION SEWERS - GRAVITY	1996	39,880.78	2.50	(4)	99,643.13
361.20	COLLECTION SEWERS - GRAVITY	1998	229,712.25	2.39	(4)	548,074.02
361.20	COLLECTION SEWERS - GRAVITY	1999	155,043.85	2.35	(4)	363,773.24
361.20	COLLECTION SEWERS - GRAVITY	2000	72,274.84	2.25	(4)	162,378.75
361.20	COLLECTION SEWERS - GRAVITY	2001	90,076.13	2.17	(4)	195,126.55
361.20	COLLECTION SEWERS - GRAVITY	2003	220,404.82	2.08	(4)	458,680.30
361.20	COLLECTION SEWERS - GRAVITY	2005	127,473.99	1.81	(4)	230,214.22
361.20	COLLECTION SEWERS - GRAVITY	2007	1,889,760.85	1.60	(4)	3,020,051.77
361.20	COLLECTION SEWERS - GRAVITY	2008	668,353.16	1.44	(4)	962,746.81
361.20	COLLECTION SEWERS - GRAVITY	2010	993,656.14	1.36	(4)	1,348,760.82
361.20	COLLECTION SEWERS - GRAVITY	2017	270,906.56	1.09	(4)	295,312.56
361.20	COLLECTION SEWERS - GRAVITY	2018	291,642.63	1.05	(4)	307,623.05
361.20	COLLECTION SEWERS - GRAVITY	2019	45,150.72	1.02	(4)	46,075.49
361.20	COLLECTION SEWERS - GRAVITY	2020	254,093.54	1.00	(4)	254,093.54
361.21	COLLECTION SEWERS - MANHOLES	1984	32,609.52	3.47	(4)	113,197.80
361.21	COLLECTION SEWERS - MANHOLES	1986	84,124.42	3.32	(4)	279,425.03
361.21	COLLECTION SEWERS - MANHOLES	1990	49,462.45	2.81	(4)	139,185.03
361.21	COLLECTION SEWERS - MANHOLES	1995	104,746.14	2.55	(4)	267,228.86
361.21	COLLECTION SEWERS - MANHOLES	1996	12,366.13	2.50	(4)	30,897.09
361.21	COLLECTION SEWERS - MANHOLES	1998	18,567.53	2.39	(4)	44,300.56
361.21	COLLECTION SEWERS - MANHOLES	1999	69,013.73	2.35	(4)	161,924.18
361.21	COLLECTION SEWERS - MANHOLES	2000	19,939.67	2.25	(4)	44,798.14
361.21	COLLECTION SEWERS - MANHOLES	2001	23,963.62	2.17	(4)	51,910.96
361.21	COLLECTION SEWERS - MANHOLES	2003	79,106.13	2.08	(4)	164,626.27
361.21	COLLECTION SEWERS - MANHOLES	2005	76,013.39	1.81	(4)	137,277.91
361.21	COLLECTION SEWERS - MANHOLES	2007	168,796.46	1.60	(4)	269,755.85
361.21	COLLECTION SEWERS - MANHOLES	2008	201,119.41	1.44	(4)	289,707.72
361.21	COLLECTION SEWERS - MANHOLES	2010	410,712.52	1.36	(4)	557,489.59
361.21	COLLECTION SEWERS - MANHOLES	2017	28,720.38	1.09	(4)	31,307.80
361.21	COLLECTION SEWERS - MANHOLES	2018	90,877.44	1.05	(4)	95,857.03
361.21	COLLECTION SEWERS - MANHOLES	2019	33,712.54	1.02	(4)	34,403.04
361.21	COLLECTION SEWERS - MANHOLES	2020	82,832.58	1.00	(4)	82,832.58
363.20	SERVICES TO CUSTOMERS	1986	43,786.68	3.12	(5)	136,784.94
363.20	SERVICES TO CUSTOMERS	1990	10,876.01	2.69	(5)	29,307.11
363.20	SERVICES TO CUSTOMERS	1995	237,347.44	2.30	(5)	545,821.80
363.20	SERVICES TO CUSTOMERS	1996	21,199.09	2.20	(5)	46,624.79
363.20	SERVICES TO CUSTOMERS	1998	16,014.95	2.14	(5)	34,262.29
363.20	SERVICES TO CUSTOMERS	1999	74,731.02	2.11	(5)	157,964.37
363.20	SERVICES TO CUSTOMERS	2000	29,417.49	2.03	(5)	59,680.31
363.20	SERVICES TO CUSTOMERS	2001	57,110.25	1.99	(5)	113,897.84
363.20	SERVICES TO CUSTOMERS	2003	77,263.05	1.92	(5)	148,227.48
363.20	SERVICES TO CUSTOMERS	2005	106,617.79	1.72	(5)	183,590.63
363.20	SERVICES TO CUSTOMERS	2007	78,257.99	1.46	(5)	113,917.82

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETSSUMMARY OF REPLACEMENT COST AND TRANSITION FACTORS BY ACCOUNT AND VINTAGE YEAR
OF WASTEWATER SYSTEM AS OF AUGUST 31, 2020

ACCOUNT (1)	DESCRIPTION (2)	VINTAGE YEAR (3)	BASE COST (4)	TRANSITION FACTOR (5)	FACTOR REFERENCE (6)	REPLACEMENT COST (7)
363.20	SERVICES TO CUSTOMERS	2008	522,841.43	1.37	(5)	718,144.07
363.20	SERVICES TO CUSTOMERS	2010	261,404.53	1.27	(5)	332,525.40
363.20	SERVICES TO CUSTOMERS	2017	21,274.36	1.09	(5)	23,107.23
363.20	SERVICES TO CUSTOMERS	2018	54,387.92	1.06	(5)	57,481.84
363.20	SERVICES TO CUSTOMERS	2019	18,996.75	1.03	(5)	19,493.76
363.20	SERVICES TO CUSTOMERS	2020	99,767.24	1.00	(5)	99,767.24
365.20	METER INSTALLATIONS	1995	12,604.82	2.30	(6)	28,928.06
380.40	TREATMENT AND DISPOSAL EQUIPMENT	1990	1,001,717.00	2.65	(2)	2,657,691.97
380.40	TREATMENT AND DISPOSAL EQUIPMENT	1994	350,000.00	2.33	(2)	817,045.45
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2005	604,764.00	1.60	(2)	970,592.22
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2010	736,597.00	1.28	(2)	945,737.93
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2011	19,755.00	1.23	(2)	24,321.65
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2013	28,267.00	1.17	(2)	33,100.93
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2018	32,592.00	1.02	(2)	33,286.43
380.40	TREATMENT AND DISPOSAL EQUIPMENT	2020	351,780.00	1.00	(2)	351,780.00
TOTAL COMPANY			15,295,347.15			26,750,022.13

- 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 9
 (4) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 34
 (5) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 39
 (6) Handy-Whitman Index of Public Utility Costs, 1/1/20, Cost Trends of Water Utility Construction, North Atlantic Region, Line 40

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 353.00 LAND AND LAND RIGHTS

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

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

NONDEPRECIABLE

1998	8,865.00						

	8,865.00						

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 0.00

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 354.30 STRUCTURES AND IMPROVEMENTS - PUMPHOUSE

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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							
1986	111,090.13	50.00	2.00	2,221.80	21.22	0.5756	63,943
1998	553,121.20	50.00	2.00	11,062.42	30.30	0.3940	217,930
2010	1,329,832.39	50.00	2.00	26,596.65	40.60	0.1880	250,008
2011	346,353.48	50.00	2.00	6,927.07	41.50	0.1700	58,880
	2,340,397.20			46,807.94			590,761
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.00							

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 355.00 POWER GENERATION EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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 25-S2.5							
NET SALVAGE PERCENT.. 0							
1998	102,500.57	25.00	4.00	4,100.02	6.83	0.7268	74,497
2011	20,158.08	25.00	4.00	806.32	16.00	0.3600	7,257
	122,658.65			4,906.34			81,754
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 4.00							

UPPER POTTSGROVE TOWNSHIP

UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

SURVIVOR CURVE.. IOWA 65-R2.5
NET SALVAGE PERCENT.. 0

1986	89,283.76	65.00	1.54	1,374.97	35.13	0.4595	41,029
1990	59,439.17	65.00	1.54	915.36	38.29	0.4109	24,425
1998	195,315.22	65.00	1.54	3,007.85	44.93	0.3088	60,307
2007	119,079.35	65.00	1.54	1,833.82	52.83	0.1872	22,295
2008	8,920.73	65.00	1.54	137.38	53.73	0.1734	1,547
2010	577,521.26	65.00	1.54	8,893.83	55.54	0.1455	84,052
2020	11,780.63	65.00	1.54	181.42	64.69	0.0048	56
	1,061,340.12			16,344.63			233,711

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.54

UPPER POTTSGROVE TOWNSHIP

ACCOUNT 361.20 COLLECTION SEWERS - GRAVITY

CALCULATED ANNUAL AND ACCRUED DEPRECIATION

RELATED TO REPLACEMENT COST AT AUGUST 31, 2020

YEAR	ORIGINAL COST	AVG. LIFE	--ANNUAL RATE	ACCRUED-- AMOUNT	EXP.	--ACCRUED FACTOR	DEPREC.-- AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SURVIVOR CURVE.. IOWA 60-R2.5							
NET SALVAGE PERCENT.. 0							
1984	592,248.37	60.00	1.67	9,890.55	28.93	0.5178	306,684
1986	1,184,101.68	60.00	1.67	19,774.50	30.42	0.4930	583,762
1990	186,497.10	60.00	1.67	3,114.50	33.50	0.4417	82,370
1995	1,482,150.76	60.00	1.67	24,751.92	37.53	0.3745	555,065
1996	99,643.13	60.00	1.67	1,664.04	38.35	0.3608	35,954
1998	548,074.02	60.00	1.67	9,152.84	40.03	0.3328	182,415
1999	363,773.24	60.00	1.67	6,075.01	40.87	0.3188	115,982
2000	162,378.75	60.00	1.67	2,711.73	41.72	0.3047	49,472
2001	195,126.55	60.00	1.67	3,258.61	42.58	0.2903	56,651
2003	458,680.30	60.00	1.67	7,659.96	44.32	0.2613	119,867
2005	230,214.22	60.00	1.67	3,844.58	46.07	0.2322	53,449
2007	3,020,051.77	60.00	1.67	50,434.86	47.85	0.2025	611,560
2008	962,746.81	60.00	1.67	16,077.87	48.75	0.1875	180,515
2010	1,348,760.82	60.00	1.67	22,524.31	50.56	0.1573	212,201
2017	295,312.56	60.00	1.67	4,931.72	57.02	0.0497	14,668
2018	307,623.05	60.00	1.67	5,137.30	57.96	0.0340	10,459
2019	46,075.49	60.00	1.67	769.46	58.90	0.0183	845
2020	254,093.54	60.00	1.67	4,243.36	59.69	0.0052	1,314
	11,737,552.16			196,017.12			3,173,233

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

UPPER POTTS GROVE TOWNSHIP
UPPER POTTS GROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 361.21 COLLECTION SEWERS - MANHOLES

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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 60-R3							
NET SALVAGE PERCENT.. 0							
1984	113,197.80	60.00	1.67	1,890.40	27.32	0.5447	61,655
1986	279,425.03	60.00	1.67	4,666.40	28.89	0.5185	144,882
1990	139,185.03	60.00	1.67	2,324.39	32.14	0.4643	64,628
1995	267,228.86	60.00	1.67	4,462.72	36.38	0.3937	105,200
1996	30,897.09	60.00	1.67	515.98	37.25	0.3792	11,715
1998	44,300.56	60.00	1.67	739.82	39.01	0.3498	15,498
1999	161,924.18	60.00	1.67	2,704.13	39.91	0.3348	54,217
2000	44,798.14	60.00	1.67	748.13	40.81	0.3198	14,328
2001	51,910.96	60.00	1.67	866.91	41.71	0.3048	15,824
2003	164,626.27	60.00	1.67	2,749.26	43.54	0.2743	45,162
2005	137,277.91	60.00	1.67	2,292.54	45.40	0.2433	33,404
2007	269,755.85	60.00	1.67	4,504.92	47.27	0.2122	57,234
2008	289,707.72	60.00	1.67	4,838.12	48.21	0.1965	56,928
2010	557,489.59	60.00	1.67	9,310.08	50.12	0.1647	91,802
2017	31,307.80	60.00	1.67	522.84	56.89	0.0518	1,623
2018	95,857.03	60.00	1.67	1,600.81	57.87	0.0355	3,403
2019	34,403.04	60.00	1.67	574.53	58.85	0.0192	660
2020	82,832.58	60.00	1.67	1,383.30	59.67	0.0055	456
2,796,125.44				46,695.28	778,619		

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.67

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 363.20 SERVICES TO CUSTOMERS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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 55-R2.5							
NET SALVAGE PERCENT.. 0							
1986	136,784.94	55.00	1.82	2,489.49	25.77	0.5315	72,694
1990	29,307.11	55.00	1.82	533.39	28.76	0.4771	13,982
1995	545,821.80	55.00	1.82	9,933.96	32.69	0.4056	221,407
1996	46,624.79	55.00	1.82	848.57	33.50	0.3909	18,226
1998	34,262.29	55.00	1.82	623.57	35.15	0.3609	12,366
1999	157,964.37	55.00	1.82	2,874.95	35.98	0.3458	54,627
2000	59,680.31	55.00	1.82	1,086.18	36.82	0.3306	19,727
2001	113,897.84	55.00	1.82	2,072.94	37.67	0.3151	35,888
2003	148,227.48	55.00	1.82	2,697.74	39.38	0.2840	42,097
2005	183,590.63	55.00	1.82	3,341.35	41.12	0.2524	46,331
2007	113,917.82	55.00	1.82	2,073.30	42.89	0.2202	25,082
2008	718,144.07	55.00	1.82	13,070.22	43.78	0.2040	146,501
2010	332,525.40	55.00	1.82	6,051.96	45.58	0.1713	56,952
2017	23,107.23	55.00	1.82	420.55	52.02	0.0542	1,252
2018	57,481.84	55.00	1.82	1,046.17	52.96	0.0371	2,132
2019	19,493.76	55.00	1.82	354.79	53.90	0.0200	390
2020	99,767.24	55.00	1.82	1,815.76	54.69	0.0056	563
	2,820,598.92			51,334.89			770,217

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 1.82

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 365.20 METER INSTALLATIONS

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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 40-R3							
NET SALVAGE PERCENT.. 0							
1995	28,928.06	40.00	2.50	723.20	17.40	0.5650	16,344
	28,928.06			723.20			16,344
COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.50							

UPPER POTTSGROVE TOWNSHIP
UPPER POTTSGROVE TOWNSHIP WASTEWATER SYSTEM ASSETS

ACCOUNT 380.40 TREATMENT AND DISPOSAL EQUIPMENT

CALCULATED ANNUAL AND ACCRUED DEPRECIATION
RELATED TO REPLACEMENT COST AT AUGUST 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 45-S0.5							
NET SALVAGE PERCENT.. 0							
1990	2,657,691.97	45.00	2.22	59,000.76	23.17	0.4851	1,289,273
1994	817,045.45	45.00	2.22	18,138.41	25.37	0.4362	356,412
2005	970,592.22	45.00	2.22	21,547.15	32.33	0.2816	273,280
2010	945,737.93	45.00	2.22	20,995.38	36.05	0.1989	188,098
2011	24,321.65	45.00	2.22	539.94	36.84	0.1813	4,410
2013	33,100.93	45.00	2.22	734.84	38.48	0.1449	4,796
2018	33,286.43	45.00	2.22	738.96	42.91	0.0464	1,546
2020	351,780.00	45.00	2.22	7,809.52	44.67	0.0073	2,579
	5,833,556.58			129,504.96			2,120,394

COMPOSITE ANNUAL ACCRUAL RATE, PERCENT .. 2.22

Upper Pottsgrove Township Wastewater System Assets

Pro Forma Operations

Earnings Capitalization Model

	Actual			Budget
				Year 0
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
1. <u>OPERATING REVENUES (1)</u>				
2. Charges for services	1,312,039	1,362,072	1,374,115	1,354,500
3. Other operating revenue	0	0	6,127	0
4. Tap Fees	0	0	0	0
5. Total Operating Revenues	1,312,039	1,362,072	1,380,242	1,354,500
6. Rate Increase				
7. <u>OPERATING EXPENSES (1)</u>				
8. Operating & Maintenance Expenses	595,002	425,021	354,533	415,492
9. Operating Expenses Before Depreciation	732,702	433,190	521,364	590,492
10. Depreciation (2)	0	0	0	280,761
11. Total Operating Expenses	732,702	433,190	521,364	871,253
12. Operating Income	579,337	928,882	858,878	483,247
13. Revenues (3)	1,312,039	1,362,072	1,380,242	1,354,500
14. EBITDA (4)	579,337	928,882	858,878	764,008
15. EBIT (5)	579,337	928,882	858,878	483,247
16. EBIT	579,337	928,882	858,878	483,247
17. (-) Income Taxes	0	0	0	0
18. Debt Free Net Income	579,337	928,882	858,878	483,247
19. (+) Depreciation & Amortization	0	0	0	280,761
20. (-) Capital Expenditures (6)	320,901	469,500	97,860	0
21. (-) Changes in Working Capital (7)	14,432	14,983	15,183	14,900
22. Debt Free Net Cash Flow	\$244,004	\$444,399	\$745,835	\$749,109

Upper Pottsgrove Township Wastewater System Assets

Pro Forma Operations

Earnings Capitalization Model

Pro Forma
2020 2020 (11)

3.35% Capitalization Rate Model (No Growth)	3.35% Capitalization Rate Model (No Growth)

23.	Debt Free Net Cash Flow (10)	\$749,109	\$326,980
24.	Capitalization Factor: (8)	<u>3.35%</u>	<u>3.35%</u>
25.	Indicated Value (line 23 ÷ line 24)	<u>\$22,361,448</u>	<u>\$9,760,590</u>

3.15% Capitalization Rate Model (0.20% Growth)	3.15% Capitalization Rate Model (0.20% Growth)

26.	Debt Free Net Cash Flow (10)	\$749,109	\$326,980
27.	Capitalization Factor: (9)	<u>3.15%</u>	<u>3.15%</u>
28.	Indicated Value (line 26 ÷ line 27)	<u>\$23,781,222</u>	<u>\$10,380,310</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

Upper Pottsgrove Township Wastewater 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 1.82% 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 8/31/2020 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 8/31/2020 adjusted for stated growth (g) where capitalization rate = $K - g$.
- (10) Final year shown, line 22.
- (11) Debt Free Net Cash Flow adjusted for average existing assets's CAPX of \$422,129 if system is not sold.

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

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

	Actual			Budget	Estimated	Estimated
				Year 0	Year 1	Year 2
	2017	2018	2019	2020	2021	2022
1. OPERATING REVENUES (1)						
2. Charges for services	1,312,039	1,362,072	1,374,115	1,354,500	1,364,934	1,387,055
3. Other operating revenue	0	0	6,127	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,387,055
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	595,002	425,021	354,533	415,492	423,802	432,278
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	137,700	8,169	166,831	175,000	151,725	154,760
12. LESS: EOS - Professional Services	0	0	0	0	(84,150)	(85,833)
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	732,702	433,190	521,364	590,492	491,377	501,204
16. Depreciation (2)	0	0	0	280,761	283,228	287,614
17. Total Operating Expenses	732,702	433,190	521,364	871,253	774,605	788,818
18. Operating Income	579,337	928,882	858,878	483,247	590,329	598,237
19. Revenues (3)	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,387,055
20. EBITDA (4)	579,337	928,882	858,878	764,008	873,557	885,851
21. EBIT (5)	579,337	928,882	858,878	483,247	590,329	598,237
22. EBIT	579,337	928,882	858,878	483,247	590,329	598,237
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	579,337	928,882	858,878	483,247	590,329	598,237
25. (+) Depreciation & Amortization	0	0	0	280,761	283,228	287,614
26. (-) Capital Expenditures (6)	320,901	469,500	97,860	0	278,620	282,934
27. (-) Changes in Working Capital (7)	14,432	14,983	15,183	14,900	15,014	15,258
28. Debt Free Net Cash Flow	\$244,004	\$444,399	\$745,835	\$749,109	\$579,923	\$587,659
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.35% (8)					0.9837	0.9518
31. Present Value Debt Free Net Cash Flow					\$570,470	\$559,334
32. Present Value Factor: 3.15% (9)					0.9846	0.9545
33. Present Value Debt Free Net Cash Flow					\$570,992	\$560,921

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 3 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	1,438,829	1,475,541	1,489,717	1,504,018	1,518,457	1,533,034
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,438,829	1,475,541	1,489,717	1,504,018	1,518,457	1,533,034
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	440,923	449,742	458,737	467,911	477,270	486,815
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	157,855	161,012	164,232	167,517	170,867	174,284
12. LESS: EOS - Professional Services	(87,550)	(89,301)	(91,087)	(92,908)	(94,767)	(96,662)
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	511,228	521,453	531,882	542,520	553,370	564,438
16. Depreciation (2)	292,067	296,589	301,182	305,845	310,581	315,389
17. Total Operating Expenses	803,296	818,042	833,064	848,365	863,951	879,827
18. Operating Income	635,533	657,499	656,653	655,653	654,506	653,207
19. Revenues (3)	1,438,829	1,475,541	1,489,717	1,504,018	1,518,457	1,533,034
20. EBITDA (4)	927,601	954,088	957,835	961,498	965,087	968,596
21. EBIT (5)	635,533	657,499	656,653	655,653	654,506	653,207
22. EBIT	635,533	657,499	656,653	655,653	654,506	653,207
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	635,533	657,499	656,653	655,653	654,506	653,207
25. (+) Depreciation & Amortization	292,067	296,589	301,182	305,845	310,581	315,389
26. (-) Capital Expenditures (6)	287,315	291,764	296,281	300,869	305,527	310,258
27. (-) Changes in Working Capital (7)	15,827	16,231	16,387	16,544	16,703	16,863
28. Debt Free Net Cash Flow	\$624,458	\$646,093	\$645,167	\$644,085	\$642,857	\$641,475
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.35% (8)	0.9209	0.8911	0.8622	0.8342	0.8072	0.7810
31. Present Value Debt Free Net Cash Flow	\$575,064	\$575,733	\$556,263	\$537,296	\$518,914	\$500,992
32. Present Value Factor: 3.15% (9)	0.9254	0.8971	0.8697	0.8432	0.8174	0.7925
33. Present Value Debt Free Net Cash Flow	\$577,874	\$579,610	\$561,102	\$543,093	\$525,471	\$508,369

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2029	2030	2031	2032	2033	2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,547,751	1,562,610	1,577,611	1,592,756	1,608,046	1,623,484
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	0
6. Total Operating Revenues	1,547,751	1,562,610	1,577,611	1,592,756	1,608,046	1,623,484
7. Rate Increase						
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	496,551	506,482	516,612	526,944	537,483	548,233
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	177,770	181,325	184,952	188,651	192,424	196,272
12. LESS: EOS - Professional Services	(98,595)	(100,567)	(102,578)	(104,630)	(106,723)	(108,857)
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	575,726	587,241	598,986	610,965	623,185	635,648
16. Depreciation (2)	320,274	325,232	330,268	335,381	340,574	345,848
17. Total Operating Expenses	896,000	912,473	929,254	946,347	963,759	981,496
18. Operating Income	651,751	650,137	648,357	646,409	644,287	641,988
19. Revenues (3)	1,547,751	1,562,610	1,577,611	1,592,756	1,608,046	1,623,484
20. EBITDA (4)	972,025	975,369	978,625	981,791	984,861	987,836
21. EBIT (5)	651,751	650,137	648,357	646,409	644,287	641,988
22. EBIT	651,751	650,137	648,357	646,409	644,287	641,988
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	651,751	650,137	648,357	646,409	644,287	641,988
25. (+) Depreciation & Amortization	320,274	325,232	330,268	335,381	340,574	345,848
26. (-) Capital Expenditures (6)	315,062	319,940	324,894	329,924	335,033	340,220
27. (-) Changes in Working Capital (7)	17,025	17,189	17,354	17,520	17,689	17,858
28. Debt Free Net Cash Flow	\$639,937	\$638,240	\$636,378	\$634,346	\$632,140	\$629,757
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.35% (8)	0.7557	0.7312	0.7075	0.6846	0.6624	0.6409
31. Present Value Debt Free Net Cash Flow	\$483,601	\$466,681	\$450,237	\$434,274	\$418,729	\$403,611
32. Present Value Factor: 3.15% (9)	0.7683	0.7448	0.7221	0.7000	0.6786	0.6579
33. Present Value Debt Free Net Cash Flow	\$491,664	\$475,362	\$459,528	\$444,042	\$428,970	\$414,317

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2035	2036	2037	2038	2039	2040
1. OPERATING REVENUES (1)						
2. Charges for services	1,639,069	1,654,804	1,670,690	1,686,729	1,702,921	1,719,270
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	1,719
6. Total Operating Revenues	1,639,069	1,654,804	1,670,690	1,686,729	1,702,921	1,720,989
7. Rate Increase						0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	559,198	570,381	581,789	593,425	605,293	617,399
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	200,198	204,202	208,286	212,452	216,701	221,035
12. LESS: EOS - Professional Services	(111,034)	(113,255)	(115,520)	(117,830)	(120,187)	(122,591)
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	648,361	661,329	674,555	688,046	701,807	715,843
16. Depreciation (2)	351,202	356,641	362,163	367,770	373,465	379,247
17. Total Operating Expenses	999,564	1,017,970	1,036,718	1,055,816	1,075,272	1,095,090
18. Operating Income	639,505	636,834	633,972	630,913	627,649	625,899
19. Revenues (3)	1,639,069	1,654,804	1,670,690	1,686,729	1,702,921	1,720,989
20. EBITDA (4)	990,708	993,475	996,135	998,683	1,001,114	1,005,146
21. EBIT (5)	639,505	636,834	633,972	630,913	627,649	625,899
22. EBIT	639,505	636,834	633,972	630,913	627,649	625,899
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	639,505	636,834	633,972	630,913	627,649	625,899
25. (+) Depreciation & Amortization	351,202	356,641	362,163	367,770	373,465	379,247
26. (-) Capital Expenditures (6)	345,488	350,838	356,270	361,786	367,388	373,076
27. (-) Changes in Working Capital (7)	18,030	18,203	18,378	18,554	18,732	18,931
28. Debt Free Net Cash Flow	\$627,190	\$624,435	\$621,487	\$618,343	\$614,994	\$613,139
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.35% (8)	0.6202	0.6001	0.5806	0.5618	0.5436	0.5260
31. Present Value Debt Free Net Cash Flow	\$388,983	\$374,723	\$360,836	\$347,385	\$334,311	\$322,511
32. Present Value Factor: 3.15% (9)	0.6378	0.6183	0.5995	0.5812	0.5634	0.5462
33. Present Value Debt Free Net Cash Flow	\$400,022	\$386,088	\$372,582	\$359,381	\$346,487	\$334,896

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	1,737,510	1,754,190	1,779,000	1,796,079
3. Other operating revenue	0	0	0	0
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	7,894	0	8,980
6. Total Operating Revenues	1,737,510	1,762,084	1,779,000	1,805,059
7. Rate Increase		0%		0%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	629,747	642,342	655,189	668,293
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	225,455	229,964	234,564	239,255
12. LESS: EOS - Professional Services	(125,042)	(127,543)	(130,094)	(132,696)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. Operating Expenses Before Depreciation	730,160	744,763	759,659	774,852
16. Depreciation (2)	385,119	391,082	397,138	403,287
17. Total Operating Expenses	1,115,279	1,135,845	1,156,796	1,178,139
18. Operating Income	622,231	626,239	622,204	626,920
19. Revenues (3)	1,737,510	1,762,084	1,779,000	1,805,059
20. EBITDA (4)	1,007,350	1,017,321	1,019,341	1,030,207
21. EBIT (5)	622,231	626,239	622,204	626,920
22. EBIT	622,231	626,239	622,204	626,920
23. (-) Income Taxes	0	0	0	0
24. Debt Free Net Income	622,231	626,239	622,204	626,920
25. (+) Depreciation & Amortization	385,119	391,082	397,138	403,287
26. (-) Capital Expenditures (6)	378,853	384,719	390,676	396,725
27. (-) Changes in Working Capital (7)	19,113	19,383	19,569	19,856
28. Debt Free Net Cash Flow	\$609,384	\$613,219	\$609,096	\$613,627
29. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.35% (8)	0.5089	0.4924	0.4764	0.4610
31. Present Value Debt Free Net Cash Flow	\$310,116	\$301,949	\$290,174	\$282,882
32. Present Value Factor: 3.15% (9)	0.5295	0.5133	0.4977	0.4825
33. Present Value Debt Free Net Cash Flow	\$322,669	\$314,765	\$303,147	\$296,075

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

DCF With Capitalization of Terminal Value Model @ 3.35%	
	<u>Terminal Value</u>
Projected Debt Free Net Cash Flow (10)	\$613,627
Divided by Capitalization Factor (8)	<u>3.35%</u>
24th Year Terminal Value	18,317,211
24th Year Present Value Factor (11)	<u>0.4610</u>
Present Value of Terminal Value	8,444,234
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>10,365,068</u>
Indicated Value	<u>\$18,809,303</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.35%			
		<u>Multiples (13)</u>	<u>Terminal Value</u>
Projected EBIT	\$626,920	23.8	\$14,920,697
Projected EBITDA	1,030,207	15.7	<u>16,174,253</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			15,760,580
24th Year Present Value Factor (11)			<u>0.4610</u>
Present Value of Terminal Value			7,265,627
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>10,365,068</u>
Indicated Value			<u>\$17,630,696</u>

DCF With Capitalization of Terminal Value Model @ 3.15%	
	<u>Terminal Value</u>
Projected Debt Free Net Cash Flow (10)	\$613,627
Divided by Capitalization Factor (9)	<u>3.15%</u>
24th Year Terminal Value	19,480,209
24th Year Present Value Factor (12)	<u>0.4610</u>
Present Value of Terminal Value	8,980,376
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>10,365,068</u>
Indicated Value	<u>\$19,345,445</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.15%			
		<u>Multiples (13)</u>	<u>Terminal Value</u>
Projected EBIT	\$626,920	23.8	\$14,920,697
Projected EBITDA	1,030,207	15.7	<u>16,174,253</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			15,760,580
24th Year Present Value Factor (12)			<u>0.4610</u>
Present Value of Terminal Value			7,265,627
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>10,365,068</u>
Indicated Value			<u>\$17,630,696</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

Notes: (1) Assumptions:

Charges for services - Pre-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 1.82% 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 8/31/2020 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 8/31/2020 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

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

	Actual			Budget	Estimated	Estimated
				Year 0	Year 1	Year 2
	2017	2018	2019	2020	2021	2022
1. OPERATING REVENUES (1)						
2. Charges for services	1,312,039	1,362,072	1,374,115	1,354,500	1,364,934	1,387,055
3. Other operating revenue	0	0	6,127	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	263,541
6. Total Operating Revenues	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,650,596
7. Rate Increase						19%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	595,002	425,021	354,533	415,492	423,802	432,278
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	137,700	8,169	166,831	175,000	151,725	154,760
12. LESS: EOS - Professional Services	0	0	0	0	(84,150)	(85,833)
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	23,843	23,895
16. Operating Expenses Before Depreciation	732,702	433,190	521,364	590,492	515,220	525,099
17. Depreciation (2)	0	0	0	280,761	283,228	287,614
18. Total Operating Expenses	732,702	433,190	521,364	871,253	798,448	812,713
19. Operating Income	579,337	928,882	858,878	483,247	566,486	837,883
20. Revenues (3)	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,650,596
21. EBITDA (4)	579,337	928,882	858,878	764,008	849,714	1,125,497
22. EBIT (5)	579,337	928,882	858,878	483,247	566,486	837,883
23. EBIT	579,337	928,882	858,878	483,247	566,486	837,883
24. (-) Income Taxes	0	0	0	139,610	163,658	242,064
25. Debt Free Net Income	579,337	928,882	858,878	343,637	402,828	595,819
26. (+) Depreciation & Amortization	0	0	0	280,761	283,228	287,614
27. (-) Capital Expenditures (6)	320,901	469,500	97,860	0	278,620	282,934
28. (-) Changes in Working Capital (7)	14,432	14,983	15,183	14,900	15,014	18,157
29. Debt Free Net Cash Flow	\$244,004	\$444,399	\$745,835	\$609,499	\$392,422	\$582,342
30. PV Time Period (mid-year)				(0.5)	0.5	1.5
31. Present Value Factor: 5.91% (8)					0.9717	0.9175
32. Present Value Debt Free Net Cash Flow					\$381,316	\$534,299
33. Present Value Factor: 7.10% (9)					0.9663	0.9022
34. Present Value Debt Free Net Cash Flow					\$379,197	\$525,389
35. Present Value Factor: 5.71% (8)					0.9726	0.9201
36. Present Value Debt Free Net Cash Flow					\$381,670	\$535,813
37. Present Value Factor: 6.90% (9)					0.9672	0.9048
38. Present Value Debt Free Net Cash Flow					\$379,550	\$526,903

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 3 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	1,712,206	1,755,893	1,772,763	1,798,731	1,815,999	1,833,432
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	8,864	0	0	9,167
6. Total Operating Revenues	1,712,206	1,755,893	1,781,627	1,798,731	1,815,999	1,842,599
7. Rate Increase			1%			0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	440,923	449,742	458,737	467,911	477,270	486,815
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	157,855	161,012	164,232	167,517	170,867	174,284
12. LESS: EOS - Professional Services	(87,550)	(89,301)	(91,087)	(92,908)	(94,767)	(96,662)
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	25,515	25,858	26,100	26,239	26,330	26,421
16. Operating Expenses Before Depreciation	536,743	547,311	557,982	568,759	579,700	590,859
17. Depreciation (2)	292,067	296,589	301,182	305,845	310,581	315,389
18. Total Operating Expenses	828,811	843,900	859,164	874,604	890,281	906,248
19. Operating Income	883,395	911,993	922,463	924,127	925,718	936,351
20. Revenues (3)	1,712,206	1,755,893	1,781,627	1,798,731	1,815,999	1,842,599
21. EBITDA (4)	1,175,463	1,208,582	1,223,645	1,229,972	1,236,299	1,251,740
22. EBIT (5)	883,395	911,993	922,463	924,127	925,718	936,351
23. EBIT	883,395	911,993	922,463	924,127	925,718	936,351
24. (-) Income Taxes	255,213	263,475	266,499	266,980	267,440	270,512
25. Debt Free Net Income	628,182	648,518	655,964	657,147	658,278	665,839
26. (+) Depreciation & Amortization	292,067	296,589	301,182	305,845	310,581	315,389
27. (-) Capital Expenditures (6)	287,315	291,764	296,281	300,869	305,527	310,258
28. (-) Changes in Working Capital (7)	18,834	19,315	19,598	19,786	19,976	20,269
29. Debt Free Net Cash Flow	\$614,100	\$634,028	\$641,267	\$642,337	\$643,356	\$650,702
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 5.91% (8)	0.8663	0.8179	0.7723	0.7292	0.6885	0.6501
32. Present Value Debt Free Net Cash Flow	\$531,995	\$518,572	\$495,251	\$468,392	\$442,951	\$423,021
33. Present Value Factor: 7.10% (9)	0.8424	0.7866	0.7344	0.6857	0.6403	0.5978
34. Present Value Debt Free Net Cash Flow	\$517,318	\$498,727	\$470,946	\$440,451	\$411,941	\$388,990
35. Present Value Factor: 5.71% (8)	0.8704	0.8234	0.7789	0.7368	0.6970	0.6594
36. Present Value Debt Free Net Cash Flow	\$534,513	\$522,059	\$499,483	\$473,274	\$448,419	\$429,073
37. Present Value Factor: 6.90% (9)	0.8464	0.7917	0.7406	0.6928	0.6481	0.6063
38. Present Value Debt Free Net Cash Flow	\$519,774	\$501,960	\$474,922	\$445,011	\$416,959	\$394,521

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2029	2030	2031	2032	2033	2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,860,288	1,878,147	1,896,177	1,923,953	1,942,423	1,961,070
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	9,481	0	0	9,805
6. Total Operating Revenues	1,860,288	1,878,147	1,905,658	1,923,953	1,942,423	1,970,875
7. Rate Increase			1%			0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	496,551	506,482	516,612	526,944	537,483	548,233
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	177,770	181,325	184,952	188,651	192,424	196,272
12. LESS: EOS - Professional Services	(98,595)	(100,567)	(102,578)	(104,630)	(106,723)	(108,857)
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	26,564	26,658	26,752	26,900	26,997	27,094
16. Operating Expenses Before Depreciation	602,290	613,899	625,738	637,865	650,182	662,742
17. Depreciation (2)	320,274	325,232	330,268	335,381	340,574	345,848
18. Total Operating Expenses	922,564	939,131	956,006	973,247	990,756	1,008,590
19. Operating Income	937,724	939,016	949,652	950,706	951,667	962,285
20. Revenues (3)	1,860,288	1,878,147	1,905,658	1,923,953	1,942,423	1,970,875
21. EBITDA (4)	1,257,998	1,264,248	1,279,920	1,286,088	1,292,241	1,308,133
22. EBIT (5)	937,724	939,016	949,652	950,706	951,667	962,285
23. EBIT	937,724	939,016	949,652	950,706	951,667	962,285
24. (-) Income Taxes	270,908	271,282	274,355	274,659	274,937	278,004
25. Debt Free Net Income	666,816	667,734	675,297	676,047	676,730	684,281
26. (+) Depreciation & Amortization	320,274	325,232	330,268	335,381	340,574	345,848
27. (-) Capital Expenditures (6)	315,062	319,940	324,894	329,924	335,033	340,220
28. (-) Changes in Working Capital (7)	20,463	20,660	20,962	21,163	21,367	21,680
29. Debt Free Net Cash Flow	\$651,565	\$652,367	\$659,709	\$660,341	\$660,905	\$668,229
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 5.91% (8)	0.6138	0.5796	0.5472	0.5167	0.4879	0.4606
32. Present Value Debt Free Net Cash Flow	\$399,930	\$378,112	\$360,993	\$341,198	\$322,455	\$307,786
33. Present Value Factor: 7.10% (9)	0.5582	0.5212	0.4866	0.4544	0.4243	0.3961
34. Present Value Debt Free Net Cash Flow	\$363,703	\$340,013	\$321,014	\$300,059	\$280,422	\$264,686
35. Present Value Factor: 5.71% (8)	0.6238	0.5901	0.5582	0.5280	0.4995	0.4725
36. Present Value Debt Free Net Cash Flow	\$406,446	\$384,962	\$368,250	\$348,660	\$330,122	\$315,738
37. Present Value Factor: 6.90% (9)	0.5671	0.5305	0.4963	0.4643	0.4343	0.4063
38. Present Value Debt Free Net Cash Flow	\$369,502	\$346,080	\$327,414	\$306,596	\$287,031	\$271,501

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2035	2036	2037	2038	2039	2040
1. OPERATING REVENUES (1)						
2. Charges for services	1,989,796	2,008,898	2,028,183	2,057,892	2,077,648	2,097,593
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	10,141	0	0	10,488
6. Total Operating Revenues	1,989,796	2,008,898	2,038,324	2,057,892	2,077,648	2,108,081
7. Rate Increase			1%			1%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	559,198	570,381	581,789	593,425	605,293	617,399
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	200,198	204,202	208,286	212,452	216,701	221,035
12. LESS: EOS - Professional Services	(111,034)	(113,255)	(115,520)	(117,830)	(120,187)	(122,591)
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	27,248	27,347	27,448	27,607	27,709	27,813
16. Operating Expenses Before Depreciation	675,609	688,676	702,003	715,653	729,516	743,656
17. Depreciation (2)	351,202	356,641	362,163	367,770	373,465	379,247
18. Total Operating Expenses	1,026,812	1,045,317	1,064,166	1,083,423	1,102,981	1,122,903
19. Operating Income	962,984	963,581	974,158	974,469	974,667	985,178
20. Revenues (3)	1,989,796	2,008,898	2,038,324	2,057,892	2,077,648	2,108,081
21. EBITDA (4)	1,314,187	1,320,222	1,336,321	1,342,239	1,348,132	1,364,425
22. EBIT (5)	962,984	963,581	974,158	974,469	974,667	985,178
23. EBIT	962,984	963,581	974,158	974,469	974,667	985,178
24. (-) Income Taxes	278,206	278,379	281,434	281,524	281,581	284,618
25. Debt Free Net Income	684,778	685,202	692,724	692,945	693,086	700,560
26. (+) Depreciation & Amortization	351,202	356,641	362,163	367,770	373,465	379,247
27. (-) Capital Expenditures (6)	345,488	350,838	356,270	361,786	367,388	373,076
28. (-) Changes in Working Capital (7)	21,888	22,098	22,422	22,637	22,854	23,189
29. Debt Free Net Cash Flow	\$668,605	\$668,908	\$676,195	\$676,292	\$676,309	\$683,542
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 5.91% (8)	0.4349	0.4107	0.3877	0.3661	0.3457	0.3264
32. Present Value Debt Free Net Cash Flow	\$290,776	\$274,720	\$262,161	\$247,590	\$233,800	\$223,108
33. Present Value Factor: 7.10% (9)	0.3699	0.3454	0.3225	0.3011	0.2811	0.2625
34. Present Value Debt Free Net Cash Flow	\$247,317	\$231,041	\$218,073	\$203,632	\$190,110	\$179,430
35. Present Value Factor: 5.71% (8)	0.4470	0.4229	0.4000	0.3784	0.3580	0.3386
36. Present Value Debt Free Net Cash Flow	\$298,866	\$282,881	\$270,478	\$255,909	\$242,119	\$231,447
37. Present Value Factor: 6.90% (9)	0.3800	0.3555	0.3326	0.3111	0.2910	0.2722
38. Present Value Debt Free Net Cash Flow	\$254,070	\$237,797	\$224,903	\$210,394	\$196,806	\$186,060

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	2,128,319	2,148,750	2,180,225	2,201,155
3. Other operating revenue	0	0	0	0
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	10,744	0	11,006
6. Total Operating Revenues	2,128,319	2,159,494	2,180,225	2,212,161
7. Rate Increase		1%		1%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	629,747	642,342	655,189	668,293
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	225,455	229,964	234,564	239,255
12. LESS: EOS - Professional Services	(125,042)	(127,543)	(130,094)	(132,696)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	27,978	28,084	28,253	28,360
16. Operating Expenses Before Depreciation	758,138	772,847	787,912	803,212
17. Depreciation (2)	385,119	391,082	397,138	403,287
18. Total Operating Expenses	1,143,257	1,163,929	1,185,049	1,206,499
19. Operating Income	985,062	995,565	995,176	1,005,662
20. Revenues (3)	2,128,319	2,159,494	2,180,225	2,212,161
21. EBITDA (4)	1,370,181	1,386,647	1,392,313	1,408,949
22. EBIT (5)	985,062	995,565	995,176	1,005,662
23. EBIT	985,062	995,565	995,176	1,005,662
24. (-) Income Taxes	284,584	287,619	287,506	290,536
25. Debt Free Net Income	700,478	707,946	707,670	715,126
26. (+) Depreciation & Amortization	385,119	391,082	397,138	403,287
27. (-) Capital Expenditures (6)	378,853	384,719	390,676	396,725
28. (-) Changes in Working Capital (7)	23,412	23,754	23,982	24,334
29. Debt Free Net Cash Flow	\$683,332	\$690,554	\$690,149	\$697,354
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 5.91% (8)	0.3082	0.2910	0.2747	0.2594
32. Present Value Debt Free Net Cash Flow	\$210,603	\$200,951	\$189,584	\$180,894
33. Present Value Factor: 7.10% (9)	0.2451	0.2288	0.2137	0.1995
34. Present Value Debt Free Net Cash Flow	\$167,485	\$157,999	\$147,485	\$139,122
35. Present Value Factor: 5.71% (8)	0.3203	0.3030	0.2867	0.2712
36. Present Value Debt Free Net Cash Flow	\$218,871	\$209,238	\$197,866	\$189,123
37. Present Value Factor: 6.90% (9)	0.2547	0.2382	0.2228	0.2085
38. Present Value Debt Free Net Cash Flow	\$174,045	\$164,490	\$153,765	\$145,398

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

DCF With Capitalization of Terminal Value Model @ 5.91%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$697,354
Divided by Capitalization Factor (8)	5.91%
24th Year Terminal Value	11,799,568
24th Year Present Value Factor (11)	0.2594
Present Value of Terminal Value	3,060,808
Present Value Debt Free Net	
Cash Flow for 24 Years	8,220,459
Indicated Value	\$11,281,267

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 5.91%			
		Multiples (13)	Terminal Value
Projected EBIT	\$1,005,662	23.8	\$23,934,756
Projected EBITDA	1,408,949	15.7	22,120,503
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			22,719,206
24th Year Present Value Factor (11)			0.2594
Present Value of Terminal Value			5,893,362
Present Value Debt Free Net			
Cash Flow for 24 Years			8,220,459
Indicated Value			\$14,113,821

DCF With Capitalization of Terminal Value Model @ 7.10%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$697,354
Divided by Capitalization Factor (9)	7.10%
24th Year Terminal Value	9,821,894
24th Year Present Value Factor (12)	0.1995
Present Value of Terminal Value	1,959,468
Present Value Debt Free Net	
Cash Flow for 24 Years	7,384,549
Indicated Value	\$9,344,017

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.10%			
		Multiples (13)	Terminal Value
Projected EBIT	\$1,005,662	23.8	\$23,934,756
Projected EBITDA	1,408,949	15.7	22,120,503
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			22,719,206
24th Year Present Value Factor (12)			0.1995
Present Value of Terminal Value			4,532,482
Present Value Debt Free Net			
Cash Flow for 24 Years			7,384,549
Indicated Value			\$11,917,031

DCF With Capitalization of Terminal Value Model @ 5.71%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$697,354
Divided by Capitalization Factor (8)	5.71%
24th Year Terminal Value	12,212,863
24th Year Present Value Factor (11)	0.2594
Present Value of Terminal Value	3,168,017
Present Value Debt Free Net	
Cash Flow for 24 Years	8,220,459
Indicated Value	\$11,388,476

DCF With Capitalization of Terminal Value Model @ 6.90%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$697,354
Divided by Capitalization Factor (9)	6.90%
24th Year Terminal Value	10,106,586
24th Year Present Value Factor (12)	0.1995
Present Value of Terminal Value	2,016,264
Present Value Debt Free Net	
Cash Flow for 24 Years	7,384,549
Indicated Value	\$9,400,813

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

Notes: (1) Assumptions:

Charges for services - Pre-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 1.82% 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 8/31/2020 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 8/31/2020 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

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

	Actual			Budget	Estimated	Estimated
				Year 0	Year 1	Year 2
	2017	2018	2019	2020	2021	2022
1. OPERATING REVENUES (1)						
2. Charges for services	1,312,039	1,362,072	1,374,115	1,354,500	1,364,934	1,387,055
3. Other operating revenue	0	0	6,127	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	208,058
6. Total Operating Revenues	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,595,113
7. Rate Increase						15%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	595,002	425,021	354,533	415,492	423,802	432,278
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	137,700	8,169	166,831	175,000	151,725	154,760
12. LESS: EOS - Professional Services	0	0	0	0	(84,150)	(85,833)
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	732,702	433,190	521,364	590,492	491,377	501,204
16. Depreciation (2)	0	0	0	440,738	443,548	450,415
17. Total Operating Expenses	732,702	433,190	521,364	1,031,230	934,925	951,620
18. Operating Income	579,337	928,882	858,878	323,270	430,009	643,493
19. Revenues (3)	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	1,595,113
20. EBITDA (4)	579,337	928,882	858,878	764,008	873,557	1,093,909
21. EBIT (5)	579,337	928,882	858,878	323,270	430,009	643,493
22. EBIT	579,337	928,882	858,878	323,270	430,009	643,493
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	579,337	928,882	858,878	323,270	430,009	643,493
25. (+) Depreciation & Amortization	0	0	0	440,738	443,548	450,415
26. (-) Capital Expenditures (6)	320,901	469,500	97,860	0	436,331	443,087
27. (-) Changes in Working Capital (7)	14,432	14,983	15,183	14,900	15,014	17,546
28. Debt Free Net Cash Flow	\$244,004	\$444,399	\$745,835	\$749,109	\$422,212	\$633,275
29. PV Time Period (mid-year)				(0.5)	0.5	1.5
30. Present Value Factor: 3.35% (8)					0.9837	0.9518
31. Present Value Debt Free Net Cash Flow					\$415,330	\$602,752
32. Present Value Factor: 3.15% (9)					0.9846	0.9545
33. Present Value Debt Free Net Cash Flow					\$415,710	\$604,461

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 3 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	1,654,653	1,696,872	1,713,175	1,729,621	1,754,084	1,770,923
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	7,783	0	1,771
6. Total Operating Revenues	1,654,653	1,696,872	1,713,175	1,737,404	1,754,084	1,772,694
7. Rate Increase				0%		0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	440,923	449,742	458,737	467,911	477,270	486,815
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	157,855	161,012	164,232	167,517	170,867	174,284
12. LESS: EOS - Professional Services	(87,550)	(89,301)	(91,087)	(92,908)	(94,767)	(96,662)
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	511,228	521,453	531,882	542,520	553,370	564,438
16. Depreciation (2)	457,390	464,472	471,664	478,967	486,383	493,914
17. Total Operating Expenses	968,619	985,925	1,003,546	1,021,487	1,039,753	1,058,351
18. Operating Income	686,034	710,947	709,629	715,917	714,331	714,343
19. Revenues (3)	1,654,653	1,696,872	1,713,175	1,737,404	1,754,084	1,772,694
20. EBITDA (4)	1,143,425	1,175,419	1,181,293	1,194,884	1,200,714	1,208,256
21. EBIT (5)	686,034	710,947	709,629	715,917	714,331	714,343
22. EBIT	686,034	710,947	709,629	715,917	714,331	714,343
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	686,034	710,947	709,629	715,917	714,331	714,343
25. (+) Depreciation & Amortization	457,390	464,472	471,664	478,967	486,383	493,914
26. (-) Capital Expenditures (6)	449,947	456,914	463,989	471,173	478,468	485,877
27. (-) Changes in Working Capital (7)	18,201	18,666	18,845	19,111	19,295	19,500
28. Debt Free Net Cash Flow	\$675,276	\$699,839	\$698,459	\$704,600	\$702,951	\$702,880
29. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
30. Present Value Factor: 3.35% (8)	0.9209	0.8911	0.8622	0.8342	0.8072	0.7810
31. Present Value Debt Free Net Cash Flow	\$621,862	\$623,627	\$602,211	\$587,777	\$567,422	\$548,949
32. Present Value Factor: 3.15% (9)	0.9254	0.8971	0.8697	0.8432	0.8174	0.7925
33. Present Value Debt Free Net Cash Flow	\$624,901	\$627,826	\$607,450	\$594,119	\$574,592	\$557,032

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2029	2030	2031	2032	2033	2034
1. OPERATING REVENUES (1)						
2. Charges for services	1,789,712	1,806,893	1,832,448	1,850,040	1,876,205	1,894,217
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	8,131	0	8,325	0	1,894
6. Total Operating Revenues	1,789,712	1,815,024	1,832,448	1,858,365	1,876,205	1,896,111
7. Rate Increase		0%		0%		0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	496,551	506,482	516,612	526,944	537,483	548,233
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	177,770	181,325	184,952	188,651	192,424	196,272
12. LESS: EOS - Professional Services	(98,595)	(100,567)	(102,578)	(104,630)	(106,723)	(108,857)
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	575,726	587,241	598,986	610,965	623,185	635,648
16. Depreciation (2)	501,561	509,328	517,213	525,221	533,354	541,613
17. Total Operating Expenses	1,077,287	1,096,568	1,116,199	1,136,187	1,156,539	1,177,261
18. Operating Income	712,425	718,456	716,249	722,178	719,666	718,850
19. Revenues (3)	1,789,712	1,815,024	1,832,448	1,858,365	1,876,205	1,896,111
20. EBITDA (4)	1,213,986	1,227,783	1,233,462	1,247,400	1,253,020	1,260,463
21. EBIT (5)	712,425	718,456	716,249	722,178	719,666	718,850
22. EBIT	712,425	718,456	716,249	722,178	719,666	718,850
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	712,425	718,456	716,249	722,178	719,666	718,850
25. (+) Depreciation & Amortization	501,561	509,328	517,213	525,221	533,354	541,613
26. (-) Capital Expenditures (6)	493,400	501,039	508,797	516,675	524,675	532,799
27. (-) Changes in Working Capital (7)	19,687	19,965	20,157	20,442	20,638	20,857
28. Debt Free Net Cash Flow	\$700,899	\$706,779	\$704,508	\$710,283	\$707,707	\$706,806
29. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
30. Present Value Factor: 3.35% (8)	0.7557	0.7312	0.7075	0.6846	0.6624	0.6409
31. Present Value Debt Free Net Cash Flow	\$529,669	\$516,797	\$498,440	\$486,259	\$468,785	\$452,992
32. Present Value Factor: 3.15% (9)	0.7683	0.7448	0.7221	0.7000	0.6786	0.6579
33. Present Value Debt Free Net Cash Flow	\$538,501	\$526,409	\$508,726	\$497,198	\$480,250	\$465,008

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2035	2036	2037	2038	2039	2040
1. OPERATING REVENUES (1)						
2. Charges for services	1,914,314	1,932,691	1,960,025	1,978,842	2,006,829	2,026,094
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	8,697	0	8,905	0	2,026
6. Total Operating Revenues	1,914,314	1,941,388	1,960,025	1,987,747	2,006,829	2,028,120
7. Rate Increase		0%		0%		0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	559,198	570,381	581,789	593,425	605,293	617,399
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	200,198	204,202	208,286	212,452	216,701	221,035
12. LESS: EOS - Professional Services	(111,034)	(113,255)	(115,520)	(117,830)	(120,187)	(122,591)
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	648,361	661,329	674,555	688,046	701,807	715,843
16. Depreciation (2)	549,999	558,515	567,162	575,943	584,861	593,917
17. Total Operating Expenses	1,198,360	1,219,843	1,241,717	1,263,990	1,286,668	1,309,760
18. Operating Income	715,954	721,545	718,308	723,757	720,161	718,360
19. Revenues (3)	1,914,314	1,941,388	1,960,025	1,987,747	2,006,829	2,028,120
20. EBITDA (4)	1,265,953	1,280,059	1,285,470	1,299,701	1,305,022	1,312,277
21. EBIT (5)	715,954	721,545	718,308	723,757	720,161	718,360
22. EBIT	715,954	721,545	718,308	723,757	720,161	718,360
23. (-) Income Taxes	0	0	0	0	0	0
24. Debt Free Net Income	715,954	721,545	718,308	723,757	720,161	718,360
25. (+) Depreciation & Amortization	549,999	558,515	567,162	575,943	584,861	593,917
26. (-) Capital Expenditures (6)	541,049	549,426	557,933	566,572	575,345	584,253
27. (-) Changes in Working Capital (7)	21,057	21,355	21,560	21,865	22,075	22,309
28. Debt Free Net Cash Flow	\$703,846	\$709,278	\$705,977	\$711,264	\$707,602	\$705,714
29. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
30. Present Value Factor: 3.35% (8)	0.6202	0.6001	0.5806	0.5618	0.5436	0.5260
31. Present Value Debt Free Net Cash Flow	\$436,525	\$425,638	\$409,890	\$399,588	\$384,652	\$371,206
32. Present Value Factor: 3.15% (9)	0.6378	0.6183	0.5995	0.5812	0.5634	0.5462
33. Present Value Debt Free Net Cash Flow	\$448,913	\$438,547	\$423,233	\$413,386	\$398,663	\$385,461

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	2,047,590	2,067,247	2,096,485	2,116,611
3. Other operating revenue	0	0	0	0
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	9,303	0	9,525
6. Total Operating Revenues	2,047,590	2,076,550	2,096,485	2,126,136
7. Rate Increase		0%		0%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	629,747	642,342	655,189	668,293
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	225,455	229,964	234,564	239,255
12. LESS: EOS - Professional Services	(125,042)	(127,543)	(130,094)	(132,696)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. Operating Expenses Before Depreciation	730,160	744,763	759,659	774,852
16. Depreciation (2)	603,113	612,452	621,935	631,565
17. Total Operating Expenses	1,333,273	1,357,215	1,381,593	1,406,416
18. Operating Income	714,317	719,335	714,892	719,720
19. Revenues (3)	2,047,590	2,076,550	2,096,485	2,126,136
20. EBITDA (4)	1,317,430	1,331,787	1,336,826	1,351,284
21. EBIT (5)	714,317	719,335	714,892	719,720
22. EBIT	714,317	719,335	714,892	719,720
23. (-) Income Taxes	0	0	0	0
24. Debt Free Net Income	714,317	719,335	714,892	719,720
25. (+) Depreciation & Amortization	603,113	612,452	621,935	631,565
26. (-) Capital Expenditures (6)	593,299	602,486	611,815	621,288
27. (-) Changes in Working Capital (7)	22,523	22,842	23,061	23,387
28. Debt Free Net Cash Flow	\$701,607	\$706,459	\$701,950	\$706,609
29. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
30. Present Value Factor: 3.35% (8)	0.5089	0.4924	0.4764	0.4610
31. Present Value Debt Free Net Cash Flow	\$357,048	\$347,860	\$334,409	\$325,747
32. Present Value Factor: 3.15% (9)	0.5295	0.5133	0.4977	0.4825
33. Present Value Debt Free Net Cash Flow	\$371,501	\$362,625	\$349,361	\$340,939

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

DCF With Capitalization of Terminal Value Model @ 3.35%	
	<u>Terminal Value</u>
Projected Debt Free Net Cash Flow (10)	\$706,609
Divided by Capitalization Factor (8)	<u>3.35%</u>
24th Year Terminal Value	21,092,798
24th Year Present Value Factor (11)	<u>0.4610</u>
Present Value of Terminal Value	9,723,780
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>11,315,436</u>
Indicated Value	<u><u>\$21,039,215</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.35%			
		<u>Multiples (13)</u>	<u>Terminal Value</u>
Projected EBIT	\$719,720	23.8	\$17,129,329
Projected EBITDA	1,351,284	15.7	<u>21,215,162</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,866,837
24th Year Present Value Factor (11)			<u>0.4610</u>
Present Value of Terminal Value			9,158,612
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>11,315,436</u>
Indicated Value			<u><u>\$20,474,048</u></u>

DCF With Capitalization of Terminal Value Model @ 3.15%	
	<u>Terminal Value</u>
Projected Debt Free Net Cash Flow (10)	\$706,609
Divided by Capitalization Factor (9)	<u>3.15%</u>
24th Year Terminal Value	22,432,023
24th Year Present Value Factor (12)	<u>0.4610</u>
Present Value of Terminal Value	10,341,163
Present Value Debt Free Net	
Cash Flow for 24 Years	<u>11,315,436</u>
Indicated Value	<u><u>\$21,656,598</u></u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 3.15%			
		<u>Multiples (13)</u>	<u>Terminal Value</u>
Projected EBIT	\$719,720	23.8	\$17,129,329
Projected EBITDA	1,351,284	15.7	<u>21,215,162</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			19,866,837
24th Year Present Value Factor (12)			<u>0.4610</u>
Present Value of Terminal Value			9,158,612
Present Value Debt Free Net			
Cash Flow for 24 Years			<u>11,315,436</u>
Indicated Value			<u><u>\$20,474,048</u></u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

Notes: (1) Assumptions:

Charges for services - Pre-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 1.82% 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 8/31/2020 equal to discount rate, where capitalization rate = $K - g$.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate (K) at 8/31/2020 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

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

	Actual			Budget	Estimated	Estimated
				Year 0	Year 1	Year 2
	2017	2018	2019	2020	2021	2022
1. OPERATING REVENUES (1)						
2. Charges for services	1,312,039	1,362,072	1,374,115	1,354,500	1,364,934	1,387,055
3. Other operating revenue	0	0	6,127	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	0	0	0	790,622
6. Total Operating Revenues	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	2,177,677
7. Rate Increase						57%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	595,002	425,021	354,533	415,492	423,802	432,278
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	137,700	8,169	166,831	175,000	151,725	154,760
12. LESS: EOS - Professional Services	0	0	0	0	(84,150)	(85,833)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	0	0	0	0	31,420	31,469
16. Operating Expenses Before Depreciation	732,702	433,190	521,364	590,492	522,797	532,673
17. Depreciation (2)	0	0	0	440,738	443,548	450,415
18. Total Operating Expenses	732,702	433,190	521,364	1,031,230	966,345	983,089
19. Operating Income	579,337	928,882	858,878	323,270	398,589	1,194,588
20. Revenues (3)	1,312,039	1,362,072	1,380,242	1,354,500	1,364,934	2,177,677
21. EBITDA (4)	579,337	928,882	858,878	764,008	842,137	1,645,004
22. EBIT (5)	579,337	928,882	858,878	323,270	398,589	1,194,588
23. EBIT	579,337	928,882	858,878	323,270	398,589	1,194,588
24. (-) Income Taxes	0	0	0	93,393	115,152	345,117
25. Debt Free Net Income	579,337	928,882	858,878	229,877	283,437	849,471
26. (+) Depreciation & Amortization	0	0	0	440,738	443,548	450,415
27. (-) Capital Expenditures (6)	320,901	469,500	97,860	0	436,331	443,087
28. (-) Changes in Working Capital (7)	14,432	14,983	15,183	14,900	15,014	23,954
29. Debt Free Net Cash Flow	\$244,004	\$444,399	\$745,835	\$655,716	\$275,640	\$832,845
30. PV Time Period (mid-year)				(0.5)	0.5	1.5
31. Present Value Factor: 5.91% (8)					0.9717	0.9175
32. Present Value Debt Free Net Cash Flow					\$267,839	\$764,135
33. Present Value Factor: 7.10% (9)					0.9663	0.9022
34. Present Value Debt Free Net Cash Flow					\$266,351	\$751,393
35. Present Value Factor: 5.71% (8)					0.9726	0.9201
36. Present Value Debt Free Net Cash Flow					\$268,087	\$766,301
37. Present Value Factor: 6.90% (9)					0.9672	0.9048
38. Present Value Debt Free Net Cash Flow					\$266,599	\$753,558

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 3 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	2,258,961	2,316,599	2,338,856	2,373,116	2,395,897	2,418,898
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	11,694	0	0	12,094
6. Total Operating Revenues	2,258,961	2,316,599	2,350,550	2,373,116	2,395,897	2,430,992
7. Rate Increase			0%			0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	440,923	449,742	458,737	467,911	477,270	486,815
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	157,855	161,012	164,232	167,517	170,867	174,284
12. LESS: EOS - Professional Services	(87,550)	(89,301)	(91,087)	(92,908)	(94,767)	(96,662)
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	36,083	36,534	36,852	37,035	37,151	37,270
16. Operating Expenses Before Depreciation	547,311	557,987	568,734	579,555	590,521	601,708
17. Depreciation (2)	457,390	464,472	471,664	478,967	486,383	493,914
18. Total Operating Expenses	1,004,702	1,022,459	1,040,398	1,058,522	1,076,904	1,095,621
19. Operating Income	1,254,259	1,294,140	1,310,152	1,314,594	1,318,993	1,335,371
20. Revenues (3)	2,258,961	2,316,599	2,350,550	2,373,116	2,395,897	2,430,992
21. EBITDA (4)	1,711,650	1,758,612	1,781,816	1,793,561	1,805,376	1,829,284
22. EBIT (5)	1,254,259	1,294,140	1,310,152	1,314,594	1,318,993	1,335,371
23. EBIT	1,254,259	1,294,140	1,310,152	1,314,594	1,318,993	1,335,371
24. (-) Income Taxes	362,356	373,877	378,503	379,786	381,057	385,789
25. Debt Free Net Income	891,903	920,263	931,649	934,808	937,936	949,582
26. (+) Depreciation & Amortization	457,390	464,472	471,664	478,967	486,383	493,914
27. (-) Capital Expenditures (6)	449,947	456,914	463,989	471,173	478,468	485,877
28. (-) Changes in Working Capital (7)	24,849	25,483	25,856	26,104	26,355	26,741
29. Debt Free Net Cash Flow	\$874,498	\$902,338	\$913,468	\$916,498	\$919,496	\$930,878
30. PV Time Period (mid-year)	2.5	3.5	4.5	5.5	6.5	7.5
31. Present Value Factor: 5.91% (8)	0.8663	0.8179	0.7723	0.7292	0.6885	0.6501
32. Present Value Debt Free Net Cash Flow	\$757,578	\$738,023	\$705,471	\$668,310	\$633,073	\$605,163
33. Present Value Factor: 7.10% (9)	0.8424	0.7866	0.7344	0.6857	0.6403	0.5978
34. Present Value Debt Free Net Cash Flow	\$736,677	\$709,779	\$670,851	\$628,443	\$588,753	\$556,479
35. Present Value Factor: 5.71% (8)	0.8704	0.8234	0.7789	0.7368	0.6970	0.6594
36. Present Value Debt Free Net Cash Flow	\$761,163	\$742,985	\$711,500	\$675,276	\$640,889	\$613,821
37. Present Value Factor: 6.90% (9)	0.8464	0.7917	0.7406	0.6928	0.6481	0.6063
38. Present Value Debt Free Net Cash Flow	\$740,175	\$714,381	\$676,514	\$634,950	\$595,925	\$564,391

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 9	Estimated Year 10	Estimated Year 11	Estimated Year 12	Estimated Year 13	Estimated Year 14
	2029	2030	2031	2032	2033	2034
1. OPERATING REVENUES (1)						
2. Charges for services	2,454,330	2,477,892	2,501,679	2,538,324	2,562,692	2,587,294
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	12,508	0	0	12,936
6. Total Operating Revenues	2,454,330	2,477,892	2,514,187	2,538,324	2,562,692	2,600,230
7. Rate Increase			0%			0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	496,551	506,482	516,612	526,944	537,483	548,233
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	177,770	181,325	184,952	188,651	192,424	196,272
12. LESS: EOS - Professional Services	(98,595)	(100,567)	(102,578)	(104,630)	(106,723)	(108,857)
13. LESS: EOS - Eliminated Expenses	0	0	0	0	0	0
14. ADD: Additional O&M	0	0	0	0	0	0
15. ADD: PURTA & Reg Assessment	37,458	37,579	37,701	37,896	38,021	38,147
16. Operating Expenses Before Depreciation	613,184	624,820	636,687	648,861	661,206	673,795
17. Depreciation (2)	501,561	509,328	517,213	525,221	533,354	541,613
18. Total Operating Expenses	1,114,745	1,134,147	1,153,900	1,174,083	1,194,560	1,215,408
19. Operating Income	1,339,585	1,343,745	1,360,287	1,364,241	1,368,132	1,384,822
20. Revenues (3)	2,454,330	2,477,892	2,514,187	2,538,324	2,562,692	2,600,230
21. EBITDA (4)	1,841,146	1,853,072	1,877,500	1,889,463	1,901,486	1,926,435
22. EBIT (5)	1,339,585	1,343,745	1,360,287	1,364,241	1,368,132	1,384,822
23. EBIT	1,339,585	1,343,745	1,360,287	1,364,241	1,368,132	1,384,822
24. (-) Income Taxes	387,006	388,208	392,987	394,129	395,253	400,075
25. Debt Free Net Income	952,579	955,537	967,300	970,112	972,879	984,747
26. (+) Depreciation & Amortization	501,561	509,328	517,213	525,221	533,354	541,613
27. (-) Capital Expenditures (6)	493,400	501,039	508,797	516,675	524,675	532,799
28. (-) Changes in Working Capital (7)	26,998	27,257	27,656	27,922	28,190	28,603
29. Debt Free Net Cash Flow	\$933,742	\$936,568	\$948,060	\$950,737	\$953,369	\$964,958
30. PV Time Period (mid-year)	8.5	9.5	10.5	11.5	12.5	13.5
31. Present Value Factor: 5.91% (8)	0.6138	0.5796	0.5472	0.5167	0.4879	0.4606
32. Present Value Debt Free Net Cash Flow	\$573,131	\$542,835	\$518,779	\$491,246	\$465,149	\$444,460
33. Present Value Factor: 7.10% (9)	0.5582	0.5212	0.4866	0.4544	0.4243	0.3961
34. Present Value Debt Free Net Cash Flow	\$521,215	\$488,139	\$461,326	\$432,015	\$404,514	\$382,220
35. Present Value Factor: 5.71% (8)	0.6238	0.5901	0.5582	0.5280	0.4995	0.4725
36. Present Value Debt Free Net Cash Flow	\$582,468	\$552,669	\$529,207	\$501,989	\$476,208	\$455,943
37. Present Value Factor: 6.90% (9)	0.5671	0.5305	0.4963	0.4643	0.4343	0.4063
38. Present Value Debt Free Net Cash Flow	\$529,525	\$496,850	\$470,522	\$441,427	\$414,048	\$392,062

See last page of this EXHIBIT for notes and assumptions.

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

	Estimated Year 15	Estimated Year 16	Estimated Year 17	Estimated Year 18	Estimated Year 19	Estimated Year 20
	2035	2036	2037	2038	2039	2040
1. OPERATING REVENUES (1)						
2. Charges for services	2,625,192	2,650,394	2,675,838	2,715,034	2,741,098	2,767,413
3. Other operating revenue	0	0	0	0	0	0
4. Tap Fees	0	0	0	0	0	0
5. Other (Rate Increase)	0	0	13,379	0	0	13,837
6. Total Operating Revenues	2,625,192	2,650,394	2,689,217	2,715,034	2,741,098	2,781,250
7. Rate Increase			0%			0%
8. OPERATING EXPENSES (1)						
9. Operating & Maintenance Expenses	559,198	570,381	581,789	593,425	605,293	617,399
10. Remove Economies of Scale						
11. LESS: EOS - Wages & Benefits	200,198	204,202	208,286	212,452	216,701	221,035
12. LESS: EOS - Professional Services	(111,034)	(113,255)	(115,520)	(117,830)	(120,187)	(122,591)
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	38,348	38,477	38,608	38,816	38,949	39,084
16. Operating Expenses Before Depreciation	686,709	699,806	713,163	726,862	740,756	754,927
17. Depreciation (2)	549,999	558,515	567,162	575,943	584,861	593,917
18. Total Operating Expenses	1,236,708	1,258,320	1,280,325	1,302,806	1,325,617	1,348,844
19. Operating Income	1,388,484	1,392,074	1,408,892	1,412,228	1,415,481	1,432,406
20. Revenues (3)	2,625,192	2,650,394	2,689,217	2,715,034	2,741,098	2,781,250
21. EBITDA (4)	1,938,483	1,950,588	1,976,054	1,988,172	2,000,342	2,026,323
22. EBIT (5)	1,388,484	1,392,074	1,408,892	1,412,228	1,415,481	1,432,406
23. EBIT	1,388,484	1,392,074	1,408,892	1,412,228	1,415,481	1,432,406
24. (-) Income Taxes	401,133	402,170	407,029	407,993	408,932	413,822
25. Debt Free Net Income	987,351	989,904	1,001,863	1,004,235	1,006,549	1,018,584
26. (+) Depreciation & Amortization	549,999	558,515	567,162	575,943	584,861	593,917
27. (-) Capital Expenditures (6)	541,049	549,426	557,933	566,572	575,345	584,253
28. (-) Changes in Working Capital (7)	28,877	29,154	29,581	29,865	30,152	30,594
29. Debt Free Net Cash Flow	\$967,424	\$969,838	\$981,511	\$983,741	\$985,913	\$997,654
30. PV Time Period (mid-year)	14.5	15.5	16.5	17.5	18.5	19.5
31. Present Value Factor: 5.91% (8)	0.4349	0.4107	0.3877	0.3661	0.3457	0.3264
32. Present Value Debt Free Net Cash Flow	\$420,733	\$398,313	\$380,532	\$360,148	\$340,830	\$325,634
33. Present Value Factor: 7.10% (9)	0.3699	0.3454	0.3225	0.3011	0.2811	0.2625
34. Present Value Debt Free Net Cash Flow	\$357,850	\$334,982	\$316,537	\$296,205	\$277,140	\$261,884
35. Present Value Factor: 5.71% (8)	0.4470	0.4229	0.4000	0.3784	0.3580	0.3386
36. Present Value Debt Free Net Cash Flow	\$432,438	\$410,145	\$392,604	\$372,248	\$352,957	\$337,806
37. Present Value Factor: 6.90% (9)	0.3800	0.3555	0.3326	0.3111	0.2910	0.2722
38. Present Value Debt Free Net Cash Flow	\$367,621	\$344,777	\$326,450	\$306,042	\$286,901	\$271,561

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

	Estimated Year 21 2041	Estimated Year 22 2042	Estimated Year 23 2043	Estimated Year 24 2044
1. OPERATING REVENUES (1)				
2. Charges for services	2,807,950	2,834,906	2,876,432	2,904,045
3. Other operating revenue	0	0	0	0
4. Tap Fees	0	0	0	0
5. Other (Rate Increase)	0	14,175	0	14,520
6. Total Operating Revenues	2,807,950	2,849,081	2,876,432	2,918,565
7. Rate Increase		1%		0%
8. OPERATING EXPENSES (1)				
9. Operating & Maintenance Expenses	629,747	642,342	655,189	668,293
10. Remove Economies of Scale				
11. LESS: EOS - Wages & Benefits	225,455	229,964	234,564	239,255
12. LESS: EOS - Professional Services	(125,042)	(127,543)	(130,094)	(132,696)
13. LESS: EOS - Eliminated Expenses	0	0	0	0
14. ADD: Additional O&M	0	0	0	0
15. ADD: PURTA & Reg Assessment	39,298	39,436	39,655	39,797
16. Operating Expenses Before Depreciation	769,458	784,199	799,314	814,649
17. Depreciation (2)	603,113	612,452	621,935	631,565
18. Total Operating Expenses	1,372,571	1,396,651	1,421,248	1,446,213
19. Operating Income	1,435,379	1,452,430	1,455,184	1,472,352
20. Revenues (3)	2,807,950	2,849,081	2,876,432	2,918,565
21. EBITDA (4)	2,038,492	2,064,882	2,077,118	2,103,916
22. EBIT (5)	1,435,379	1,452,430	1,455,184	1,472,352
23. EBIT	1,435,379	1,452,430	1,455,184	1,472,352
24. (-) Income Taxes	414,681	419,607	420,403	425,362
25. Debt Free Net Income	1,020,698	1,032,823	1,034,781	1,046,990
26. (+) Depreciation & Amortization	603,113	612,452	621,935	631,565
27. (-) Capital Expenditures (6)	593,299	602,486	611,815	621,288
28. (-) Changes in Working Capital (7)	30,887	31,340	31,641	32,104
29. Debt Free Net Cash Flow	\$999,624	\$1,011,449	\$1,013,260	\$1,025,162
30. PV Time Period (mid-year)	20.5	21.5	22.5	23.5
31. Present Value Factor: 5.91% (8)	0.3082	0.2910	0.2747	0.2594
32. Present Value Debt Free Net Cash Flow	\$308,084	\$294,332	\$278,342	\$265,927
33. Present Value Factor: 7.10% (9)	0.2451	0.2288	0.2137	0.1995
34. Present Value Debt Free Net Cash Flow	\$245,008	\$231,419	\$216,534	\$204,520
35. Present Value Factor: 5.71% (8)	0.3203	0.3030	0.2867	0.2712
36. Present Value Debt Free Net Cash Flow	\$320,180	\$306,469	\$290,502	\$278,024
37. Present Value Factor: 6.90% (9)	0.2547	0.2382	0.2228	0.2085
38. Present Value Debt Free Net Cash Flow	\$254,604	\$240,927	\$225,754	\$213,746

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

DCF With Capitalization of Terminal Value Model @ 5.91%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,025,162
Divided by Capitalization Factor (8)	5.91%
24th Year Terminal Value	17,346,227
24th Year Present Value Factor (11)	0.2594
Present Value of Terminal Value	4,499,611
Present Value Debt Free Net	
Cash Flow for 24 Years	11,548,066
Indicated Value	\$16,047,677

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 5.91%			
		Multiples (13)	Terminal Value
Projected EBIT	\$1,472,352	23.8	\$35,041,970
Projected EBITDA	2,103,916	15.7	33,031,485
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			33,694,945
24th Year Present Value Factor (11)			0.2594
Present Value of Terminal Value			8,740,469
Present Value Debt Free Net			
Cash Flow for 24 Years			11,548,066
Indicated Value			\$20,288,534

DCF With Capitalization of Terminal Value Model @ 7.10%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,025,162
Divided by Capitalization Factor (9)	7.10%
24th Year Terminal Value	14,438,902
24th Year Present Value Factor (12)	0.1995
Present Value of Terminal Value	2,880,561
Present Value Debt Free Net	
Cash Flow for 24 Years	10,340,234
Indicated Value	\$13,220,795

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.10%			
		Multiples (13)	Terminal Value
Projected EBIT	\$1,472,352	23.8	\$35,041,970
Projected EBITDA	2,103,916	15.7	33,031,485
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			33,694,945
24th Year Present Value Factor (12)			0.1995
Present Value of Terminal Value			6,722,142
Present Value Debt Free Net			
Cash Flow for 24 Years			10,340,234
Indicated Value			\$17,062,376

DCF With Capitalization of Terminal Value Model @ 5.71%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,025,162
Divided by Capitalization Factor (8)	5.71%
24th Year Terminal Value	17,953,800
24th Year Present Value Factor (11)	0.2594
Present Value of Terminal Value	4,657,216
Present Value Debt Free Net	
Cash Flow for 24 Years	11,548,066
Indicated Value	\$16,205,281

DCF With Capitalization of Terminal Value Model @ 6.90%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$1,025,162
Divided by Capitalization Factor (9)	6.90%
24th Year Terminal Value	14,857,420
24th Year Present Value Factor (12)	0.1995
Present Value of Terminal Value	2,964,055
Present Value Debt Free Net	
Cash Flow for 24 Years	10,340,234
Indicated Value	\$13,304,289

See last page of this EXHIBIT for notes and assumptions.

Income Approach

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

Notes: (1) Assumptions:

Charges for services - Pre-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 1.82% 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 8/31/2020 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 8/31/2020 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
Upper Pottsgrove Township Wastewater System Assets
2018 Operations
Market Multiple Method

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u> (Col B × Col C)	<u>E</u> (Col A × Col D)
Subject Company Statistic (1)	Comparison Group's Valuation Multiples 8/31/2020	Upper Pottsgrove's Growth & Risk Adjustment	Upper Pottsgrove's Risk Adjusted Valuation Multiples 8/31/2020	Upper Pottsgrove's Market Multiples Valuation
Risk Adjusted Multiple				
1. Upper Pottsgrove Township Wastewater System Assets				
2. Investor Provided Capital	\$0	1.94	75.00%	1.46
3. Gross PP&E	\$15,295,347	1.47	79.00%	1.16
4. Net PP&E	\$11,548,897	1.84	79.00%	1.45
5. Revenues	\$1,380,242	8.44	75.00%	6.33
6. EBITDA	\$858,878	20.99	75.00%	15.74
7. EBIT	\$858,878	31.75	75.00%	23.81
8. Customers	1,428	\$10,104	80.00%	\$8,083
9. Population	5,530	\$2,861	80.00%	\$2,289
10.				
11. Average				<u>\$14,484,965</u>

Conclusion of Market Multiple Method Valuation				
		<u>Low</u>	<u>High</u>	<u>Conclusion</u>
12.	Capital Items	\$16,745,901	\$17,742,603	\$17,244,252
13.	(Items 3-4)			
14.	Income Statement Items	8,736,932	20,449,885	-
15.	(Items 5 -7)			
16.	Demographics Items	11,542,524	12,658,170	<u>12,100,347</u>
17.	(Item 8)			
			Conclusion	<u>\$14,672,299</u>

Market Multiples Method
Upper Pottsgrove Township Wastewater System Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2019		8/31/2020
	Gross PP&E	Net PP&E	Invest. Total Capital	12 Mos. Rev.	12 Mos. EBITDA	12 Mos. EBIT	Customers	Population	Enterprise Value
	(\$ Mill)	(\$ Mill)	(\$ Mill)	(\$ Mill)	(\$ Mill)	(\$ Mill)			(\$ Mill)
American States Water Co	\$2,001.739	\$1,453.597	\$1,130.892	\$481.213	\$168.146	\$134.431	285,128	1,000,000	\$3,342.280
American Water Works Company Inc	\$24,452.000	\$18,689.000	\$16,663.000	\$3,641.000	\$1,816.000	\$1,233.000	3,434,000	15,000,000	\$35,704.383
Artesian Resources Corp	\$681.387	\$541.457	\$316.837	\$84.110	\$36.303	\$25.463	92,640	300,000	\$488.618
California Water Service Group	\$3,616.418	\$2,446.971	\$1,898.571	\$714.009	\$194.896	\$101.408	520,600	2,000,000	\$3,307.546
Essential Utilities, Inc.	\$10,860.174	\$8,954.900	\$9,899.183	\$944.145	\$546.029	\$382.718	1,026,704	3,000,000	\$16,052.756
Middlesex Water Co	\$917.712	\$742.701	\$611.202	\$135.669	\$50.945	\$34.195	120,000	400,000	\$1,397.813
SJW Corp.	\$3,266.380	\$2,269.000	\$2,354.250	\$458.554	\$146.905	\$71.737	386,607	1,604,442	\$3,245.849
York Water Company (The)	\$404.558	\$317.707	\$240.568	\$52.624	\$30.508	\$22.687	71,411	201,000	\$700.589
Average	\$5,775.046	\$4,426.917	\$4,139.313	\$813.916	\$373.717	\$250.705	742,136	2,938,180	\$8,029.979
Max	\$24,452.000	\$18,689.000	\$16,663.000	\$3,641.000	\$1,816.000	\$1,233.000	3,434,000	15,000,000	\$35,704.383
Min	\$404.558	\$317.707	\$240.568	\$52.624	\$30.508	\$22.687	71,411	201,000	\$488.618
Median	\$2,634.060	\$1,861.299	\$1,514.732	\$469.884	\$157.526	\$86.573	335,868	1,302,221	\$3,276.698

	Enterprise Value as a Multiple of								Population Per Customer
	Invest. Capital	Gross PP&E	Net PP&E	Rev.	EBITDA	EBIT	Customers	Population	
	(x)	(x)	(x)	(x)	(x)	(x)	(\$)	(\$)	
American States Water Co	2.96	1.67	2.30	6.95	19.88	24.86	\$11,722	\$3,342	3.51
American Water Works Company Inc	2.14	1.46	1.91	9.81	19.66	28.96	\$10,397	\$2,380	4.37
Artesian Resources Corp	1.54	0.72	0.90	5.81	13.46	19.19	\$5,274	\$1,629	3.24
California Water Service Group	1.74	0.91	1.35	4.63	16.97	32.62	\$6,353	\$1,654	3.84
Essential Utilities, Inc.	1.62	1.48	1.79	17.00	29.40	41.94	\$15,635	\$5,351	2.92
Middlesex Water Co	2.29	1.52	1.88	10.30	27.44	40.88	\$11,648	\$3,495	3.33
SJW Corp.	1.38	0.99	1.43	7.08	22.09	45.25	\$8,396	\$2,023	4.15
York Water Company (The)	2.91	1.73	2.21	13.31	22.96	30.88	\$9,811	\$3,486	2.81
Average	2.07	1.31	1.72	9.36	21.48	33.07	\$9,905	\$2,920	3.52
Max	2.96	1.73	2.30	17.00	29.40	45.25	\$15,635	\$5,351	4.37
Min	1.38	0.72	0.90	4.63	13.46	19.19	\$5,274	\$1,629	2.81
Median	1.94	1.47	1.84	8.44	20.99	31.75	\$10,104	\$2,861	3.42

Market Multiples Method
Upper Pottsgrove Township Wastewater System Assets
Quantification of the Effective Risk/Growth Adjustments

	Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple	1.84	1.47	1.94
Ratio to Net PPE		79.89%	
Not Contributed Multiple (NPPE = ICAP mult.)	1.94	1.55	
Base Risk Factor	x 75%	75%	
Subject Company Adjusted Multiple	1.46	1.16	
Subject Company Adjusted Multiple	1.46	1.16	
Comparable Group Multiple	÷ 1.84	1.47	
Effective Risk/Growth Adjustment	79%	79%	

	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	74%	74%
Comparable Group Multiple	1.84	1.47
Plant Assets Less Known "Cost Free" Capital	÷ 74%	74%
Multiple Without "Cost Free" Capital	2.49	1.99
Base Risk Factor	x 75%	75%
Subject Company Adjusted Multiple	1.86	1.49
Subject Company Adjusted Multiple	1.86	1.49
Comparable Group Multiple	÷ 1.84	1.47
Effective Risk/Growth Adjustment	101%	101%

	Rev.	EBITDA	EBIT
Comparable Group Multiple	8.44	20.99	31.75
Implied Capitalization Rate (1÷Multiple)	11.85%	4.76%	3.15%
(-) Growth Adjustment	- 0.00%	0.00%	0.00%
Adjusted Capitalization Rate (k-G)	11.85%	4.76%	3.15%
Adjusted Multiple (1÷Adj. Cap. Rate))	8.44	20.99	31.75
Base Risk Factor	x 75%	75%	75%
Subject Company Adjusted Multiple	6.33	15.74	23.81
Subject Company Adjusted Multiple	6.33	15.74	23.81
Comparable Group Multiple	÷ 8.44	20.99	31.75
Effective Risk/Growth Adjustment	75%	75%	75%

Selected Transactions Method
For Upper Pottsgrove Township Wastewater System Assets
Summary

		<u>Median</u>	<u>Mid-Point</u>	<u>Value</u>
<u>All Selected Transactions Companies</u>				
1.	Asset Items			\$20,650,340
2.	Ex-Ante (page 2)	\$20,876,926	\$19,674,360	
3.	Ex-Post (page 3)	\$18,049,196	\$24,000,876	
4.	Demographics Items			\$13,117,408
5.	Ex-Ante (page 2)	\$13,116,522	\$13,118,294	
6.	Ex-Post (page 3)	\$13,116,522	\$13,118,294	
7.			Indicated Value	<u>\$16,883,874</u>
<u>Fully Integrated Selected Transactions Companies</u>				
8.	Asset Items			\$19,537,458
9.	Ex-Ante (page 2)	\$20,876,926	\$19,674,360	
10.	Ex-Post (page 3)	\$18,221,839	\$19,376,707	
11.	Demographics Items			\$18,133,702
12.	Ex-Ante (page 2)	\$18,329,749	\$17,937,654	
13.	Ex-Post (page 3)	\$18,329,749	\$17,937,654	
14.			Indicated Value	<u>\$18,835,580</u>
<u>Mostly Collection/Distribution Selected Transactions Companies</u>				
15.	Asset Items			\$20,611,085
16.	Ex-Ante (page 2)	NA	NA	
17.	Ex-Post (page 3)	\$17,221,294	\$24,000,876	
18.	Demographics Items			\$7,130,612
19.	Ex-Ante (page 2)	\$6,227,477	\$8,033,747	
20.	Ex-Post (page 3)	\$6,227,477	\$8,033,747	
21.			Indicated Value	<u>\$13,870,849</u>

Selected Transactions Method - Ex-Ante
For Upper Pottsgrove Township Wastewater System Assets
Based on 2016 - 2019 Acquisitions of Assets of Water or Sewer System. Without Discount for Customer Contributions

Selected Transactions' Metrics											
Name	Service	System	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							
Upper Pottsgrove Township Wastewater System Assets	\$0	\$15,295,347	\$11,548,897	\$1,380,242	\$858,878	\$858,878	1,428	5,530

Subject Company's Selected Transactions Multiples Valuations											
Municipal Authority of the City of McKeesport	WW	INT	\$19,790,634	\$0	\$26,095,623	\$24,407,741	\$16,502,171	\$21,678,255	\$35,151,168	\$17,430,986	\$17,059,126
New Garden Township/Authority's WW System's Assets	WW	INT	\$21,239,742	\$0	\$17,362,129	\$18,961,786	\$18,006,123	\$27,922,958	\$50,710,516	\$23,455,457	\$13,498,966
Limerick Township Wastewater System's Assets	WW	INT	\$25,794,509	\$0	\$18,878,101	\$24,016,430	\$23,458,125	\$25,927,480	\$72,181,891	\$19,801,108	\$22,092,935
Steelton Borough (Water) Authority	W	INT	\$16,986,396	NA	NA	NA	NA	NA	NA	\$12,997,573	\$20,975,219
Exeter Township Wastewater System Assets	WW	INT	\$17,399,230	NA	NA	NA	\$17,128,602	\$17,689,953	\$17,689,953	\$15,259,127	\$19,228,512
Kane Borough Authority Wastewater System	WW	INT	\$23,914,083	\$0	\$13,253,098	\$22,792,066	\$16,901,967	\$22,022,834	\$83,017,183	\$12,419,851	\$20,905,662
Sadsbury Township Wastewater Utility	WW	C/D	\$13,260,917	NA	NA	NA	NA	NA	NA	\$13,235,471	\$13,286,364
East Bradford Township Wastewater System Assets	WW	C/D	\$31,176,525	\$0	NA	NA	\$6,105,256	\$86,225,805	\$86,225,805	\$5,721,154	\$2,781,131
Township of Mahoning Water System Assets	W	C/D	\$18,361,117	NA	NA	NA	\$8,668,978	\$26,768,805	\$44,459,330	\$5,700,923	\$6,207,550
Township of Mahoning Sewer System Assets	WW	C/D	(\$4,776,201)	NA	NA	NA	\$5,512,847	(\$23,580,560)	(\$16,750,362)	\$4,689,666	\$6,247,405
Cheltenham Township Wastewater System Assets	WW	C/D	\$8,197,216	NA	NA	NA	\$7,465,385	\$9,577,677	\$9,577,677	\$7,021,920	\$7,343,424
East Norriton Township Wastewater System Assets	WW	C/D	\$13,625,904	\$0	NA	NA	\$8,730,446	\$29,431,533	\$29,431,533	\$6,038,663	\$8,123,251

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

Ex-Post Selected Transactions' Metrics											
Name	Service	System	Announced Purchase Price was:	Investor Provided Capital	Ex-POST - OCN - Gross PP&E	Ex-Post - OCNLD - Net PP&E	Revenues	EBITDA	EBIT	Customers	Population
Municipal Authority of the City of McKeesport	WW	INT	\$156,000,000	\$83,903,219	\$108,231,570	\$80,085,602	\$13,047,844	\$6,180,616	\$3,811,679	12,780	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											
Upper Pottsgrove Township Wastewater System Assets				\$0	\$15,295,347	\$11,548,897	\$1,380,242	\$858,878	\$858,878	1,428	5,530

Ex-Post Subject Company's Selected Transactions Multiples Valuations											
Municipal Authority of the City of McKeesport	WW	INT	\$19,045,499	\$0	\$22,046,009	\$22,496,278	\$16,502,171	\$21,678,255	\$35,151,168	\$17,430,986	\$17,059,126
New Garden Township/Authority's WW System's Assets	WW	INT	\$21,070,479	\$0	\$16,621,181	\$18,348,635	\$18,006,123	\$27,922,958	\$50,710,516	\$23,455,457	\$13,498,966
Limerick Township Wastewater System's Assets	WW	INT	\$25,043,569	\$0	\$18,095,042	\$18,791,972	\$23,458,125	\$25,927,480	\$72,181,891	\$19,801,108	\$22,092,935
Steelton Borough (Water) Authority	W	INT	\$17,352,533	NA	\$17,433,989	\$18,003,350	NA	NA	NA	\$12,997,573	\$20,975,219
Exeter Township Wastewater System Assets	WW	INT	\$19,205,692	NA	\$21,465,790	\$25,977,904	\$17,128,602	\$17,689,953	\$17,689,953	\$15,259,127	\$19,228,512
Kane Borough Authority Wastewater System	WW	INT	\$22,882,599	\$0	\$12,775,511	\$15,017,781	\$16,901,967	\$22,022,834	\$83,017,183	\$12,419,851	\$20,905,662
Sadsbury Township Wastewater Utility	WW	C/D	\$15,716,294	NA	\$18,913,181	\$17,430,161	NA	NA	NA	\$13,235,471	\$13,286,364
East Bradford Township Wastewater System Assets	WW	C/D	\$25,853,476	\$0	\$9,219,695	\$10,548,964	\$6,105,256	\$86,225,805	\$86,225,805	\$5,721,154	\$2,781,131
Township of Mahoning Water System Assets	W	C/D	\$17,296,593	NA	\$13,679,012	\$15,591,550	\$8,668,978	\$26,768,805	\$44,459,330	\$5,700,923	\$6,207,550
Township of Mahoning Sewer System Assets	WW	C/D	\$1,130,076	NA	\$14,779,111	\$17,012,427	\$5,512,847	(\$23,580,560)	(\$16,750,362)	\$4,689,666	\$6,247,405
Cheltenham Township Wastewater System Assets	WW	C/D	\$16,775,908	NA	\$38,782,057	\$37,663,215	\$7,465,385	\$9,577,677	\$9,577,677	\$7,021,920	\$7,343,424
East Norriton Township Wastewater System Assets	WW	C/D	\$15,869,784	\$0	\$18,987,838	\$26,215,008	\$8,730,446	\$29,431,533	\$29,431,533	\$6,038,663	\$8,123,251

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 Upper Pottsgrove Township Wastewater 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.			Upper Pottsgrove Township Wastewater System Assets		
Purchase Price was: \$1,106,267			Upper Pottsgrove Township Wastewater	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	\$15,295,347	\$18,018,996	
Net PP&E	\$697,723	1.59	\$11,548,897	\$18,311,227	\$18,165,112
Revenues	\$107,054	10.33	\$1,380,242	\$14,263,047	
EBITDA	\$48,920	22.61	\$858,878	\$19,422,495	
EBIT	\$32,236	34.32	\$858,878	\$29,474,762	\$15,392,805
Customers	135,645	\$8,156	1,428	\$11,646,204	
Population	450,000	\$2,458	5,530	\$13,594,793	\$12,620,498
Average				<u>\$17,818,789</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	\$15,295,347	\$26,163,827	
Net PP&E (Less "Cost Free" Capital)	\$480,521	2.30	\$11,548,897	\$26,588,150	\$26,375,988
Revenues	\$107,054	10.33	\$1,380,242	\$14,263,047	
EBITDA	\$48,920	22.61	\$858,878	\$19,422,495	
EBIT	\$32,236	34.32	\$858,878	\$29,474,762	\$19,498,243
Customers	135,645	\$8,156	1,428	\$11,646,204	
Population	450,000	\$2,458	5,530	\$13,594,793	\$12,620,498
Average				<u>\$20,164,754</u>	

Upper Pottsgrove Township Wastewater System Assets

Summary of Approach Results and

Fair Market Value Conclusion at Appraisal Date

<u>Valuation Approach</u>	<u>Indicated Value</u>	<u>Conclusion</u>	<u>Consideration</u>
Cost Approach	\$18,984,989		33.3%
Income Approach	18,849,576		33.3%
Market Approach	15,024,830		33.4%
Conclusion \$17,617,000			

WORKPAPERS

Daily Bond Yields and Key Indicators

Updated by 11 am ET with data from the Data as of 28-Aug-20

Moody's Daily Long-term Corporate Bond Yield Averages

	Utilities	Industrial	Corporate
Aaa	NA	2.4	2.4
Aa	2.7	2.45	2.58
A	2.92	2.82	2.87
Baa	3.24	3.66	3.45
Avg	2.95	2.83	2.89

Moody's Daily Treasury Yield Averages

Short-Term (3-5 yrs)	0.24
Medium-Term (5-10 yrs)	0.48
Long-Term (10+ yrs)	1.33

Moody's Daily Public Utility Common Stock Yield Averages

Price	445.24
Yield	4.44
New Dividend	19.75

Moody's Commodity and Scrap Price Indexes

Spot Commodity Index	6,307.02
Industrial Metals Index	1,946.12

* Moody's "Aaa" Utilities Index was suspended on 12/10/01. Since 2000, TVA was the only issuer left in the index as a decade of deregulation, debt growth, competition, and consolidation eliminated the rest of the Aaa universe.

Index Name: S&P Municipal Bond Revenue Index

As of: Sep 11, 2020

Effective date	Yield To Maturity
8/25/2020	2.83%
8/26/2020	2.84%
8/27/2020	2.85%
8/28/2020	2.85%
8/31/2020	2.85%
9/1/2020	2.86%
9/2/2020	2.86%
9/3/2020	2.87%
9/4/2020	2.87%

FED H.15

DATE	DAAA	DBAA	DGS10	DGS20	DGS30
2020-08-25	2.36	3.32	0.69	1.18	1.39
2020-08-26	2.40	3.35	0.69	1.20	1.41
2020-08-27	2.46	3.45	0.74	1.28	1.50
2020-08-28	2.40	3.45	0.74	1.29	1.52
2020-08-31	2.42	3.39	0.72	1.26	1.49
2020-09-01	2.34	3.35	0.68	1.20	1.43
2020-09-02	2.26	3.30	0.66	1.16	1.38
2020-09-03	2.22	3.27	0.63	1.13	1.34
2020-09-04	2.34	3.40	0.72	1.25	1.46

<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 8/31/20	2.90	1.49	1.41
Median Credit Spread (Pre COVID-19)			<u>1.17</u>
COVID-19 Default Adjustment			<u><u>0.24</u></u>

FED H.15

		10-yr T- bond	20-yr T- bond	30-yr T- bond
Spot	8/31/20	0.72	1.26	1.49

FED H.15

	AAA Corp	BAA CORP		A Rated Utility	
8/31/20	2.42	3.39	Spread	0.02	-0.06
Moody's Spot ==>	2.40	3.45	Moody's Spot ==>	2.92	2.92
	0.02	-0.06	Implied	2.94	2.86
					2.90

Moody's Daily Long-term Corporate Bond Yield Averages

	8/28/2020	Utilities	Industrial	Corporate
Spot	Aaa	NA	2.4	2.4
	Aa	2.7	2.45	2.58
	A	2.92	2.82	2.87
	Baa	3.24	3.66	3.45
	Avg	2.95	2.83	2.89

S&P Municipal Bond Revenue Index

8/31/20 2.85%

Utilities

Aa	
A	2.90
Baa	

	Decade Spread	Annual Spread
10-Year	0.72	
20-Year	1.26	0.540
30-Year	1.49	0.230

REVENUE BOND INDEX	2.85
10-20 Yr	0.27
20-30 Yr	0.23

3.35

30-Yr Rev Bond Est.

3.35

2019 Lt Debt	3.17	2.9
Prf Stk	5.84	184%
Pref Stock Est.	184%	5.34

8/31/20

A-Rated Rev Bonds	3.35
A-Rated PU Bonds	2.90
A-Rated PU Pref Stk	5.34
30-yr T-bond	1.49
COVID-19 Default Adjustment	0.24

	SBBI	SBBI
Equity Risk Premium	6.91	6.91
Beta (Value Line Med.)	<u>0.80</u>	<u>0.80</u>
Risk Adjusted Equity Premium	5.53	5.53
Yield (RF)	1.49	1.49
Size Premium	1.60	0.00
COVID-19 Default Adjustment	<u>0.24</u>	<u>0.24</u>
	<u>8.86</u>	<u>7.26</u>

High 8.86
Low 7.26

0.80

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

1.49 30-yr T-bond

0.24 COVID-19 Default Adjustment

	Recent Market Value (Mill \$)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	2,806.13	Low-Cap	3	1.6	0.65
American Water Works Co Inc	25,611.38	Large-Cap	1	0	0.85
Artesian Resources Corp	328.62	Mico-Cap	4	3.4	-
California Water Service Gp	2,239.71	Low-Cap	3	1.6	0.65
Essential Utilities, Inc.	10,703.67	Mid-Cap	2	0.89	0.9
Middlesex Water Co	1,120.02	Low-Cap	3	1.6	0.75
SJW Corp	1,784.16	Low-Cap	3	1.6	0.8
York Water Co	594.52	Mico-Cap	4	3.4	0.8
Average	<u>5,648.520</u>	<u>Mid-Cap</u>	<u>2</u>	<u>0.89</u>	<u>0.77</u>
Median	<u>2,011.934</u>	<u>Low-Cap</u>	<u>3</u>	<u>1.60</u>	<u>0.80</u>

9/14/2020	3/31/20	Company Name	Ticker Symbol	LT Debt-Totl Qlty	Preferred S Minority In Common Equity-Totl-Qlty			Invested Capital-Totl Qlty	Market Value-Monthly	August-20			Book Ratios			Market Ratios		
										LTD	Pref	Equity	LTD	Pref	Equity	LTD	Pref	Equity
		AMERICAN ST. AWR		526,309	0.000	0.000	604,583	1,130,892	2,806.125	AMERICA	0.465	0.000	0.535	1.000	0.158	0.000	0.842	1.000
		AMERICAN W/ AWK		8,779,000	0.000	0.000	6,243,000	15,022,000	25,611.383	AMERICA	0.584	0.000	0.416	1.000	0.255	0.000	0.745	1.000
		ARTESIAN RES. ARTN-A		145,817	0.000	0.000	162,354	308,171	328.617	ARTESIAI	0.473	0.000	0.527	1.000	0.307	0.000	0.693	1.000
		CALIFORNIA WCWT		808,331	0.000	0.000	1,563,471	755,140	2,239,705	CALIFORNI	0.517	0.000	0.483	1.000	0.265	0.000	0.735	1.000
		ESSENTIAL UT WTRG		4,905,015	0.000	0.000	4,613,163	9,518,178	10,703.671	ESSENTLIA	0.515	0.000	0.485	1.000	0.314	0.000	0.686	1.000
		MIDDLESEX W MSEX		248,218	2.084	0.000	327,400	577,702	1,120.017	MIDDLES	0.430	0.004	0.566	1.000	0.181	0.002	0.817	1.000
		SIW GROUP SIW		1,339,307	0.000	0.000	883,541	2,222,848	1,784.162	SIW GROI	0.603	0.000	0.397	1.000	0.429	0.000	0.571	1.000
		THE YORK WAY YORW		104,279	0.000	0.000	136,289	240,568	594.515	THE YORI	0.433	0.000	0.567	1.000	0.149	0.000	0.851	1.000

Assumptions:	8/31/2020
Debt Cost	2.9
Pref. Stock Cost	5.34
Equity Cost	8.86
Equity Cost	7.26

Ratio	Cost	Wt	Shield	Overall
26.00%	2,900	0.75	0.72	Overall
0.00%	5,340	0.00	1	0.54288
74.00%	8,860	6.56	1	0
		7.31		6.5564
				7.10
				<<<<<ANSWER
26.00%	2,900	0.75	0.72	Overall
0.00%	5,340	0.00	1	0.54288
74.00%	7,258	5.37	1	0
		6.12		5.37092
				5.91
				<<<<<ANSWER

Public Meeting held June 2020

ROE

9.9

DSIC Weighted Cost of Capital

<u>Assumptions:</u>	<u>8/31/2020</u>
Debt Cost	2.9
Pref. Stock Cost	5.34
DSIC Equity Cost	9.9

	Ratio	Cost	Wt	Shield	Overall
Debt	49.40%	2.900	1.43	0.72	1.031472
Pref	0.00%	5.340	0.00	1	0
Equity	50.60%	9.900	5.01	1	5.0094
			6.44		6.04 <<<<ANSWER

TOWNSHIP OF UPPER POTTSGROVESTATEMENT OF REVENUES, EXPENSES AND CHANGES IN
NET POSITION--MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2016

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services, sewer charges	\$ 1,319,318
Connection fees	<u>4,408</u>
TOTAL OPERATING REVENUES	1,323,726
OPERATING EXPENSES	
Wastewater collections and treatment	<u>347,490</u>
OPERATING INCOME	<u>976,236</u>
NONOPERATING REVENUES (EXPENSES)	
Investment income	2,328
Miscellaneous expense	(1,000)
Debt service	
Principal expense	(540,080)
Interest expense	<u>(190,493)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(729,245)</u>
CHANGE IN NET POSITION	246,991
NET POSITION AT BEGINNING OF YEAR	<u>531,251</u>
NET POSITION AT END OF YEAR	\$ <u><u>778,242</u></u>

See accompanying notes to the basic financial statements.

TOWNSHIP OF UPPER POTTSGROVE

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN
NET POSITION--MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2017

	Sewer Fund
OPERATING REVENUES	
Charges for services, sewer charges	\$ 1,312,039
Connection fees	<u>86,705</u>
TOTAL OPERATING REVENUES	1,398,744
OPERATING EXPENSES	
Wastewater collections and treatment	<u>595,002</u>
OPERATING INCOME	<u>803,742</u>
NONOPERATING REVENUES (EXPENSES)	
Investment income	9,477
Miscellaneous expense	(1,000)
Debt service	
Principal expense	(564,698)
Interest expense	<u>(177,935)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(734,156)</u>
CHANGE IN NET POSITION	69,586
NET POSITION AT BEGINNING OF YEAR	<u>778,242</u>
NET POSITION AT END OF YEAR	<u>\$ 847,828</u>

See accompanying notes to the basic financial statements.

TOWNSHIP OF UPPER POTTSGROVE

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN
NET POSITION--MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2018

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services, sewer charges	\$ 1,362,072
Connection fees	<u>26,512</u>
TOTAL OPERATING REVENUES	<u>1,388,584</u>
OPERATING EXPENSES	
Wastewater collections and treatment	<u>425,021</u>
OPERATING INCOME	<u>963,563</u>
NONOPERATING REVENUES (EXPENSES)	
Investment income	10,727
Intergovernmental	78,810
Debt service	
Principal expense	(594,464)
Interest expense	<u>(163,230)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(668,157)</u>
INCOME BEFORE INTERFUND TRANSFERS	295,406
INTERFUND TRANSFERS	
Transfers out	<u>(270,000)</u>
CHANGE IN NET POSITION	25,406
NET POSITION AT BEGINNING OF YEAR	<u>847,828</u>
NET POSITION AT END OF YEAR	<u><u>\$ 873,234</u></u>

See accompanying notes to the basic financial statements.

TOWNSHIP OF UPPER POTTSGROVE

STATEMENT OF REVENUES, EXPENSES AND CHANGES IN
NET POSITION--MODIFIED CASH BASIS
PROPRIETARY FUNDS
YEAR ENDED DECEMBER 31, 2019

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services, sewer charges	\$ 1,374,115
Connection fees	93,113
Refund of prior year expenses	<u>6,127</u>
TOTAL OPERATING REVENUES	<u>1,473,355</u>
OPERATING EXPENSES	
Wastewater collections and treatment	<u>354,533</u>
OPERATING INCOME	<u>1,118,822</u>
NONOPERATING REVENUES (EXPENSES)	
Investment income	17,095
Debt service	
Principal expense	(610,383)
Interest expense	<u>(145,775)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(739,063)</u>
INCOME BEFORE INTERFUND TRANSFERS	379,759
INTERFUND TRANSFERS	
Transfers out	<u>(175,000)</u>
CHANGE IN NET POSITION	204,759
NET POSITION AT BEGINNING OF YEAR	<u>873,234</u>
NET POSITION AT END OF YEAR	<u>\$ 1,077,993</u>

See accompanying notes to the basic financial statements.

		2019
Revenue		
341.100 · Interest Earnings		7,000.00
354.040 · Water and Sewer Grants		200,000.00
364.000 · Sanitation		
364.110 · Tapping/Connection Fees		283,244.00
364.120 · User Fees		1,390,620.00
Total 364.000 · Sanitation		1,673,864.00
364.900 · PBA Reimbursement		
Total Income		1,880,864.00
Expense		
403.390 · Bank Service Charges/Fees		
404.310 · Solicitor Fees		5,000.00
429.000 · Waste Water Collect/Treatment		
429.240 · General Admin Expenses		500.00
429.251 · Supplies		500.00
429.313 · Engineering		45,000.00
429.321 · Telephone		2,000.00
429.361 · Electric - Pump Stations		15,000.00
429.375 · Repairs and Maintenance		35,000.00
429.376 · I & I Repairs		25,000.00
429.380 · Meter Lease		43,000.00
429.460 · Continuing Education		1,500.00
429.470 · Misc. Expenses		500.00
429.530 · PMA Purchase of EDUs		0.00
429.531 · PMA - Current Year		132,530.00
429.532 · Pottstown MA Prior Year Rec,		5,000.00
429.533 · PMA - Capital, Planned		130,000.00
429.534 · Pottstown MA Cap. Repair (Res)		10,000.00
429.535 · LPT Porter House Pump Station		12,000.00
429.600 · Capital Construction		
429.610 · Regal Oaks Phase 2 A		495,000.00
429.600 · Gilbertsville Road		100,000.00
Total 426.429 · Sanitation - Public Works		1,052,530.00
439.000 · Highway Construction and Repair		
471 · Debt Principal		
471.300 · 2005 DVRFA GO Principal		208,000.00
471.500 · 2009 Pennvest		157,383.00
471.600 · 2012 GO Bond Principal		220,000.00
471.700 · 2013 GO Bond Principal		25,000.00
Total 471 · Debt Principal		610,383.00
472 · Debt Service Interest		
472.300 · 2005 DVRFA GO Interest		22,644.00
472.500 · 2009 Pennvest		68,471.00
472.600 · 2012 GO Bond		50,640.00

Page 2 of 2

UPPER POTTS GROVE TOWNSHIP				
SEWER FUND				
2020 BUDGET				
Revenue				
	341.100 · Interest Earnings			15,000.00
	354.040 · Water and Sewer Grants			200,000.00
	364.000 · Sanitation			
	364.110 · Tapping/Connection Fees			422,967.00
	364.120 · User Fees			1,354,500.00
	Total 364.000 · Sanitation			1,777,467.00
	364.900 · PBA Reimbursement			0.00
	380.000 · Miscellaneous			0.00
Total Revenue				1,992,467.00
Expense				
	403.390 · Bank Service Charges/Fees			2,000.00
	404.310 · Solicitor Fees			0.00
	426.429 · Sanitation - Public Works			
	429.240 · General Admin Expenses			500.00
	429.251 · Supplies			500.00
	429.310 · Legal Expenses			110,000.00
	429.313 · Engineering			55,000.00
	429.321 · Telephone			2,300.00
	429.361 · Electric - Pump Stations			15,000.00
	429.375 · Repairs and Maintenance			35,000.00
	429.376 · I & I Repairs			25,000.00
	429.380 · Meter Lease			42,912.00
	429.460 · Continuing Education			1,500.00
	429.470 · Miscellaneous Expenses			0.00
	429.530 · PMA Purchase of EDUs			0.00
	429.531 · PMA - Current Year			110,780.00
	429.532 · PMA - Prior Year Rec			5,000.00
	429.533 · PMA - Capital, Planned			18,338.00
	429.534 · PMA - Capital, Repair (RES)			10,000.00
	429.535 · LPT Porter House Pump Station			12,000.00
	429.600 · Capital Construction			0.00
	429.605 · Capital Const Gilbertsville Rd			100,000.00
	429.610 · Capital Const Regal Oaks Phase			495,000.00
	429.611 · Capital Const Ming Dr/Moyer Rd			474,000.00
	Total 426.429 · Sanitation - Public Works			1,512,830.00
	471 · Debt Principal			
	471.300 · 2005 DVRFA GO Principal			216,000.00
	471.500 · 2009 Pennvest			162,462.00
	471.600 · 2012 GO Bond Principal			225,000.00
	471.700 · 2013 GO Bond Principal			30,000.00
	Total 471 · Debt Principal			633,462.00

	472 · Debt Service Interest			
		472.300 · 2005 DVRFA GO Interest		12,100.00
		472.500 · 2009 Pennvest		63,392.00
		472.600 · 2012 GO Bond		46,020.00
		472.700 · 2013 GO Bond		7,020.00
	Total 472 · Debt Service Interest			128,532.00
	492.000 · Interfund Transfers Out			
		492.010 · Transfer to General Fund		175,000.00
	Total 492.000 · Interfund Transfers Out			175,000.00
Total Expense				2,451,824.00
		Revenue Over (Under) Expense		-459,357.00

Schedule 4.06

Seller Liabilities

The following list shows the debt associated with the Township's sewer system. This debt will be defeased prior to transfer of the system to the Buyer.

<u>Series</u>	<u>Debt Type</u>	Outstanding Par (as of 12/31/2019)
		<u>Sewer Fund</u>
Series B of 2005	Del Val Loan	\$696,000
Series of 2009	Pennvest Loan	\$2,067,505
Series of 2012	GO Bonds	\$1,685,000
Series of 2013	GO Bonds	\$280,000
Series of 2014	GO Note	\$0
Fund Totals		\$4,728,505

Schedule 4.17

Pending Development Plans (to be updated as developments progress)

PROPOSED FUTURE DEVELOPMENTS	
Private Developments Under Construction	
Crossroads / DVDC	-51 proposed EDU's for single family dwelling units. The expected population to be served is 146 residents. (36 connected as of 12/18/19)
Sweetwater / Sprogels Run	-58 proposed EDU's for single family housing, with an expected population of 166 residents.
Private Developments/Subdivisions	
Bachman - Approved Module	-38 proposed EDU's, expected to serve a population of 109 residents
Kummerer Tract	-145 EDU's - Preliminary/final plans submitted 9/18/2019
Evans Road	-134 EDU's - No plans submitted
Municipal Sewer Projects - Would Require Capital to Connect (from 537 Plan)	
Regal Oaks Phase 2A	-31 EDU's (existing homes) proposed for connection. Expected population is 163 residents. Connections are expected to begin in 2020.
Regal Oaks Phase 2B	-26 EDU's (existing homes) proposed for connection. Expected population is 163 residents. Connections are expected to begin in 2021.
Continental Drive	-54 EDU's (existing homes) proposed for connection. Expected population is 154 residents. Connections are expected to be completed by 2023.
Horsheshow / Bruce Drive	-39 EDU's (existing homes) proposed for connection. Expected population is 112 residents. Connections are expected to be completed by 2022.
Mining Drive / Moyer Road	-29 EDU's (existing homes) proposed for connection. Expected population is 83 residents. Connections are expected to be completed by 2020.
Old Orchard Drive	-15 EDU's (existing homes) proposed for connection. Expected population is 43 residents. Connections are expected to be completed by 2023.

F. - PROPOSED & APPROVED DEVELOPMENTS									
UPPER POTTS GROVE TOWNSHIP PROJECTED CONNECTIONS 2019-2023									
TRIBUTARY NAME	SEWER DISTRICT	PLANNED NUMBER OF LOTS	PREVIOUS EDU'S CONNECTED	EDU'S CONNECTED IN 2018	TOTAL EDU'S CONNECTED (as of December 2018)	REMAINING EDU'S FOR CONNECTION AND YEAR			
		UPT EDU COUNT	1533*	6*	1539	2019	2020	2021	2022 2023
CODDINGTON VIEW (SOKO SKARBK)	FA	218	218	0	218	0	0	0	0
BACHMAN	FA	38	0	0	0	0	0	0	0
BOERNER TRACT	PF	33	0	0	0	0	0	0	0
FARMINGTON AVENUE WEST	PF	86	84	0	85	1	0	0	0
SWEETWATER/SPROGELS RUN	RO	58	0	7	7	13	14	12	12
CROSSROADS/DVDC	RO	51	0	0	0	15	12	12	12
REGAL OAKS PHASE II	RO	57	0	0	0	29	0	0	28
CONTINENTAL DRIVE	LP	54	0	0	0	0	0	0	0
HORSESHOE & BRUCE DRIVES	RO	39	0	0	0	0	0	0	0
MING DR / MOYER RD	RO	29	0	0	0	0	29	0	0
OLD ORCHARD DRIVE	LP	15	0	0	0	0	0	0	0
TOTALS		678	302		310	58	55	24	52

* Includes 1 EDU removed from 842 Farmington Ave. Typically includes properties added during the year that are not part of any planned development

Schedule 7.03(a)

Rates

As of Closing of this transaction, pursuant to a rate ordinance to be adopted by the Seller prior to Closing, the Seller's rates will be a flat quarterly rate per EDU (regardless of usage) of \$195.

The following two customers are billed based on their water usage. Meters are read on a quarterly basis and EDUs are assigned and adjusted based on such usage. The rate charged for such usage is a flat rate per EDU.

1. Fujiyama, 1495 Farmington Avenue, Pottstown, PA 19464 ~ 3 EDUs
2. Applebee's Restaurant, 815 N. State Street, Pottstown, PA 19464 ~ 30 EDUs

UPPER POTTS GROVE TOWNSHIP 2018 MONTHLY METERED FLOWS

Month		Hanover Street	Willow Street	Poplar Street	Applebee's Restaurant	Farmington Ave.	Turnberry	North End	Total System
Jan-18	Total Flow (gal.)	148,463	385,306	292,933	274,267	6,378,449	1,236,683	386,834	9,102,935
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	4,789	12,429	9,449	8,847	205,756	39,893	12,479	293,643
Feb-18	Total Flow (gal.)	315,894	577,826	460,814	224,029	12,757,679	1,353,065	782,407	16,471,715
	Days Monitored	28	28	28	28	28	28	28	
	Average (gpd)	11,282	20,637	16,458	8,001	455,631	48,324	27,943	588,276
Mar-18	Total Flow (gal.)	248,294	466,868	413,118	275,699	11,082,667	1,518,283	620,990	14,625,919
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	8,009	15,060	13,326	8,894	357,505	48,977	20,032	471,804
Apr-18	Total Flow (gal.)	177,179	394,856	295,465	235,103	8,168,731	1,385,926	493,800	11,151,059
	Days Monitored	30	30	30	30	30	30	30	
	Average (gpd)	5,906	13,162	9,849	7,837	272,291	46,198	16,460	371,702
May-18	Total Flow (gal.)	169,223	381,766	325,166	220,676	8,749,461	1,298,497	694,663	11,839,452
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	5,459	12,315	10,489	7,119	282,241	41,887	22,408	381,918
Jun-18	Total Flow (gal.)	89,714	282,919	226,161	223,072	6,674,333	784,356	400,506	8,681,059
	Days Monitored	30	30	30	30	30	30	30	
	Average (gpd)	2,990	9,431	7,539	7,436	222,478	26,145	13,350	289,369
Jul-18	Total Flow (gal.)	232,098	486,920	410,589	219,381	12,012,772	944,816	641,761	14,948,337
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	7,487	15,707	13,245	7,077	387,509	30,478	20,702	482,204
Aug-18	Total Flow (gal.)	229,538	507,055	427,307	194,834	13,830,333	914,805	712,574	16,816,447
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	7,404	16,357	13,784	6,285	446,140	29,510	22,986	542,466
Sep-18	Total Flow (gal.)	231,840	632,644	398,818	182,298	12,871,163	910,160	764,864	15,991,787
	Days Monitored	30	30	30	30	30	30	30	
	Average (gpd)	7,728	21,088	13,294	6,077	429,039	30,339	25,495	533,060
Oct-18	Total Flow (gal.)	100,318	422,930	255,495	207,750	7,070,408	814,218	383,396	9,254,514
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	3,236	13,643	8,242	6,702	228,078	26,265	12,368	298,533
Nov-18	Total Flow (gal.)	305,731	671,709	552,332	215,622	14,862,149	914,659	884,414	18,406,617
	Days Monitored	30	30	30	30	30	30	30	
	Average (gpd)	10,191	22,390	18,411	7,187	495,405	30,489	29,480	613,554
Dec-18	Total Flow (gal.)	222,906	541,121	572,518	226,233	11,579,044	904,037	572,987	14,618,846
	Days Monitored	31	31	31	31	31	31	31	
	Average (gpd)	7,191	17,456	18,468	7,298	373,518	29,162	18,483	471,576
Summary	Total Flow (gal.)								161,908,686
	No of Days	365	365	365	365	365	365	365	365
	Peak Month (gpd)	11,282	22,390	18,468	8,894	495,405	48,977	29,480	613,554
	Average daily (gpd)	-	-	-	-	-	-	-	443,585

Appendix A-5.2 (Gannett)

Upper Pottsgrove Township Lift Stations
Site Visit – 9/23/2020



Regal Oak

Appendix A-5.2 (Gannett)
Upper Pottsgrove Township Lift Stations
Site Visit – 9/23/2020



Pine Ford Road



Appendix A-5.2 (Gannett)

Upper Pottsgrove Township Lift Stations
Site Visit – 9/23/2020

Hollyberry Court



Appendix A-5.2 (Gannett)
Upper Pottsgrove Township Lift Stations
Site Visit – 9/23/2020



Evan Road



71.59.88.179



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Aqua America's Pennsylvania Subsidiary Enters Agreement to Purchase Cheltenham Township Wastewater System

July 02, 2018 07:00 AM Eastern Daylight Time

BRYN MAWR, Pa.--(BUSINESS WIRE)--Aqua America announced today that its Pennsylvania subsidiary has signed an asset purchase agreement with Cheltenham Township to purchase its wastewater system, which serves approximately 10,500 connections in Montgomery County, for \$50.25 million. The agreement must be approved by the Pennsylvania Public Utility Commission.

The transaction will be Aqua Pennsylvania's fourth acquisition application referred to the Pennsylvania PUC since Act 12, commonly referred to as fair market value legislation, was enacted last year. Aqua Pennsylvania has asset purchase agreements with the 2,100-customer New Garden Township wastewater system in Chester County and the 5,400-customer Limerick Township wastewater system in Montgomery County. The company also has an agreement, signed in December 2017, with East Bradford Township in Chester County to purchase its 1,200-customer wastewater collection system. Aqua already provides water service to East Bradford, as it does with Cheltenham.

These four systems, including Cheltenham, total more than 19,000 wastewater connections and would nearly double Aqua Pennsylvania's current 22,000-customer wastewater operation.

The new law encourages a consolidation of the fragmented industry for the benefit of customers, the environment, and local governments. This transaction will benefit customers by leveraging compliance expertise, purchasing power gained through economies of scale and operational efficiencies to ultimately benefit service to our customers at affordable rates.

"We are pleased with the momentum we are gaining to reach agreements with municipal systems," said Aqua America Chairman and CEO Christopher Franklin. "Act 12 is having its intended impact, allowing municipalities to be compensated for the fair value of their water and wastewater assets and enabling utility professionals to bring expertise to systems in need."

Aqua Pennsylvania President Marc Lucca says his team is ready to work with the Cheltenham community on making needed system improvements.

"As with our pending agreements with New Garden, East Bradford and Limerick, the Aqua Pennsylvania team is looking forward to assuming Cheltenham's sewer utility responsibilities so the township can direct its attention and capital to other priorities," said Lucca. "We are anxious to begin the work necessary to help the township meet the requirements of an outstanding Pennsylvania Department of Environmental Protection consent order, specifically related to inflow and infiltration issues there."

In total, Aqua has plans to spend nearly \$50 million over the next 10 years to improve Cheltenham's wastewater system.

Aqua America is one of the largest U.S.-based, publicly traded water utilities and serves nearly 3 million people in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Indiana and Virginia. Aqua America is listed on the New York Stock Exchange under the ticker symbol WTR. Visit AquaAmerica.com for more information.

Forward-Looking Statements

This release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 including, among others: the company's ability to successfully close the acquisition of the wastewater systems noted in this release. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including: general economic business conditions, the successful integration of the customers and the facilities, the success of the company's growth efforts including its ability to utilize Act 12, and other factors discussed in our Annual Report on Form 10-K, which is on file with the Securities and Exchange Commission.

Cheltenham Township
1329 Proceeding
Cheltenham Twp. - Water Accounts reported for Sewer Billing

Type of Service	Gallons	Customers ¹
Commercial	280,938,300	534
Industrial	364,400	14
Public	9,962,700	23
Residential	484,692,800	9,648
Total	775,958,200	10,219

1. Customers include all Active and Inactive Accounts

The following table breaks down the above total figures by customer class as of December 31, 2017, 2016, and 2015 :

	2017	2016	2015
Customers:			
Residential	118,493	111,494	110,254
Commercial	9,386	8,626	8,569
Industrial	536	479	478
Public Authority	1,072	948	964
Fire Protection	3,178	2,876	2,815
Other (including non-metered accounts)	2,980	545	553
Total	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.

ADVERTISEMENT

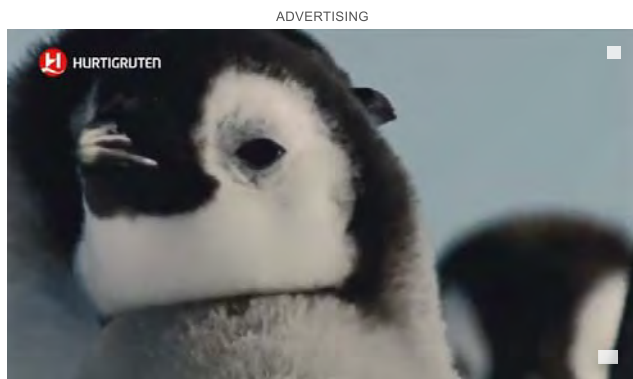
To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase ([JPM.N](#)). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

Appendix A-5.2 (Gannett)

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](#)).

ADVERTISEMENT



"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.

09/02/16

Exeter Township
Customer List

Report by Class

Account	Name Service Address	Tax ID	Book	Status	Alert Code
97990.00	F M BROWN SONS INC 790 DANIEL BOONE ROAD	43-5345-07-68-8539 BIRDSBORO	PA	A 19508-8737	
99991.00	DIEROLF, CANDACE 21 PINE AVENUE	BIRDSBORO	PA	A 19508	
99992.00	TELFORD, MARK 19-6 CRANBERRY RIDGE	READING	PA	A 19606-3934	
Total Class: R: 8,708					
Class: TRAILER PARK					
20000.00	KLIEWER, KIM B 4851 PERKIOMEN AVENUE	43-5325-08-79- READING	100 PA	A 19606	
(610)670-0191 20010.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34- READING	201 PA	A 19606-3655	
20020.00	BORDIC MOBILE HOME PARK 214 BORDIC ROAD	43-5335-09-16- READING	200 PA	A 19606-3605	
20030.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-10-35- READING	201 PA	A 19606-3655	
20060.00	ALSACE TOWNSHIP 240 SPIES CHURCH ROAD	READING	101 PA	A 19606	
20070.00	KL MHC LLC 44 KEYSTONE ROAD	43-5335-14-34-2494 READING	PA	A 19606-3655	
91230.00	PENN VIEW MOBILE PARK BROADWAY AVENUE	43-5327-14-42- READING	200 PA	A 19606	
(610)779-4202					

Total Class: T: 7

Total: 8,984

Appendix A-5.2 (Gannett)

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)

Share

Adjust font size: A A A

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.

Appendix A-5.2 (Gannett)

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 Voorhees, N.J.

This would be Pennsylvania American's first wastewater treatment system in Berks.

(Correspondent Valdis I. Laci contributed to this story.)

Contact Mike Urban: 610-371-5023 or murban@readingeagle.com.

- 1 1. The collection of a DSIC prior to inclusion of the acquired assets in a base
- 2 rate case;
- 3 2. The accrual of Allowance for Funds Used During Construction (AFUDC)
- 4 on non-DSIC eligible post-acquisition improvements; and
- 5 3. The deferral of depreciation for book and ratemaking purposes on non-
- 6 DSIC eligible post-acquisition improvements.

7

8 **Q. Please briefly summarize the Acquisition Transaction that the Joint Applicants**

9 **are proposing.**

10 A. Under the terms of the Proposed Transaction, PAWC would acquire the wastewater

11 utility assets of Kane for \$17.56 million.

12

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

14 A. Kane owns and operates a sanitary wastewater collection system that provides

15 sanitary wastewater service to approximately 2,019 customers in Kane Borough and

16 a portion of Westmore Township in McKean County. The breakout of Kane's

17 customer count is: 1,847 residential, 162 commercial, 3 industrial, and 7 municipal.

18 The \$17.56 million purchase price for a wastewater utility assets serving 2,019

19 customers equates to a cost of approximately \$8,700 per customer.

20

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

22 A. Yes, the Asset Purchase Agreement ("APA") dated November 4, 2019 was included

23 with the Application. The APA states that the purchase price is Seventeen Million,

24 Five Hundred Sixty Thousand Dollars (\$17,560,000). The Application indicates that

25 the purchase price is based on arm's length negotiations. PAWC and Kane Borough

26 are not affiliated with each other.

Customer Number	Edu Purchased	Service Address	Group Code	Drainage Basin	SPA Amt	SPA Qty	SWR Amt	SWR Qty	Svr Base Amt	PEN Amt	INT Amt
3793	12133	900 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3794	12134	1000 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3795	12135	1100 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	216.44	-	-	\$	1,348.80	-
3796	12136	1200 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	69.15	-	-	\$	1,348.80	-
3799	12139	1500 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	43.95	-	-	\$	1,348.80	-
3800	12140	1600 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3801	12141	1700 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3802	12142	1800 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3803	12143	1900 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3804	12144	2000 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	8.42	-	-	\$	1,348.80	-
3805	12145	2100 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	160.88	-	-	\$	1,348.80	-
3806	12146	2200 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	-	-	-	\$	1,348.80	-
3807	12147	2300 FOXMEADOW DR	16	King Road	SOUTHEAST (6)	176.38	-	-	\$	1,348.80	-
3808	12148	2400 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	94.99	-	-	\$	1,348.80	-
3809	12149	2500 FOXMEADOW CIR	16	King Road	SOUTHEAST (6)	107.26	-	-	\$	1,348.80	-
161	275	640 N LEWIS RD	17	King Road	SOUTHEAST (6)	1,932.95	-	-	\$	84.30	-
3674	12005	7-27 W RIDGE PIKE/STRP ML	18	King Road	SOUTHEAST (6)	63.37	-	-	\$	927.30	-
3727	12065	125 SUNSET RD	18	King Road	282 GRATERFORD RD (20)	1,198.45	-	-	\$	84.30	-
3772	12112	15 KEYSTONE DR	18	King Road	TRINLEY (5)	2,452.98	-	-	\$	84.30	-
5199	60965	256 SWAMP PIKE/SCHOOL	18	Possum Hollow	RAVENS CLAW (18)	2,015.24	-	-	\$	252.90	-
162	276	339 N LEWIS RD	19	King Road	SOUTHEAST (6)	1,256.59	-	-	\$	84.30	-
3706	12039	W RIDGE PIKE/STRIP/BANK	19	King Road	SOUTH LIMERICK (3)	1,373.73	-	-	\$	674.40	-
3745	12084	542 N LEWIS RD	19	King Road	TRINLEY (5)	112.65	-	-	\$	168.60	-
3411	11737	70 BUCKWALTER RD/1350/APPLEB	20	King Road	SOUTHEAST (6)	3,375.47	-	-	\$	84.30	-
5389	70011	206 JONES BLVD/MICROCOAX	20	Possum Hollow	BROOKE EVANS (16)	14,938.23	-	-	\$	84.30	-
3445	11771	70 BUCKWALTER RD/1250/TEXAS	21	King Road	SOUTHEAST (6)	2,419.39	-	-	\$	84.30	-
3707	12040	22 ANCHOR PARKWAY	23	King Road	SOUTHEAST (6)	1,958.79	-	-	\$	84.30	-
3773	12113	77 GRATERFORD RD	23	King Road	282 GRATERFORD RD (20)	1,208.14	-	-	\$	84.30	-
64	170	677 ELM ST	24	Royersford	ORCHARD TERRACE (OT)	-	-	-	\$	2,023.20	-
3863	12208	430 W LINFIELD TRAPPE RD	24	King Road	TRINLEY (5)	4,782.46	-	-	\$	84.30	-
794	2573	1101 ENTERPRISE DR	28	King Road	TRINLEY (5)	1,182.95	-	-	\$	84.30	-
2502	10679	196 W RIDGE PK/FLEA MKRT	29	King Road	RIDGE PIKE (10)	629.07	-	-	\$	1,686.00	1.80
3869	12214	420 LINFIELD TRAPPE RD	30	King Road	TRINLEY (5)	852.20	-	-	\$	84.30	-
5410	70032	14 W LIGHTCAP RD	34	Possum Hollow	POSSUM HOLLOW (17)	7,741.14	-	-	\$	84.30	-
3401	11727	19 W LINFIELD TRAPPE RD	36	King Road	SOUTHEAST (6)	5,421.59	-	-	\$	84.30	-
107	216	475 N LEWIS RD	52	King Road	SOUTHEAST (6)	3,921.34	-	-	\$	84.30	-
3761	12101	88 ANCHOR PARKWAY	52	King Road	SOUTHEAST (6)	3,746.92	-	-	\$	84.30	-
2292	10357	420 W LINFIELD TRAPPE RD	59	King Road	TRINLEY (5)	5,568.64	-	-	\$	84.30	-
167	282	350 S LEWIS RD	60	King Road	SOUTHEAST (6)	3,791.50	-	-	\$	84.30	-
2465	10630	827 N LEWIS RD	80	King Road	SOUTH LIMERICK (3)	-	-	-	\$	6,744.00	-
3091	11378	FOX RIDGE APTS	97	King Road	SOUTH LIMERICK (3)	-	-	-	\$	8,177.10	-
2685	10913	165 W RIDGE PIKE/TRLR PK	115	King Road	SOUTHEAST (6)	2,050.04	-	-	\$	9,694.50	-
5397	70019	EXELON LIM GEN STA	137	Possum Hollow	POSSUM HOLLOW (17)	6,018.69	-	-	\$	84.30	-
5400	70022	18 LIGHTCAP RD	200	Possum Hollow	POSSUM HOLLOW (17)	-	8,659.75	1,348,000.00	\$	1,041.07	-
5416	8402					4,006.31			\$	7,418.40	-
5416	8402					299,707.92	89,160.697	25,039.14	\$	600,843.05	14,296.74
								7,288,556	\$		1,169.98

ASSET PURCHASE AGREEMENT

7. Aqua and Limerick are parties to an Asset Purchase Agreement dated November 16, 2016. Aqua Exhibit 1, Application ¶ 5 and ¶ 18; *see also* Aqua Exhibit No. 1, Exhibit C.

8. The negotiated purchase price, which is based on arms' length negotiation, is Seventy-Five Million One Hundred Thousand Dollars (\$75,100,000.00). Aqua and Limerick are not affiliated with each other. Aqua Exhibit No. 1, Application ¶ 18 and Aqua St. No. 1 at 6, lines 6 through 10.

9. Aqua will use short term credit lines to fund the transaction. The short term credit funding will be converted to a mix of long-term debt and equity capital shortly after closing. Aqua St. No. 1 at 7, lines 18 through 20; *see also* Aqua Exhibit No. 1, Application ¶ 18.

ASSETS BEING TRANSFERRED

10. The wastewater system assets to be transferred are the "Acquired Assets" and have the meaning specified in Section 2.01 of the Agreement. The Acquired Assets include all real property Limerick owns and uses in the operation of the wastewater system and all sanitary wastewater related treatment and conveyance facilities, including the Possum Hollow Waste Water Treatment Plant ("PHWWTP"), the King Road Waste Water Treatment Plant ("KRWWTTP") and all pipes, pumping stations, manholes and pipelines and billing and collections related assets necessary to run the system. Aqua Exhibit No. 1, Application ¶ 19.

11. Acquired Assets also include the contracts identified on Schedule 4.15 of the Agreement to which Limerick is a party (the "Assigned Contracts"). Since contract parties, other than Limerick, are identified by name, Schedule 4.15 and the Assigned Contracts are considered CONFIDENTIAL. Copies of CONFIDENTIAL Schedule 4.15 and the CONFIDENTIAL Assigned Contracts were included with the Application as Confidential Exhibit F and admitted into evidence as CONFIDENTIAL Aqua Exhibit No. 4. Aqua Exhibit No. 1, Application ¶ 20 and Tr. 13 and 20.

\$5,572,770. Exh. A-14-a, SWPA St. 1 at 11-12. The allocated purchase price for the water system is \$4,734,800 and the wastewater system is \$4,765,200. Appendix A-14, SWPA St. 2 at 4-5.

The valuation experts were paid \$59,145 for the Fair Market Value Appraisal Reports for both the water and wastewater systems. Exh. A-8-a. SWPA also indicates that it will incur transaction and closing costs of approximately \$1,000,000 between the Water System and the Wastewater System, which will be included in rate base. Appendix A-14, SWPA St.1 at 5-6; Appendix A-12.

OCA will examine the ratemaking rate base claims to determine if the claims are reasonable and appropriate for ratemaking purposes.

2. Proposed Rates: SWPA proposes to charge customers of the Mahoning Township system the Mahoning Township water and wastewater rates in effect at closing. Application at 6, 11; Appendix A-13. Those rates will remain in effect until SWPA's next base rate case but SWPA may impose any fee or surcharge permitted by its Commission-approved tariff. Id.

The proposed rates do not appear to match the existing Mahoning Township rates. The OCA will investigate this apparent discrepancy. The OCA will investigate the impacts on the current customers as well as on Mahoning Township customers of the various assumptions and proposals.

3. The OCA submits that additional information is necessary to determine how the transaction will substantially and affirmatively benefit Suez's existing customers.

4. Conditions: Whether any conditions should be imposed upon the proposed transfer to ensure that Suez's customers are treated in a fair and just manner in accord with Pennsylvania law and Commission rules and regulations.

MAHONING TOWNSHIP CUSTOMER LIST

Customer No	Name	Service Address	Service	SWR EDUs	EDU	Count
11470.01	T & S REALTY	304 HOLLOW DR	Sewer	1	1	1431
11471.01	T & S REALTY	306 HOLLOW DR	Sewer	1	1	1432
11472.01	T & S REALTY	308 HOLLOW DR	Sewer	1	1	1433
11473.01	T & S REALTY	310 HOLLOW DR	Sewer	1	1	1434
11474.01	T & S REALTY	312 HOLLOW DR	Sewer	1	1	1435
11475.01	DAVID & JOANNE BROOKO\	32 TERRE LANE	Sewer	1	1	1436
11476.02	JAYA SUGUNARAJ & JESSIT\	214 ABBEY RD	Sewer	1	1	1437
11478.01	DAVID BULBIN & BARBARA	74 WOODLAND DR	Sewer	1	1	1438
11479.01	JEFFREY MOLINARO	1318 BLOOM RD	Sewer	1	1	1439
11480.01	CRYSTAL DOMETITA	91 WOODLAND DR	Sewer	1	1	1440
11482.01	AYUSA SINHA	672 LOWER ST	Sewer	1	1	1441
11483.01	MADIAN YAHYA	676 LOWER ST	Sewer	1	1	1442
11484.01	JEFF WATSON	168 KASEVILLE RD	Sewer	1	1	1443
11485.01	ANWER & SARAH QURESHI	656 LOWER ST	Sewer	1	1	1444
11486.01	ROSS & ASHLEY PETERS	83 TERRE LN	Sewer	1	1	1445
11488.01	QUESHI ANWER	664 LOWER STREET	Sewer	1	1	1446
11489.01	MATHUR HERSH	660 LOWER STREET	Sewer	1	1	1447
11490.01	PRASANNA SANKEPALLI & S	668 LOWER ST	Sewer	1	1	1448
11491.01	MARK GATSKI & CATHERINI	82 DELWOOD DR	Sewer	1	1	1449
11492.01	JONATHAN & LAURA SPAHF	78 TERRE LN	Sewer	1	1	1450
11166.02	DANKO HOLDINGS LP	1301 BLOOM RD	Sewer	0	1	1451
TOTALS					2195	1451

Report Criteria:
Customer.Final bill date = (IS NULL)

Customer #	Name	Service Address	Meter ID	Customer Type	Size
11104.01	ANIMAL CARE	32 ENTERPRISE DR	0049503582	Commercial	1
11107.01	EMMANUEL HOME	MONTOUR BLVD. 11107	8280982952	Commercial	1
11120.02	REDEEMER ORTHODOX PRESBYTER	1820 MONTOUR BLVD.	1540802894	Commercial	1
11121.01	FAB-TEX	29 WOODBINE LANE	0004695133	Commercial	1
11137.01	GEISINGER HEALTH SYSTEMS - MCB	MCBRIDE	1541355520	Commercial	1
11151.01	ROAT-KRINER ROAT	1133 BLOOM RD.	1541286282	Commercial	1
11157.01	TRINITY METHODIST CHURCH	84 LOMBARD AVE	1018010545	Commercial	1
11159.01	VINTAGE KNOLLS ASSISTED LIVING	9 JUSTIN DR 101	1541313242	Commercial	1
11160.01	GEISINGER COMMUNITY HEALTH - VI	44 WOODBINE LANE	0048920994	Commercial	1
11165.01	RINEHART DENTAL	20 WESNER LANE	1481726108	Commercial	1
Total 1:				10	10
11110.01	BUSY BEAVER	23 WESNER LN	0053635505	Commercial	1.5
11139.01	MEADOWS COMM.	77 TOWER VIEW CIRCLE	0051583844	Commercial	1.5
11148.01	SHANER HOTEL GRP ✓	43 PINE BARN PLACE	1832339361	Commercial	1.5
11170.01	HAWKINS CHEVROLET	1856 MONTOUR BLVD.	1852732193	Commercial	1.5
11439.01	GEORGE HEIM CAR WASH	1802 MONTOUR BLVD	1541551330	Commercial	1.5
Total 1.5:				5	5
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	BROKENSHERE JOHN	769 BLOOM RD.	1541276964	Commercial	3/4
11111.01	CERO JAMES PATRICK	795 BLOOM RD	1541282452	Commercial	3/4
11113.01	COLE'S HARDWARE	25 ENTERPRISE ROAD	1541310306	Commercial	3/4
11115.01	HAWKINS JAMES	1581 MONTOUR BLVD.	1852924202	Commercial	3/4
11116.01	HAWKINS COLLISION CENTER	MONTOUR BLVD. 11116	1541425432	Commercial	3/4

Commercial
Water Meters
70

Residential
Water Meters
1116

2"
+ 1 = 15 Wesner Lane
added 5/24/18

Total Meters
=
1186

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

(a) Incorrect Use of Projected Customers

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

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

(b) Inconsistent Purchase Price Values

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



McKeesport sewer system to be sold for \$156 million

September 16, 2016 12:00 AM

By Deana Carpenter

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

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

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

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

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

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

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

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

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

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

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

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

sale will generate enough revenue to cover all of the city's outstanding financial obligations, including the minimum municipal obligations associated with the city's pension funds."

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

EAST END SEWER ACCOUNTS

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

# DAYS	94	90	89	91	87	94	93	91

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

Type	Total Units	Total Active Units	Total Accounts
CO1	145	109	65
CO2	40	16	13
IND			
MIX	8	7	3
RES	1,043	1012	823
Grand Total	1,236	1,144	904

Type	2015 Total	2014 Total
CO1	8,245,000	8,412,000
CO2	3,467,000	3,835,000
IND		
MIX	38,000	61,000
RES	53,351,000	53,952,000
Grand Total	65,101,000	66,260,000

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

SOUTH END SEWER ACCOUNTS

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

# DAYS	94	90	89	91	87	94	93	91

Type	2015-4 GPD	2015-3 GPD	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	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

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

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

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

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

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

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
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By **Steve Marroni** | smarroni@pennlive.com

The sale of Steelton's water system is one step closer to completion.

Pennsylvania American Water announced today it has signed an agreement to acquire the water assets of the Steelton Borough Authority for \$22.5 million.

The two will next seek approval of the acquisition from the Pennsylvania Public Utility Commission and other necessary approvals from the Pennsylvania Department of Environmental Protection, according to the company.



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

	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Qtr	3Q	4Q	1Q	2Q	3Q	4Q
	<u>Jul 24</u>	<u>Jul 17</u>	<u>Jul 10</u>	<u>Jul 3</u>	<u>Jun</u>	<u>May</u>	<u>Apr</u>		<u>2020</u>	<u>2020</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>
Federal Funds Rate	0.09	0.09	0.09	0.08	0.08	0.05	0.05	0.06	0.1	0.1	0.1	0.1	0.1	0.1
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.3	3.3	3.3	3.3	3.3	3.3
LIBOR, 3-mo.	0.25	0.27	0.27	0.30	0.31	0.40	1.09	0.60	0.4	0.4	0.4	0.4	0.5	0.5
Commercial Paper, 1-mo.	0.12	0.12	0.12	0.11	0.12	0.13	0.47	0.24	0.2	0.2	0.2	0.2	0.3	0.3
Treasury bill, 3-mo.	0.12	0.13	0.14	0.15	0.16	0.13	0.14	0.14	0.1	0.2	0.2	0.2	0.2	0.2
Treasury bill, 6-mo.	0.14	0.14	0.16	0.17	0.18	0.15	0.17	0.17	0.2	0.2	0.2	0.2	0.2	0.3
Treasury bill, 1 yr.	0.15	0.15	0.15	0.16	0.18	0.16	0.18	0.17	0.2	0.2	0.2	0.3	0.3	0.4
Treasury note, 2 yr.	0.15	0.15	0.16	0.16	0.19	0.17	0.22	0.19	0.2	0.3	0.3	0.3	0.4	0.5
Treasury note, 5 yr.	0.27	0.29	0.30	0.29	0.34	0.34	0.39	0.36	0.4	0.4	0.5	0.6	0.7	0.8
Treasury note, 10 yr.	0.60	0.63	0.66	0.67	0.73	0.67	0.66	0.69	0.7	0.8	0.9	1.0	1.1	1.2
Treasury bond, 30 yr.	1.28	1.32	1.37	1.42	1.49	1.38	1.27	1.38	1.4	1.5	1.6	1.7	1.8	1.9
Corporate Aaa bond	2.34	2.43	2.50	2.64	2.73	2.85	2.86	2.81	2.4	2.5	2.6	2.7	2.7	2.8
Corporate Baa bond	3.02	3.14	3.22	3.34	3.44	3.69	3.87	3.67	3.6	3.7	3.8	3.8	3.9	3.9
State & Local bonds	2.94	3.00	3.05	3.07	3.10	3.33	3.41	3.28	2.5	2.5	2.6	2.6	2.7	2.8
Home mortgage rate	3.01	2.98	3.03	3.07	3.16	3.23	3.31	3.23	3.1	3.1	3.1	3.2	3.2	3.3
Key Assumptions	History								Consensus Forecasts-Quarterly					
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
	<u>2018</u>	<u>2018</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>
Fed's AFE Index	107.8	109.4	109.4	110.3	110.5	110.3	111.2	112.4	109.7	109.7	109.7	109.5	109.3	109.1
Real GDP	2.1	1.3	2.9	1.5	2.6	2.4	-5.0	-32.9	18.4	6.7	5.8	4.7	4.0	3.4
GDP Price Index	1.8	1.8	1.2	2.5	1.5	1.4	1.4	-1.8	1.5	1.3	1.5	1.6	1.7	1.7
Consumer Price Index	2.1	1.3	0.9	3.0	1.8	2.4	1.2	-3.5	2.5	1.7	1.9	1.7	2.0	2.0

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

8/31/2020

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Month

Month End	7/31/2020	6/30/2020	5/31/2020	Month End	4/30/2020	Month End	3/31/2020	Month End	2/29/2020	Month End	1/31/2020	Month End	12/31/2019	Month End	11/30/2019	Month End	10/31/2019	Month End	9/30/2019	Month End	8/31/2019	Month End	7/31/2019	Month End	6/30/2019	Month End	5/31/2019	Month End	4/30/2019	Month End	3/31/2019	Month End	2/28/2019	Month End	1/31/2019	Month End	12/31/2018	Month End	11/30/2018	Month End	10/31/2018																																																																																																																																																																																																																																																																					
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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		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 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Month End	8/31/2020	7/31/2020	6/30/2020	5/31/2020	4/30/2020	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
0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19	-20	-21	-22	-23
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
Company Name	1,000	1,006	1,025	1,037	1,063	1,032	1,162	1,140	1,145	1,259	1,197	1,260	1,067	1,040	1,040	1,010	1,011	1,035	0,984	0,976	0,995	0,921	0,931
AMERICAN STATES WATER CO	1,000	1,023	0,928	0,938	0,900	0,889	0,913	0,968	0,899	0,907	0,919	0,922	0,948	0,880	0,882	0,843	0,824	0,785	0,758	0,797	0,758	0,758	0,758
AMERICAN WATER WORKS CO IN	1,000	1,020	0,972	1,402	1,006	0,983	0,971	1,104	1,007	0,968	0,985	0,975	0,980	1,092	1,080	1,062	1,039	0,858	0,877	0,840	0,825	0,810	0,810
AQUA AMERICA INC	1,000	0,984	1,003	0,994	0,985	1,033	0,989	1,057	1,045	1,056	1,042	1,043	1,046	1,021	1,040	1,029	1,032	1,057	1,107	1,027	1,018	1,068	1,065
ARTESIAN RESOURCES -CL A	1,000	1,013	1,006	1,011	0,980	1,043	1,030	1,086	1,071	1,088	1,158	1,113	1,189	1,127	1,084	1,087	1,106	1,147	1,128	1,086	1,056	1,051	0,983
CALIFORNIA WATER SERVICE GP	1,000	0,998	1,030	1,068	0,968	0,965	0,995	1,100	1,077	1,104	1,070	1,040	1,027	1,049	0,984	1,009	0,982	0,953	1,013	0,975	0,934	0,942	0,834
MIDDLESEX WATER CO	1,000	0,993	0,990	1,014	0,974	0,958	1,534	1,088	1,057	1,070	1,091	1,032	1,052	1,003	0,933	0,960	0,966	0,955	0,959	1,139	1,076	0,872	0,923
SIW GROUP	1,000	1,010	1,041	0,986	0,907	0,966	0,948	1,044	1,020	1,007	0,993	0,986	0,876	0,845	0,840	0,821	0,812	0,817	0,861	0,791	0,775	0,804	0,765
YORK WATER CO																							

	Enterprise value to Inv. Cap																					
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	
AMERICAN STATES WATER CO	1.000	1.023	0.928	0.978	0.938	0.927	0.962	1.020	0.948	0.952	0.965	0.968	1.005	0.933	0.934	0.944	0.903	0.880	0.879	0.837	0.808	0.845
AMERICAN WATER WORKS CO IN	1.000	1.020	0.972	1.412	1.013	0.990	0.957	1.087	0.992	0.959	0.976	0.966	1.373	1.531	1.515	1.502	1.470	1.213	1.249	1.196	1.175	1.214
AQUA AMERICA INC	1.000	0.984	1.003	0.991	0.982	1.029	0.992	1.059	1.047	1.070	1.056	1.057	1.069	1.043	1.063	1.054	1.058	1.083	1.139	1.057	1.048	1.097
ARTESIAN RESOURCES -CL A	1.000	1.013	1.006	1.063	1.030	1.097	1.083	1.142	1.126	1.140	1.213	1.166	1.257	1.192	1.146	1.163	1.184	1.227	1.191	1.146	1.115	1.135
CALIFORNIA WATER SERVICE GP	1.000	0.998	1.030	1.077	0.975	0.973	0.983	1.086	1.064	1.072	1.175	1.142	1.140	1.164	1.092	1.135	1.104	1.072	1.142	1.099	1.053	1.071
MIDDLESEX WATER CO	1.000	0.993	0.990	1.014	0.974	0.958	1.555	1.103	1.071	1.075	1.096	1.037	1.058	1.008	0.938	0.958	0.964	0.953	1.366	1.622	1.531	1.326
SIW GROUP	1.000	1.010	1.041	0.987	0.908	0.967	0.954	1.050	1.026	1.025	1.011	1.004	0.896	0.865	0.860	0.838	0.829	0.835	0.892	0.820	0.802	0.789
YORK WATER CO																						

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Month End	7/31/2020	6/30/2020	5/31/2020	4/30/2020	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%	101%	100%	104%	98%	97%	99%	109%	105%	106%	106%	104%	104%	104%	101%	102%	100%	95%	99%	98%	96%	88%
Enterprise value to Inv Cap	100%	101%	100%	104%	98%	98%	99%	109%	105%	107%	108%	107%	107%	105%	106%	114%	108%	105%	108%	108%	105%	101%

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Company Name	9/30/2018	8/31/2018	7/31/2018	6/30/2018	5/31/2018	4/30/2018	3/31/2018	2/28/2018	1/31/2018	12/31/2017	11/30/2017	10/31/2017	9/30/2017	8/31/2017	7/31/2017	6/30/2017	5/31/2017	4/30/2017	3/31/2017	2/28/2017	1/31/2017	12/31/2016	11/30/2016	10/31/2016	9/30/2016
AMERICAN STATES WATER COMF	2.115	2.128	2.112	2.024	2.021	2.000	1.919	1.958	2.005	2.088	2.128	2.004	1.863	1.894	1.944	1.879	1.805	1.760	1.752	1.800	1.756	1.813	1.744	1.651	1.653
AMERICAN WATER WORKS COMP	1.441	1.462	1.436	1.405	1.400	1.433	1.372	1.393	1.416	1.511	1.540	1.497	1.438	1.474	1.433	1.396	1.411	1.419	1.396	1.443	1.367	1.354	1.378	1.397	1.407
ESSENTIAL UTILITIES, INC.	1.593	1.626	1.606	1.549	1.550	1.555	1.519	1.558	1.609	1.710	1.707	1.621	1.536	1.574	1.556	1.553	1.549	1.553	1.519	1.535	1.479	1.465	1.478	1.509	1.501
ARTESIAN RESOURCES CORPORA	0.966	0.972	0.980	1.014	1.035	1.009	0.973	0.926	1.009	1.036	1.138	1.102	1.040	1.044	1.072	1.053	1.009	1.070	0.943	0.957	0.919	0.941	0.942	0.879	0.885
CALIFORNIA WATER SERVICE GRU	1.349	1.339	1.338	1.325	1.324	1.289	1.228	1.284	1.351	1.463	1.510	1.420	1.322	1.332	1.369	1.294	1.267	1.294	1.271	1.316	1.239	1.223	1.261	1.168	1.202
MIDDLESEX WATER COMPANY	1.664	1.636	1.567	1.592	1.505	1.361	1.345	1.410	1.476	1.697	1.601	1.474	1.486	1.497	1.384	1.467	1.384	1.467	1.430	1.481	1.486	1.648	1.610	1.454	1.426
SIW GROUP	1.317	1.289	1.396	1.406	1.380	1.336	1.200	1.208	1.309	1.373	1.480	1.334	1.276	1.288	1.243	1.184	1.195	1.209	1.211	1.219	1.230	1.332	1.329	1.276	1.147
THE YORK WATER COMPANY	1.655	1.657	1.688	1.724	1.776	1.755	1.702	1.573	1.731	1.832	2.006	1.910	1.852	1.859	1.932	1.883	2.079	1.963	2.043	2.034	2.149	2.076	1.850	1.757	1.757

Company Name	Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value		Enterprise value to value	
	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap
AMERICAN STATES WATER COMF	2.814	2.834	2.812	2.695	2.693	2.666	2.558	2.609	2.672	2.782	2.820	2.656	2.468	2.371	2.434	2.352	2.312	2.254	2.243	2.246	2.319	2.259	2.138	2.141
AMERICAN WATER WORKS COMP	1.714	1.790	1.758	1.720	1.735	1.776	1.700	1.681	1.710	1.824	1.846	1.794	1.699	1.732	1.721	1.677	1.706	1.716	1.688	1.733	1.642	1.626	1.639	1.662
ESSENTIAL UTILITIES, INC.	2.043	2.128	2.102	2.027	2.039	2.045	1.998	2.057	2.124	2.258	2.240	2.127	2.016	2.088	2.064	2.061	2.067	2.023	2.039	1.964	1.946	1.963	2.005	1.994
ARTESIAN RESOURCES CORPORA	1.696	1.696	1.711	1.770	1.824	1.778	1.714	1.613	1.757	1.805	1.961	1.899	1.792	1.794	1.842	1.809	1.734	1.838	1.620	1.657	1.592	1.630	1.603	1.496
CALIFORNIA WATER SERVICE GRU	1.877	1.887	1.885	1.782	1.791	1.743	1.660	1.769	1.861	2.016	2.068	1.946	1.810	1.878	1.930	1.824	1.780	1.818	1.787	1.882	1.772	1.770	1.770	1.636
MIDDLESEX WATER COMPANY	2.300	2.305	2.208	2.123	2.224	2.103	1.903	1.882	1.974	2.066	2.395	2.260	2.081	2.054	2.093	1.953	2.069	2.017	2.060	2.067	2.292	2.252	2.034	1.996
SIW GROUP	1.823	1.805	1.956	1.969	1.918	1.857	1.668	1.714	1.857	1.948	2.116	1.907	1.825	1.825	1.761	1.678	1.623	1.642	1.645	1.685	1.700	1.841	1.836	1.764
THE YORK WATER COMPANY	2.252	2.272	2.315	2.364	2.417	2.388	2.316	2.162	2.380	2.518	2.771	2.638	2.557	2.551	2.652	2.655	2.545	2.810	2.654	2.701	2.688	2.841	2.748	2.449

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Company Name	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE	Month End	Enterprise value to Net PPE
AMERICAN STATES WATER CO	9/30/2018	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
AMERICAN STATES WATER CO	9/30/2018	0.920	0.926	0.919	0.880	0.879	0.870	0.835	0.852	0.872	0.908	0.925	0.872	0.810	0.824	0.845	0.817	0.785	0.765	0.762	0.783	0.764	0.788	0.759	0.718	0.719
AMERICAN WATER WORKS CO IN	9/30/2018	0.754	0.765	0.752	0.735	0.733	0.750	0.718	0.729	0.741	0.791	0.806	0.784	0.742	0.751	0.750	0.721	0.739	0.743	0.731	0.755	0.716	0.709	0.721	0.731	0.737
AQUA AMERICA INC	9/30/2018	0.889	0.907	0.896	0.864	0.865	0.867	0.847	0.869	0.897	0.954	0.952	0.904	0.857	0.878	0.868	0.866	0.864	0.866	0.848	0.856	0.825	0.817	0.824	0.842	0.837
ARTESIAN RESOURCES -CL A	9/30/2018	1.070	1.077	1.086	1.124	1.147	1.118	1.078	1.027	1.118	1.148	1.261	1.221	1.152	1.157	1.188	1.167	1.118	1.185	1.045	1.060	1.019	1.043	1.044	0.974	0.981
CALIFORNIA WATER SERVICE GP	9/30/2018	0.998	0.991	0.990	0.936	0.980	0.953	0.908	0.950	0.999	1.083	1.117	1.051	0.978	0.986	1.013	0.957	0.937	0.957	0.941	0.974	0.917	0.905	0.934	0.864	0.889
MIDDLESEX WATER CO	9/30/2018	0.884	0.869	0.833	0.801	0.846	0.800	0.723	0.714	0.749	0.784	0.901	0.851	0.783	0.775	0.790	0.796	0.736	0.779	0.760	0.787	0.790	0.876	0.855	0.772	0.758
SIW GROUP	9/30/2018	0.921	0.901	0.976	0.983	0.965	0.934	0.839	0.844	0.915	0.960	1.034	0.932	0.892	0.900	0.869	0.828	0.836	0.845	0.847	0.852	0.860	0.931	0.929	0.892	0.802
YORK WATER CO	9/30/2018	0.750	0.751	0.766	0.782	0.805	0.796	0.772	0.713	0.785	0.831	0.910	0.866	0.840	0.843	0.877	0.877	0.854	0.943	0.890	0.927	0.922	0.975	0.941	0.839	0.797

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	Enterprise value to Inv Cap
AMERICAN STATES WATER CO	0.952	0.959	0.952	0.912	0.911	0.902	0.865	0.883	0.904	0.941	0.954	0.899	0.835	0.802	0.823	0.796	0.782	0.763	0.759	0.779	0.760	0.785	0.764	0.723	0.724
AMERICAN WATER WORKS CO IN	0.800	0.836	0.820	0.803	0.810	0.829	0.793	0.784	0.798	0.851	0.861	0.837	0.793	0.809	0.803	0.782	0.796	0.801	0.788	0.809	0.766	0.759	0.765	0.776	0.781
AQUA AMERICA INC	1.260	1.312	1.296	1.250	1.258	1.261	1.232	1.268	1.310	1.393	1.381	1.312	1.243	1.288	1.273	1.271	1.271	1.275	1.247	1.257	1.211	1.200	1.210	1.236	1.230
ARTESIAN RESOURCES -CL A	1.099	1.100	1.109	1.148	1.183	1.153	1.112	1.046	1.139	1.170	1.272	1.231	1.162	1.163	1.194	1.173	1.125	1.192	1.051	1.074	1.033	1.057	1.039	0.970	0.977
CALIFORNIA WATER SERVICE GP	1.078	1.083	1.082	1.023	1.028	1.000	0.953	1.015	1.068	1.157	1.187	1.117	1.039	1.078	1.108	1.047	1.022	1.044	1.026	1.081	1.017	1.004	1.016	0.939	0.967
MIDDLESEX WATER CO	1.006	1.008	0.965	0.928	0.973	0.920	0.832	0.823	0.863	0.904	1.047	0.988	0.910	0.898	0.915	0.922	0.854	0.904	0.882	0.901	0.904	1.002	0.985	0.889	0.873
SIW GROUP	1.322	1.309	1.418	1.428	1.391	1.347	1.210	1.243	1.347	1.413	1.535	1.383	1.324	1.323	1.278	1.217	1.177	1.191	1.193	1.222	1.233	1.335	1.332	1.279	1.150
YORK WATER CO	0.773	0.780	0.795	0.812	0.830	0.820	0.795	0.742	0.817	0.865	0.951	0.906	0.878	0.876	0.910	0.912	0.874	0.965	0.911	0.927	0.923	0.976	0.944	0.841	0.798

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Enterprise value to Net PPE	Enterprise value to Inv Cap	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value
9/30/2018	8/31/2018	7/31/2018	6/30/2018	5/31/2018	4/30/2018	3/31/2018	2/28/2018	1/31/2018	12/31/2017	11/30/2017	10/31/2017	9/30/2017	8/31/2017	7/31/2017	6/30/2017	5/31/2017	4/30/2017	3/31/2017	2/28/2017	1/31/2017	12/31/2016	11/30/2016	10/31/2016	9/30/2016	8/31/2016	7/31/2016
90%	90%	91%	87%	87%	84%	85%	85%	88%	93%	94%	89%	85%	86%	87%	85%	84%	86%	85%	85%	85%	84%	89%	89%	84%	80%	80%
104%	105%	102%	98%	98%	96%	91%	95%	95%	99%	105%	112%	105%	97%	99%	101%	98%	95%	100%	97%	100%	97%	100%	99%	91%	92%	92%

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Company Name	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	9/30/2014	8/31/2014	
AMERICAN STATES WATER COMF	1.659	1.778	1.799	1.667	1.751	1.671	1.824	1.904	1.782	1.806	1.757	1.757	1.781	1.661	1.681	1.637	1.668	1.673	1.738	1.776	1.774	1.698	1.603	1.643	1.435	1.505
AMERICAN WATER WORKS COMP	1.418	1.516	1.540	1.425	1.397	1.348	1.327	1.318	1.250	1.246	1.237	1.206	1.187	1.173	1.173	1.128	1.193	1.208	1.204	1.223	1.244	1.204	1.221	1.230	1.157	1.202
ESSENTIAL UTILITIES, INC.	1.521	1.670	1.708	1.605	1.579	1.585	1.564	1.588	1.522	1.533	1.501	1.418	1.402	1.392	1.354	1.354	1.437	1.450	1.430	1.462	1.490	1.476	1.498	1.483	1.371	1.459
ARTESIAN RESOURCES CORPORA	0.877	1.017	1.016	0.898	0.882	0.901	0.916	0.957	0.894	0.876	0.839	0.834	0.798	0.784	0.784	0.774	0.784	0.798	0.795	0.798	0.806	0.815	0.808	0.814	0.770	0.801
CALIFORNIA WATER SERVICE GR	1.189	1.279	1.289	1.164	1.129	1.079	1.038	1.028	0.976	0.970	0.965	0.968	0.942	0.969	0.993	1.042	1.041	1.049	1.090	1.048	1.050	1.078	1.108	1.009	1.081	
MIDDLESEX WATER COMPANY	1.396	1.632	1.700	1.503	1.503	1.313	1.254	1.287	1.205	1.185	1.187	1.122	1.098	1.096	1.090	1.072	1.113	1.112	1.154	1.106	1.147	1.124	1.140	1.037	1.077	
SIW GROUP	1.146	1.139	1.078	1.031	1.029	1.068	1.073	0.989	0.933	0.966	0.991	0.973	0.948	0.969	0.977	0.992	0.975	1.013	1.059	1.058	1.025	0.997	1.037	0.927	0.954	
THE YORK WATER COMPANY	1.702	1.859	1.888	1.645	1.782	1.825	1.703	1.649	1.564	1.527	1.490	1.382	1.408	1.417	1.392	1.476	1.610	1.566	1.540	1.540	1.517	1.382	1.481	1.378	1.399	

Company Name	Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			Enterprise value to value			
	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap	Inv Cap		
AMERICAN STATES WATER COMF	2.171	2.327	2.354	2.188	2.298	2.192	2.341	2.443	2.287	2.302	2.240	2.270	2.050	2.074	2.021	2.045	2.051	2.131	2.156	2.153	2.061	1.933	1.981	1.731	1.766	1.766	1.766	1.766	1.766	1.766	
AMERICAN WATER WORKS COMP	1.689	1.805	1.834	1.711	1.677	1.618	1.566	1.556	1.476	1.462	1.452	1.416	1.408	1.392	1.338	1.430	1.449	1.444	1.444	1.468	1.421	1.419	1.430	1.345	1.403	1.403	1.403	1.403	1.403	1.403	
ESSENTIAL UTILITIES, INC.	2.029	2.229	2.279	2.151	2.116	2.124	2.067	2.099	2.011	2.016	1.974	1.865	1.854	1.841	1.791	1.921	1.938	1.911	1.930	1.966	1.947	1.966	1.946	1.799	1.909	1.909	1.909	1.909	1.909	1.909	
ARTESIAN RESOURCES CORPORA	1.468	1.703	1.700	1.482	1.455	1.487	1.506	1.574	1.470	1.424	1.364	1.355	1.301	1.278	1.262	1.245	1.268	1.263	1.288	1.302	1.317	1.297	1.308	1.236	1.289	1.289	1.289	1.289	1.289	1.289	
CALIFORNIA WATER SERVICE GR	1.680	1.806	1.822	1.652	1.603	1.532	1.439	1.424	1.352	1.353	1.346	1.351	1.310	1.347	1.381	1.454	1.463	1.464	1.528	1.468	1.471	1.500	1.541	1.404	1.519	1.519	1.519	1.519	1.519	1.519	
MIDDLESEX WATER COMPANY	1.975	2.309	2.405	2.104	1.838	1.668	1.711	1.603	1.576	1.578	1.493	1.458	1.458	1.455	1.447	1.410	1.465	1.463	1.477	1.415	1.468	1.438	1.458	1.327	1.392	1.392	1.392	1.392	1.392	1.392	
SIW GROUP	1.606	1.597	1.512	1.397	1.394	1.447	1.486	1.370	1.292	1.323	1.359	1.333	1.299	1.328	1.340	1.324	1.330	1.351	1.429	1.428	1.384	1.402	1.459	1.304	1.350	1.350	1.350	1.350	1.350	1.350	
THE YORK WATER COMPANY	2.260	2.468	2.507	2.198	2.382	2.439	2.254	2.182	2.070	2.026	1.976	1.833	1.857	1.869	1.837	1.951	2.037	2.071	2.037	2.037	2.006	1.816	1.945	1.811	1.802	1.802	1.802	1.802	1.802	1.802	1.802

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	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	Month End	Month End	Month End	Month End	Month End	Month End	Month End	Month End
	8/31/2014	7/31/2014	6/30/2014	5/31/2014	4/30/2014	3/31/2014	2/29/2014	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	3/31/2013	2/28/2013	1/31/2013	12/31/2012	11/30/2012	10/31/2012	9/30/2012	8/31/2012	7/31/2012	6/30/2012
Company Name	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE	Enterprise value to Net PPE
AMERICAN STATES WATER CO	0.722	0.773	0.783	0.725	0.762	0.727	0.793	0.828	0.775	0.786	0.764	0.775	0.722	0.731	0.712	0.725	0.728	0.756	0.773	0.771	0.739	0.697	0.715	0.624	0.655	0.655	0.655
AMERICAN WATER WORKS CO IN	0.742	0.793	0.806	0.746	0.731	0.706	0.694	0.690	0.654	0.652	0.648	0.631	0.621	0.614	0.590	0.624	0.633	0.630	0.640	0.651	0.630	0.639	0.644	0.606	0.629	0.629	0.629
AQUA AMERICA INC	0.848	0.932	0.953	0.895	0.881	0.884	0.873	0.886	0.849	0.855	0.837	0.791	0.782	0.776	0.755	0.802	0.809	0.797	0.816	0.831	0.823	0.836	0.827	0.765	0.814	0.814	0.814
ARTESIAN RESOURCES -CL A	0.972	1.127	1.125	0.996	0.978	0.999	1.015	1.060	0.991	0.971	0.930	0.924	0.884	0.869	0.858	0.868	0.884	0.881	0.884	0.894	0.903	0.895	0.902	0.853	0.888	0.888	0.888
CALIFORNIA WATER SERVICE GP	0.880	0.946	0.954	0.861	0.835	0.798	0.768	0.760	0.722	0.718	0.714	0.716	0.697	0.717	0.735	0.771	0.770	0.776	0.806	0.775	0.777	0.798	0.820	0.747	0.799	0.799	0.799
MIDDLESEX WATER CO	0.742	0.867	0.903	0.799	0.799	0.697	0.667	0.684	0.640	0.630	0.631	0.596	0.583	0.582	0.579	0.569	0.591	0.613	0.588	0.609	0.597	0.606	0.551	0.572	0.572	0.572	
SIW GROUP	0.801	0.796	0.754	0.721	0.719	0.746	0.750	0.692	0.652	0.675	0.693	0.680	0.662	0.677	0.683	0.694	0.681	0.708	0.740	0.740	0.717	0.697	0.725	0.648	0.667	0.667	
YORK WATER CO	0.772	0.843	0.856	0.746	0.808	0.827	0.772	0.748	0.709	0.692	0.675	0.627	0.638	0.642	0.631	0.669	0.730	0.710	0.699	0.699	0.688	0.627	0.672	0.625	0.635	0.635	0.635

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	Enterprise Value to Inv Cap
AMERICAN STATES WATER CO	0.734	0.787	0.796	0.740	0.778	0.742	0.792	0.827	0.774	0.779	0.758	0.768	0.694	0.702	0.684	0.692	0.694	0.721	0.730	0.728	0.697	0.654	0.670	0.586	0.597
AMERICAN WATER WORKS CO IN	0.788	0.842	0.856	0.799	0.782	0.755	0.731	0.726	0.689	0.682	0.677	0.661	0.657	0.649	0.625	0.667	0.676	0.674	0.674	0.685	0.663	0.662	0.667	0.628	0.655
AQUA AMERICA INC	1.251	1.374	1.406	1.326	1.305	1.310	1.275	1.294	1.240	1.243	1.217	1.150	1.135	1.104	1.104	1.185	1.195	1.178	1.190	1.212	1.201	1.213	1.200	1.110	1.177
ARTESIAN RESOURCES -CL A	0.952	1.104	1.103	0.961	0.944	0.964	0.977	1.020	0.953	0.924	0.884	0.879	0.844	0.828	0.818	0.807	0.822	0.819	0.835	0.845	0.854	0.841	0.848	0.802	0.836
CALIFORNIA WATER SERVICE GP	0.964	1.037	1.046	0.948	0.920	0.879	0.836	0.818	0.776	0.777	0.773	0.775	0.752	0.773	0.793	0.835	0.834	0.841	0.877	0.843	0.845	0.861	0.885	0.806	0.872
MIDDLESEX WATER CO	0.863	1.009	1.051	0.920	0.920	0.804	0.729	0.748	0.701	0.689	0.690	0.653	0.638	0.636	0.633	0.617	0.640	0.640	0.646	0.619	0.642	0.629	0.638	0.580	0.608
SIW GROUP	1.165	1.158	1.096	1.013	1.011	1.049	1.078	0.993	0.937	0.960	0.985	0.967	0.942	0.963	0.972	0.960	0.943	0.980	1.037	1.036	1.004	1.017	1.058	0.946	0.979
YORK WATER CO	0.776	0.848	0.861	0.755	0.818	0.837	0.774	0.749	0.711	0.696	0.679	0.630	0.638	0.642	0.631	0.670	0.731	0.711	0.700	0.700	0.689	0.624	0.668	0.622	0.619

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Enterprise value to Net PPE	Enterprise value to Inv Cap	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value	Enterprise value to value
79%	86%	88%	77%	80%	77%	77%	81%	75%	72%	70%	70%	70%	68%	70%	74%	75%	73%	73%	76%	76%	73%	70%	72%	64%	66%	
91%	102%	105%	93%	92%	86%	77%	81%	82%	77%	78%	77%	77%	70%	72%	74%	75%	75%	75%	78%	78%	77%	75%	76%	71%	75%	

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 \$)							
Comparable Group								
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 (\$ 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	59,532
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	311
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
GSWC			
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			
Advances		1,415,705	1,296,310
CIAC		63,989	66,305
Deffax		134,706	124,385
ITC		127,806	118,241
		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	17,409
Advances			
		240	252
CIAC			
		1,355	1,322
DefTax			
		1,893	1,740
ITC			
		0	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 and 2018, respectively		(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	502,527
Advances		5,421	6,596
CIAC		149,479	138,015
DefTax		52,259	55,054
ITC		490	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	2,232,723
	Advances	191,062	186,342
	CIAC	241,537	225,270
	DefTax	222,590	213,033
	ITC	1,575	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	299,871
	Advances	7,844	6,849
	CIAC	40,029	39,725
	DefTax	40,426	36,962
	ITC	0	0



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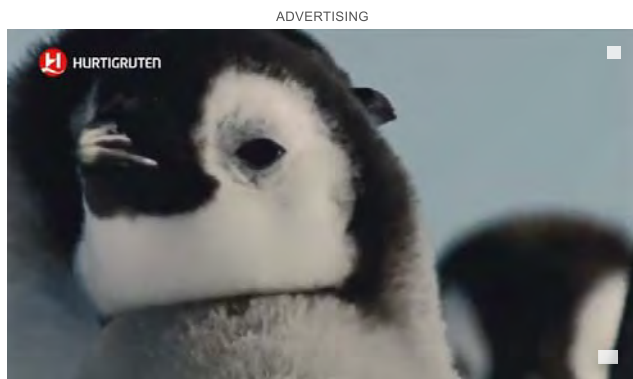
To pay for the acquisition, SJW will initially utilize a \$975 million bridge loan from financial adviser JP Morgan Chase ([JPM.N](#)). Ultimately, the purchase would be covered by debt and between \$450 million and \$500 million of equity finance.

Appendix A-5.2 (Gannett)

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

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

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

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

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

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

RBS sounds alarm over Brexit

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

Reporting by David French in New York; Additional Reporting by Liana B. Baker; Editing by Lisa Shumaker

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CONNECTICUT WATER SERVICE INC / CT

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Form Type: 10-K

Period End: Dec 31, 2017

Date Filed: Mar 15, 2018

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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED BALANCE SHEETS

December 31, (in thousands, except share amounts)

2017 2016

ASSETS

Utility Plant	\$ 927,289	\$ 777,860
Construction Work in Progress	11,761	33,748
	939,050	811,608
Accumulated Provision for Depreciation	(241,327)	(210,212)
Net Utility Plant	697,723	601,396
Other Property and Investments	10,662	9,071
Cash and Cash Equivalents	3,618	1,564
Accounts Receivable (Less Allowance, 2017 - \$1,265; 2016 - \$1,100)	14,965	13,024
Accrued Unbilled Revenues	8,481	8,171
Materials and Supplies, at Average Cost	1,593	1,536
Prepayments and Other Current Assets	7,021	5,069
Total Current Assets	35,678	29,364
Unrecovered Income Taxes - Regulatory Asset	66,631	93,264
Pension Benefits - Regulatory Asset	11,339	12,266
Post-Retirement Benefits Other Than Pension - Regulatory Asset	116	265
Goodwill	67,016	30,427
Deferred Charges and Other Costs	9,618	8,449
Total Regulatory and Other Long-Term Assets	154,720	144,671
Total Assets	\$ 898,783	\$ 784,502

CAPITALIZATION AND LIABILITIES

Common Stockholders' Equity:

Common Stock Without Par Value: Authorized - 25,000,000

Shares

Issued and Outstanding:

2017 - 12,065,016; 2016 - 11,248,458	\$ 191,641	\$ 145,739
Retained Earnings	102,417	91,213
Accumulated Other Comprehensive Loss	(428)	(924)
Common Stockholders' Equity	293,630	236,028
Preferred Stock	772	772
Long-Term Debt	253,367	197,047
Total Capitalization	547,769	433,847
Current Portion of Long-Term Debt	6,173	4,859
Interim Bank Loans Payable	19,281	32,953
Accounts Payable and Accrued Expenses	11,319	13,116
Accrued Interest	1,439	1,012
Current Portion of Refund to Customers - Regulatory Liability	64	855
Other Current Liabilities	3,262	2,330
Total Current Liabilities	41,538	55,125
Advances for Construction	20,024	19,127
Deferred Federal and State Income Taxes	33,579	50,558
Unfunded Future Income Taxes	58,384	90,977
Long-Term Compensation Arrangements	32,649	33,540
Unamortized Investment Tax Credits - Regulatory Liability	1,133	1,189
Excess Accumulated Deferred Income Tax - Regulatory Liability	30,937	4,373
Refund to Customers - Regulatory Liability	-	108
Other Long-Term Liabilities	1,241	701
Total Long-Term Liabilities	177,947	200,573
Contributions in Aid of Construction	131,529	94,957
Commitments and Contingencies	-	-
Total Capitalization and Liabilities	\$ 898,783	\$ 784,502

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CONNECTICUT WATER SERVICE INC / CT
INCOME_STATEMENT2

Form Type: 10-K

Period End: Dec 31, 2017

Date Filed: Mar 15, 2018

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CONNECTICUT WATER SERVICE, INC.

CONSOLIDATED STATEMENTS OF INCOME

For the Years Ended December 31, (in thousands,
except per share data)

	2017	2016	2015
Operating Revenues	\$ 107,054	\$ 98,667	\$ 96,041
Operating Expenses			
Operation and Maintenance	48,017	44,191	48,052
Depreciation	16,684	13,905	12,871
Income Taxes	(1,993)	2,570	(818)
Taxes Other Than Income Taxes	10,941	9,796	9,294
Total Operating Expenses	73,649	70,462	69,399
Net Operating Revenues	33,405	28,205	26,642
Other Utility Income, Net of Taxes	824	744	797
Total Utility Operating Income	34,229	28,949	27,439
Other Income (Deductions), Net of Taxes			
(Loss) Gain on Real Estate Transactions	33	(54)	349
Non-Water Sales Earnings	1,167	1,219	1,394
Allowance for Funds Used During Construction	774	1,198	530
Other	(2,308)	(1,009)	(214)
Total Other Income (Loss), Net of Taxes	(334)	1,354	2,059
Interest and Debt Expenses			
Interest on Long-Term Debt	9,054	7,714	7,087
Other Interest Income, Net	(359)	(922)	(458)
Amortization of Debt Expense and Premium, Net	146	124	108
Total Interest and Debt Expenses	8,841	6,916	6,737
Net Income	25,054	23,387	22,761
Preferred Stock Dividend Requirement	38	38	38
Total Net Income Applicable to Common Stock	\$ 25,016	\$ 23,349	\$ 22,723
Weighted Average Common Shares Outstanding:			
Basic	11,540	11,009	10,958
Diluted	11,762	11,228	11,164
Earnings Per Common Share:			
Basic	\$ 2.17	\$ 2.12	\$ 2.07
Diluted	\$ 2.13	\$ 2.08	\$ 2.04

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the Years Ended December 31, (in thousands)

	2017	2016	2015
Net Income	\$ 25,054	\$ 23,387	\$ 22,761
Other Comprehensive Income (Loss), net of tax			
Adjustment to post-retirement benefit plans, net of tax benefit			
(expense) of \$(419), \$15, and \$(505) in 2017, 2016, and 2015, respectively	289	(24)	765
Unrealized Investment gain (loss), net of tax (expense) benefit of \$(13), \$(22) and \$62, in 2017, 2016, and 2015, respectively	207	35	(97)
Other Comprehensive Income, net of tax	\$ 496	\$ 11	\$ 668
Comprehensive Income	\$ 25,550	\$ 23,398	\$ 23,429

***Township Of Upper Pottsgrove Data &
Demographics (As of July 1, 2020)***

POPULATION

Total Population	5,530
Population in Households	5,530
Population in Families	4,894
Population in Group Qtrs	0
Population Density	1,095
Diversity Index ¹	32

INCOME

Median Household Income	\$101,481
Average Household Income	\$117,435
% of Income for Mortgage	10%
Per Capita Income	\$41,240
Wealth Index ⁴	145

HOUSING

Total HU (Housing Units)	2,037 (100%)
Owner Occupied HU	1,742 (85.5%)
Renter Occupied HU	200 (9.8%)
Vacant Housing Units	95 (4.7%)
Median Home Value	\$232,737
Average Home Value	\$254,635
Housing Affordability Index ²	182

HOUSEHOLDS

Total Households	1,942
Average Household Size	2.85
Family Households	1,540
Average Family Size	3

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



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.

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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:

- o **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).
- o **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.
- o **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	2015							2015-2045		
	2010 Census	Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	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

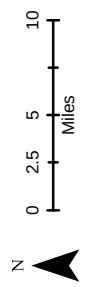
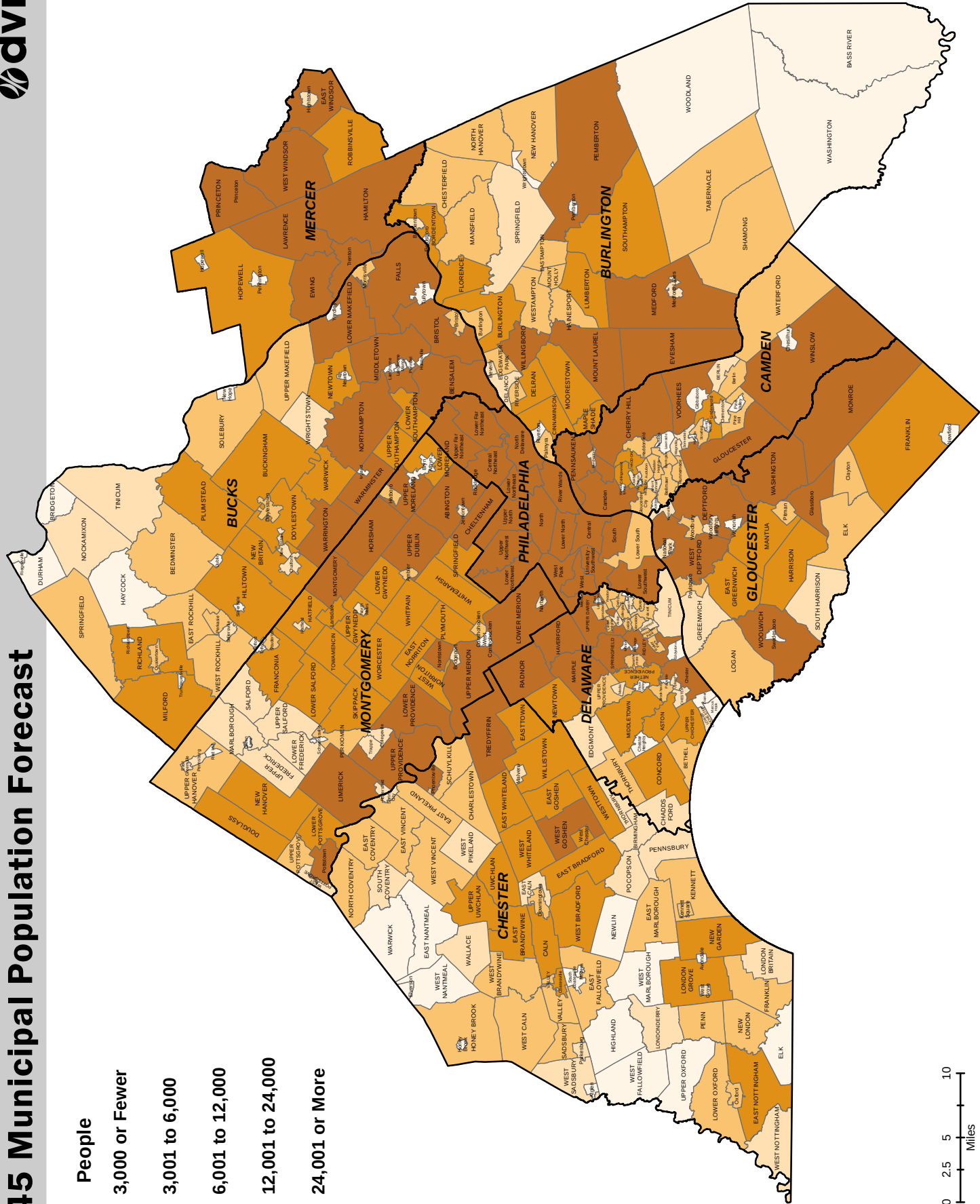
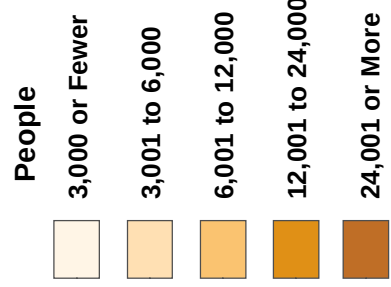


Figure 2:
2045 Municipal Population Forecast
Absolute Change: 2015–2045

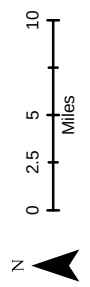
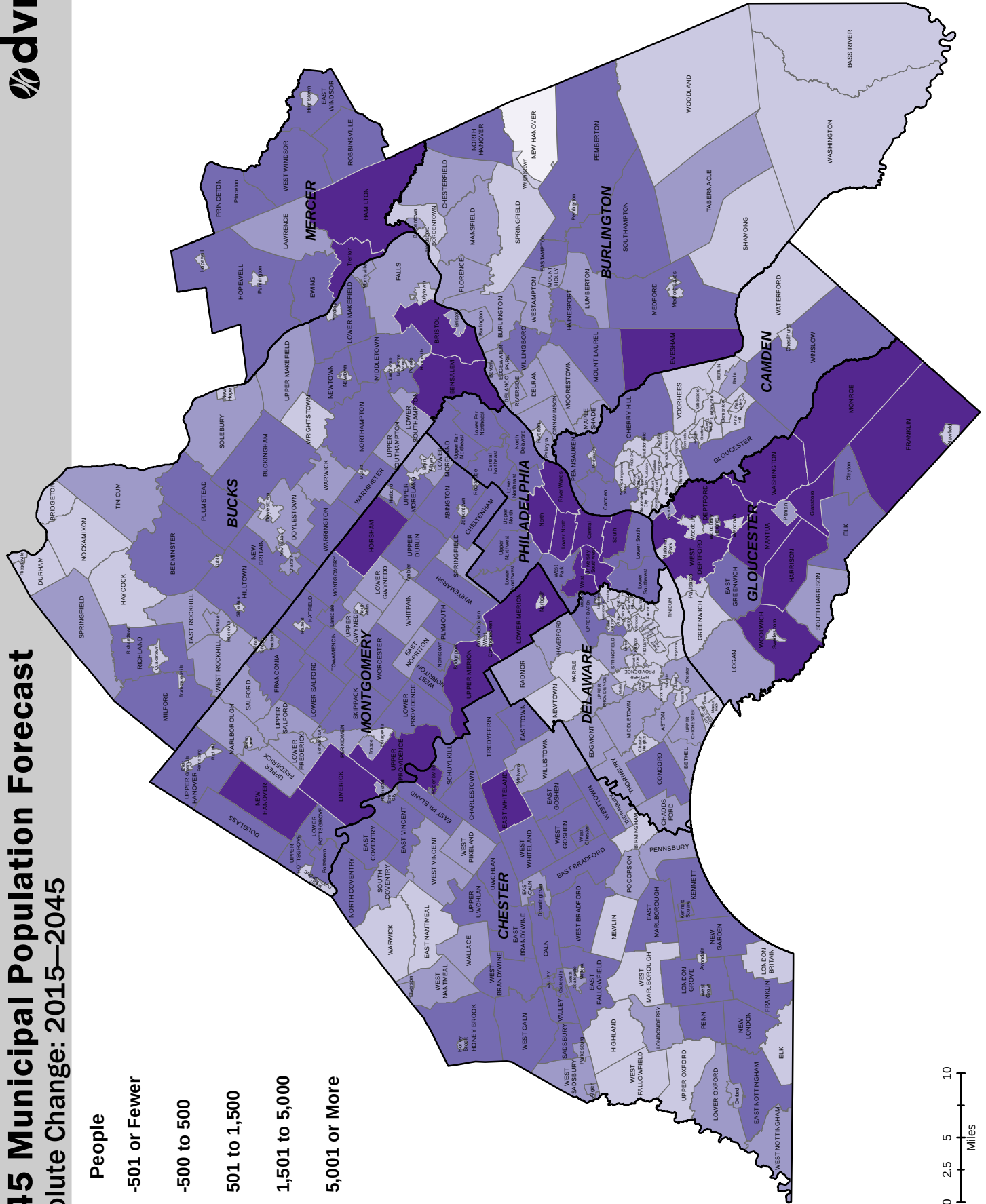
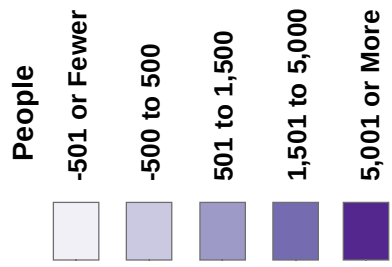


Figure 3:
2045 Municipal Population Forecast
Percentage Change: 2015–2045



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

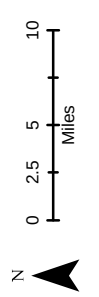
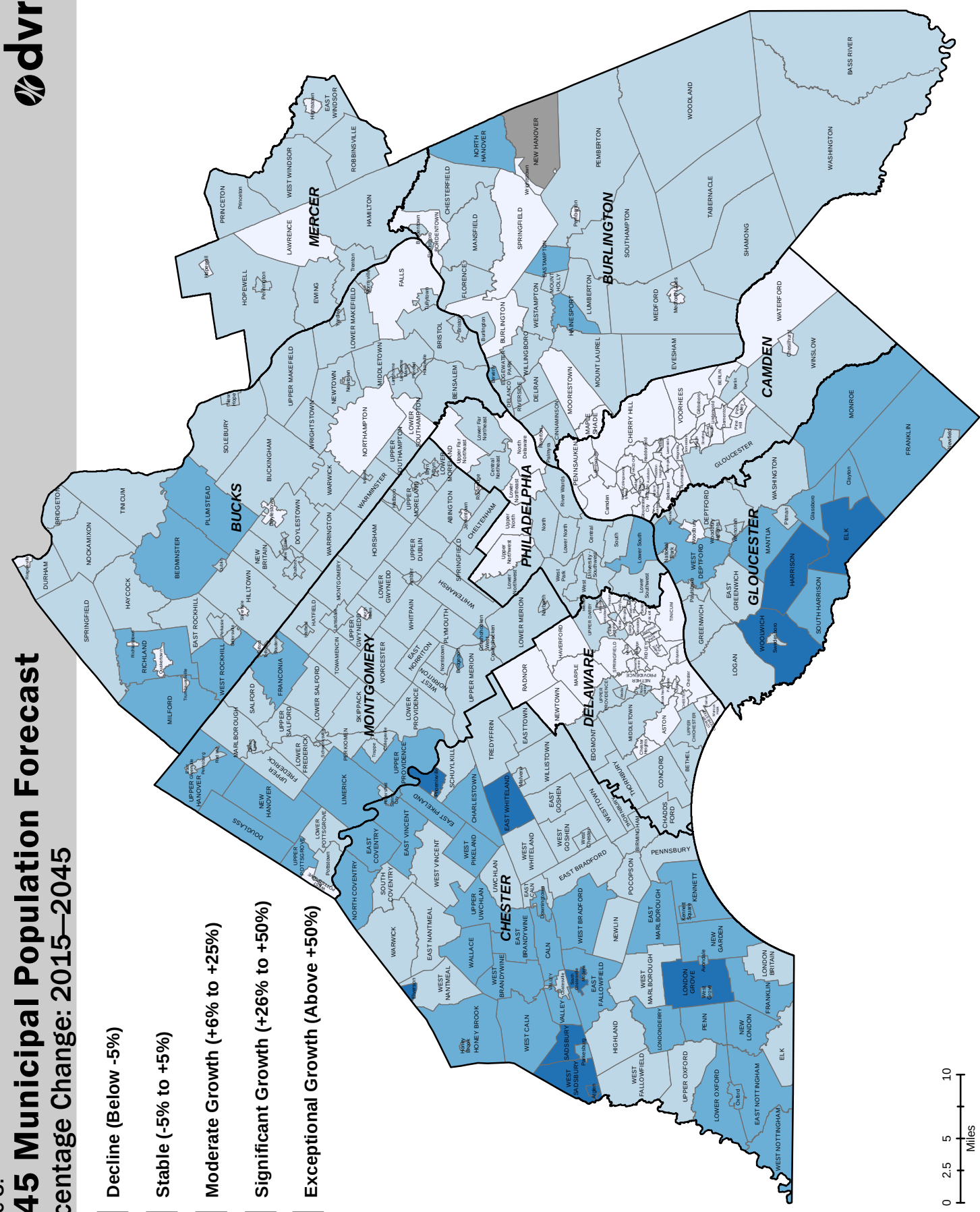
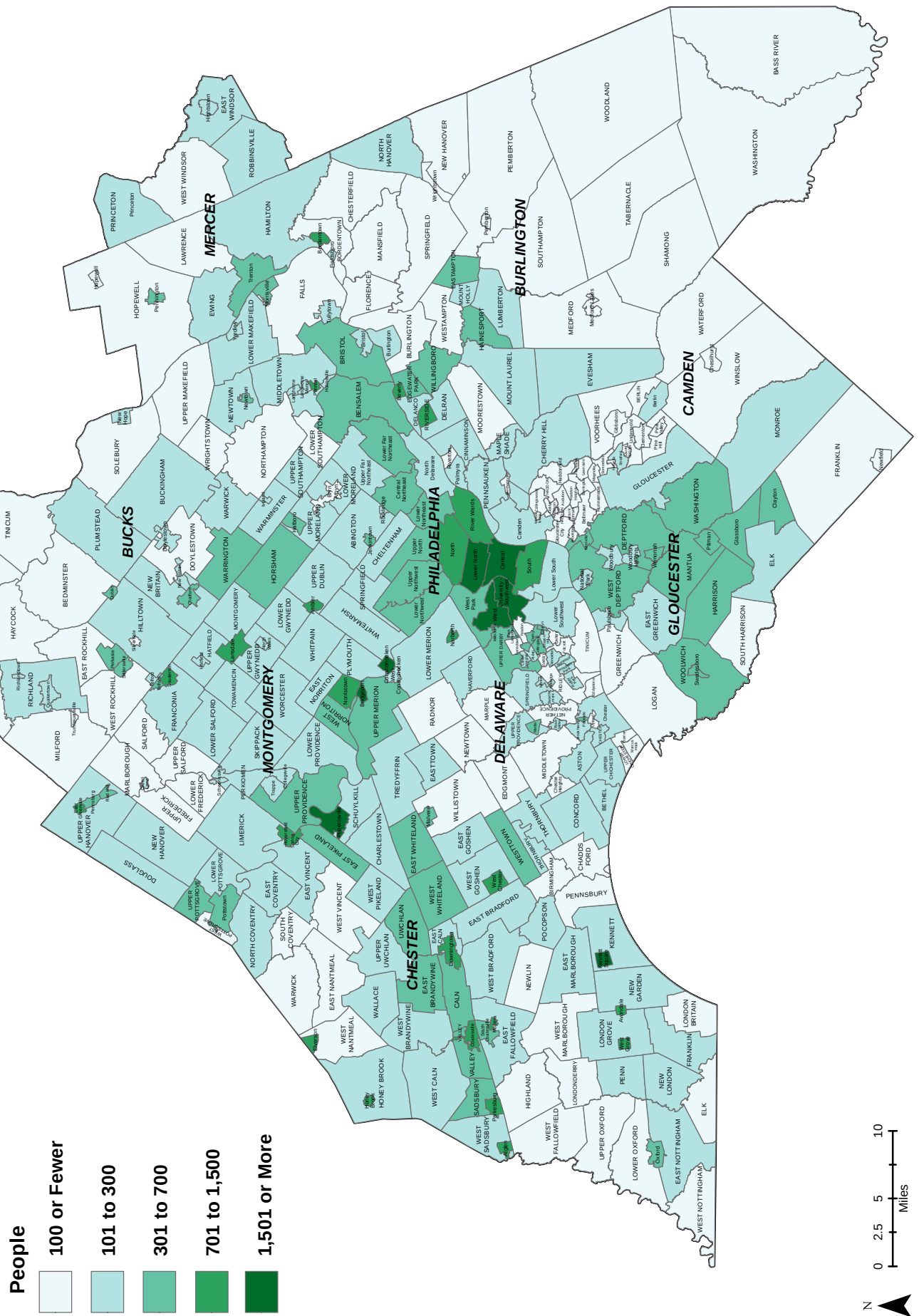




Figure 4:
2045 Municipal Population Forecast
Absolute Change per Square Mile by Municipality:
2015–2045



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 Census			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%
Penndel 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	2015 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%	
Cain 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	18,026	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 Census										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%	
Pennsburg 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%	

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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 Cain 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%	

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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%	
Chelttenham 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%	

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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%	
Skippack 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 Census										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%	

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	2000 Census	2010 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%	

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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.											

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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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.

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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, Pennadel, 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.

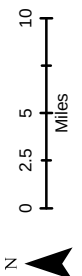


Figure 2:
2045 Municipal Employment Forecast
Absolute Change: 2015–2045

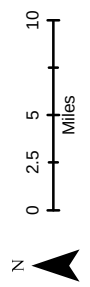
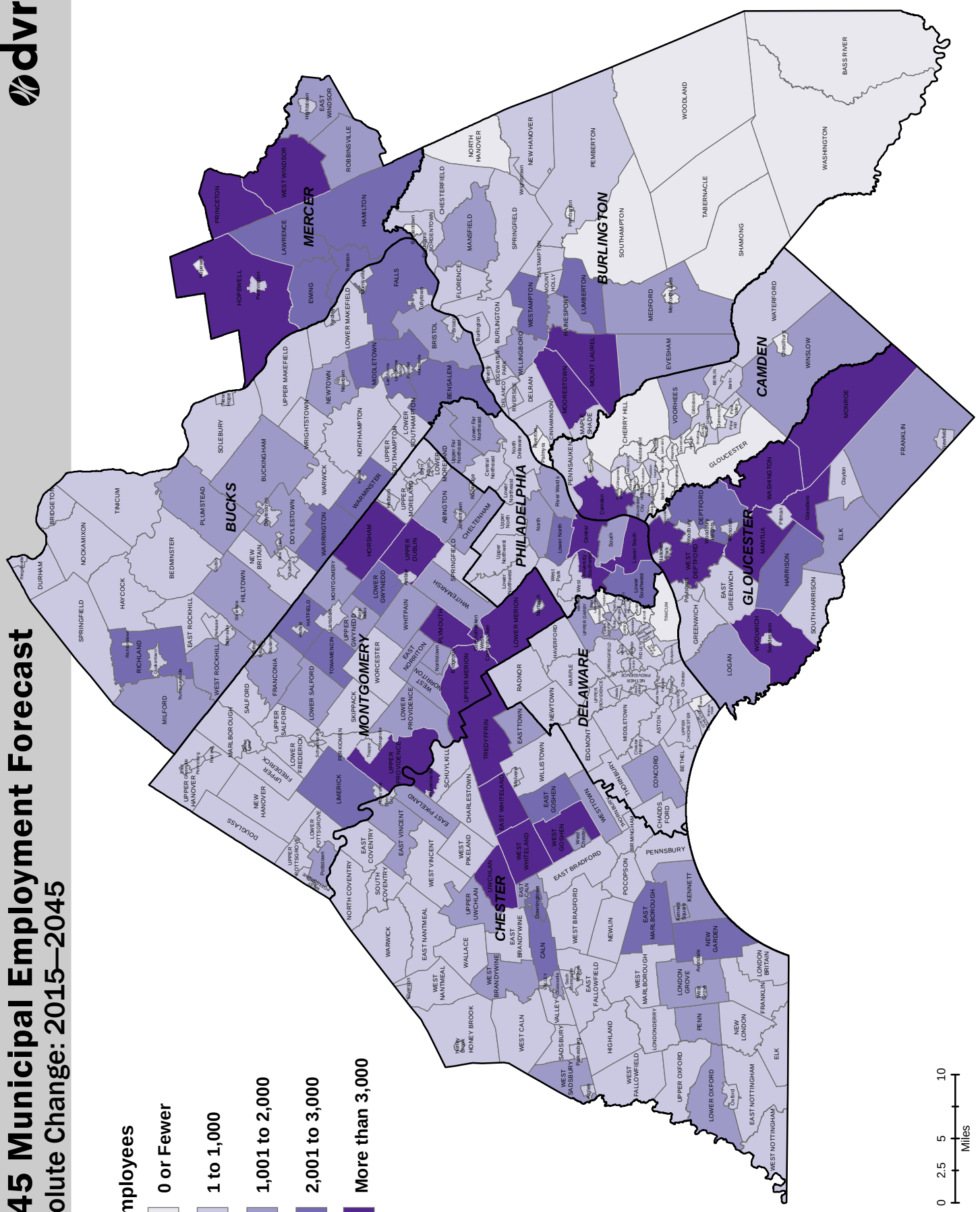
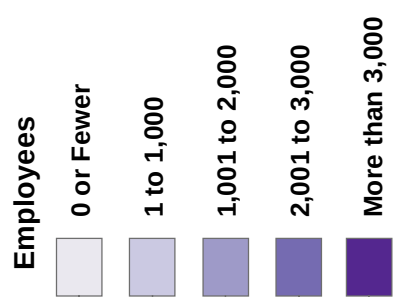


Figure 3:
2045 Municipal Employment Forecast
Percentage Change: 2015–2045



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

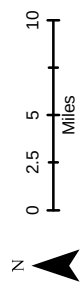
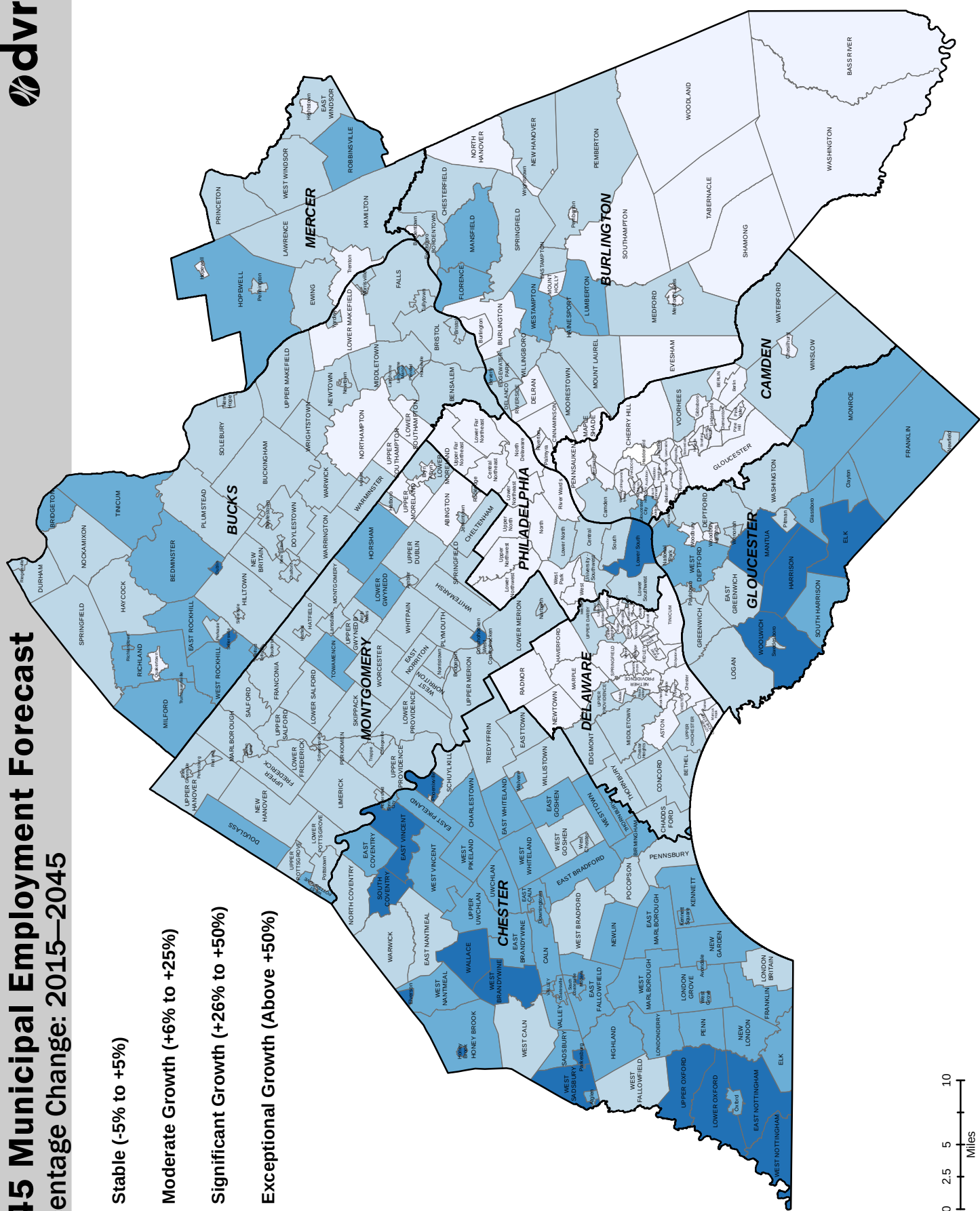
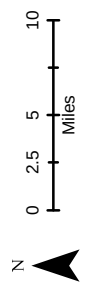
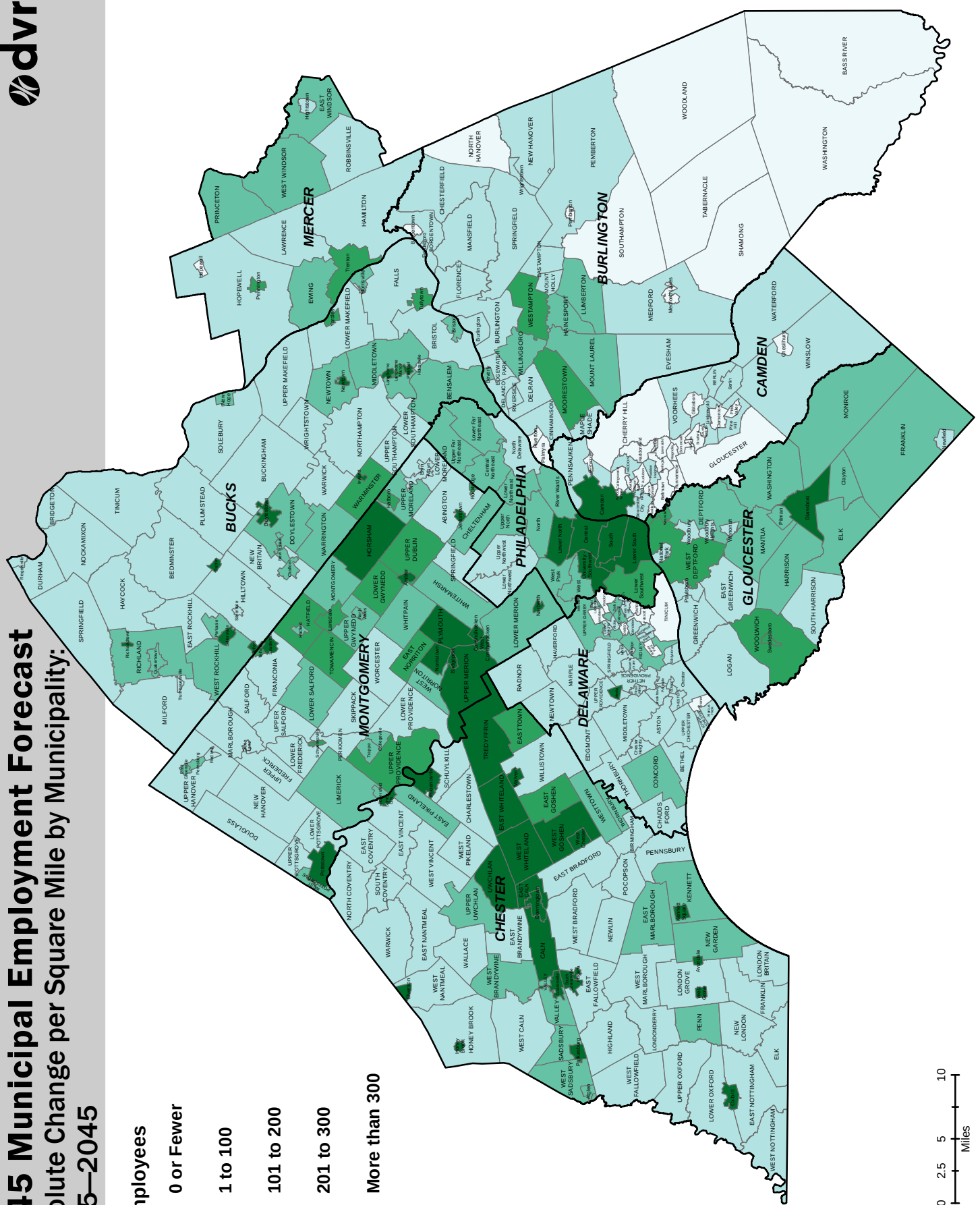
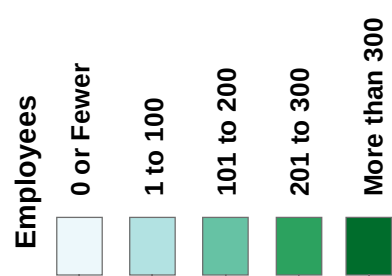




Figure 4:
2045 Municipal Employment Forecast
Absolute Change per Square Mile by Municipality:
2015–2045



Appendix A: Forecasted Employment by County and Municipality, 2015-2045

County / Municipality	2015		2020		2025		2030		2035		2040		2045		Absolute Change, 2015-2045	Percentage Change 2015-2045		
	Employment Estimate	Forecast	Employment Forecast	Forecast	Employment Forecast	Forecast	Employment Forecast	Forecast	Employment Forecast	Forecast	Employment Forecast	Forecast	Employment Forecast	Forecast				
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%									
Ivylnd 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	2020	2025	2030	2035	2040	2045	Absolute Change, 2015-2045	Percentage Change, 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
Northampton Township	14,669	14,801	14,953	15,113	15,233	15,310	15,299	630	4.3%
Pennel 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%
Cain 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		2020		2025		2030		2035		2040		2045		Absolute Change, 2015-2045	Percentage Change 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast			
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		2020		2025		2030		2035		2040		2045		Absolute Change, 2015–2045	Percentage Change 2015–2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast			
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%

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	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
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%
Douglas 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		2025		2030		2035		2040		2045		Absolute Change, 2015-2045	Percentage Change 2015-2045
		Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast				
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	2020	2025	2030	2035	2040	2045	Absolute Change, 2015-2045	Percentage Change 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
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	2020	2025	2030	2035	2040	2045	Absolute Change, 2015-2045	Percentage Change 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
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		2025		2030		2035		2040		2045		Absolute Change, 2015-2045	Percentage Change 2015-2045
		Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
Pemberton Borough	541	547	544	541	541	541	541	541	541	546	546	537	537	-4	-0.7%
Pemberton Township	7,035	7,204	7,420	7,616	7,616	7,616	7,616	7,725	7,725	7,816	7,816	7,970	7,970	935	13.3%
Riverside Township	1,726	1,759	1,787	1,811	1,811	1,811	1,811	1,827	1,827	1,847	1,847	1,856	1,856	130	7.5%
Riverton Borough	836	844	839	832	832	832	832	832	832	840	840	823	823	-13	-1.6%
Shamong Township	1,695	1,713	1,705	1,693	1,693	1,693	1,693	1,696	1,696	1,709	1,709	1,680	1,680	-15	-0.9%
Southampton Township	3,705	3,744	3,729	3,704	3,704	3,704	3,704	3,709	3,709	3,739	3,739	3,677	3,677	-28	-0.8%
Springfield Township	1,513	1,543	1,593	1,640	1,640	1,640	1,640	1,666	1,666	1,681	1,681	1,726	1,726	213	14.1%
Tabernacle Township	2,042	2,063	2,054	2,041	2,041	2,041	2,041	2,044	2,044	2,061	2,061	2,026	2,026	-16	-0.8%
Washington Township	245	247	247	245	245	245	245	246	246	247	247	243	243	-2	-0.8%
Westampton Township	7,379	7,776	8,490	9,169	9,169	9,169	9,169	9,495	9,495	9,682	9,682	10,357	10,357	2,978	40.4%
Willingboro Township	8,184	8,388	8,632	8,850	8,850	8,850	8,850	8,979	8,979	9,093	9,093	9,253	9,253	1,069	13.1%
Woodland Township	1,893	1,911	1,899	1,882	1,882	1,882	1,882	1,883	1,883	1,897	1,897	1,860	1,860	-33	-1.7%
Wrightstown Borough	2,810	2,828	2,852	2,875	2,875	2,875	2,875	2,881	2,881	2,890	2,890	2,905	2,905	95	3.4%
Camden County	263,582	265,169	266,753	268,359	268,359	268,359	268,359	269,750	269,750	270,892	270,892	271,869	271,869	8,287	3.1%
Audubon Borough	2,882	2,878	2,858	2,840	2,840	2,840	2,840	2,834	2,834	2,839	2,839	2,809	2,809	-73	-2.5%
Audubon Park Borough	122	122	121	120	120	120	120	120	120	120	120	119	119	-3	-2.5%
Barrington Borough	2,919	2,916	2,900	2,885	2,885	2,885	2,885	2,881	2,881	2,886	2,886	2,860	2,860	-59	-2.0%
Bellmawr Borough	4,855	4,861	4,856	4,853	4,853	4,853	4,853	4,855	4,855	4,867	4,867	4,848	4,848	-7	-0.1%
Berlin Borough	4,889	4,908	4,936	4,965	4,965	4,965	4,965	4,981	4,981	4,998	4,998	5,012	5,012	123	2.5%
Berlin Township	6,474	6,492	6,514	6,537	6,537	6,537	6,537	6,551	6,551	6,572	6,572	6,574	6,574	100	1.5%
Brooklawn Borough	979	980	979	978	978	978	978	978	978	981	981	976	976	-3	-0.3%
Camden City	41,786	42,644	43,370	44,057	44,057	44,057	44,057	44,850	44,850	45,205	45,205	45,992	45,992	4,206	10.1%
Cherry Hill Township	66,799	66,845	66,734	66,641	66,641	66,641	66,641	66,648	66,648	66,808	66,808	66,479	66,479	-320	-0.5%
Cheshilhurst Borough	268	267	264	262	262	262	262	261	261	261	261	257	257	-11	-4.1%
Clementon Borough	1,391	1,391	1,388	1,385	1,385	1,385	1,385	1,384	1,384	1,388	1,388	1,379	1,379	-12	-0.9%
Collingswood Borough	4,307	4,308	4,296	4,285	4,285	4,285	4,285	4,283	4,283	4,292	4,292	4,266	4,266	-41	-1.0%
Gibbsboro Borough	1,885	1,884	1,875	1,866	1,866	1,866	1,866	1,864	1,864	1,867	1,867	1,852	1,852	-33	-1.8%
Gloucester City	4,709	4,888	5,290	5,692	5,692	5,692	5,692	5,866	5,866	5,942	5,942	6,345	6,345	1,636	34.7%
Gloucester Township	19,959	19,964	19,911	19,863	19,863	19,863	19,863	19,857	19,857	19,901	19,901	19,782	19,782	-177	-0.9%
Haddon Township	4,577	4,590	4,606	4,624	4,624	4,624	4,624	4,634	4,634	4,649	4,649	4,651	4,651	74	1.6%
Haddonfield Borough	6,525	6,526	6,508	6,491	6,491	6,491	6,491	6,488	6,488	6,503	6,503	6,463	6,463	-62	-1.0%
Haddon Heights Borough	3,220	3,227	3,234	3,242	3,242	3,242	3,242	3,248	3,248	3,257	3,257	3,254	3,254	34	1.1%

County / Municipality	2015	2020	2025	2030	2035	2040	2045	Absolute Change, 2015-2045	Percentage Change 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
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	2020	2025	2030	2035	2040	2045	Absolute Change, 2015-2045	Percentage Change 2015-2045
	Employment Estimate	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast	Employment Forecast		
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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Upper Pottsgrove Township Wastewater System Assets

Total Debt	4728505	5338888	5933352
Purchase of Capital Assets	97860	469500	320901

	2019	2018	2017
Income (Loss) Before Transfers	879934	773821	539102
Interest paid	145775	163230	177935
Depreciation	0	0	0
Total Source	\$1,025,709	\$937,051	\$717,037

Income tax	0	0	0

Principal	610383	594464	564698
Interest paid	145775	163230	177935
Total Use	\$756,158	\$757,694	\$742,633

W/Out Trans

Debt Service Coverage	1.36	1.24	0.97
Pre-Tax Interest Coverage - Including AFC(3)(x)	7.04	5.74	4.03
Post-Tax Interest Coverage - Including AFC(3)(x)	7.04	5.74	4.03
GCF / Interest Coverage(4)(x)	7.04	5.74	4.03
GCF / Tot. Debt(7)(%)	18.61	14.49	9.09
GCF / Construction(6)(%)	899.18	164.82	168.00

Comparable Group

Debt Service Coverage - As Reported						
	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			
SIJ 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
SIJ 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
SIJ 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
SJW GROUP	63.653	73.164	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
SJW 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
SJW 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
SJW 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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Handy-Whitman											
Handy-Whitman			Handy-Whitman			Handy-Whitman			Handy-Whitman		
Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #	Line #
2			8			9			16		
23			34			38			39		
1968	1968	1968	0	64	81	69	49	77 na	66	101	68
1969	1969	1969	0	69	84	73	53	80 na	72	106	72
1970	1970	1970	0	75	89	79	75	84 na	79	108	80
1971	1971	1971	0	84	93	89	82	94 na	89	108	90
1972	1972	1972	0	92	96	96	85	98 na	96	106	96
1973	1973	1973	0	100	100	100	100	100 na	100	100	100
1974	1974	1974	0	117	122	118	140	110	115	93	123
1975	1975	1975	0	127	155	134	159	146	123	93	143
1976	1976	1976	0	130	174	144	171	154	157	98	157
1977	1977	1977	0	137	184	152	172	162	139	101	167
1978	1978	1978	0	148	192	162	173	173	145	105	182
1979	1979	1979	0	163	205	175	178	185	160	108	194
1980	1980	1980	0	181	190	191	191	202	175	122	207
1981	1981	1981	189	191	245	208	208	219	184	127	222
1982	1982	1982	0	198	260	227	210	231	198	128	245
1983	1983	1983	0	206	271	242	182	239	207	141	264
1984	1984	1984	0	218	277	251	184	244	270	148	270
1985	1985	1985	0	225	282	262	181	254	221	135	285
1986	1986	1986	0	233	284	269	184	255	226	135	296
1987	1987	1987	238	239	299	276	196	263	230	137	307
1988	1988	1988	0	251	311	286	220	280	245	140	320
1989	1989	1989	0	265	330	301	216	295	258	150	343
1990	1990	1990	0	271	349	313	229	301	262	159	363
1991	1991	1991	0	274	355	322	253	307	272	162	372
1992	1992	1992	270	281	368	332	261	332	283	196	348
1993	1993	1993	0	294	386	342	248	321	292	195	385
1994	1994	1994	0	308	428	348	246	327	300	175	391
1995	1995	1995	0	316	442	357	250	332	307	200	398
1996	1996	1996	309	321	450	367	251	339	321	207	418
1997	1997	1997	317	331	473	380	255	347	323	197	475
1998	1998	1998	318	337	489	391	268	355	330	197	493
1999	1999	1999	318	343	505	401	268	361	334	198	508
2000	2000	2000	326	362	530	413	270	377	348	205	526
2001	2001	2001	336	378	527	428	0	391	354	206	551
2002	2002	2002	344	389	529	443	0	404	360	207	565
2003	2003	2003	350	394	543	452	0	407	368	207	570
2004	2004	2004	276	421	572	466	308	432	388	207	585
2005	2005	2005	0	448	612	486	0	469	410	214	601
2006	2006	2006	0	466	624	504	0	499	454	248	643
2007	2007	2007	0	496	634	537	0	530	485	289	674
2008	2008	2008	465	538	663	586	676	588	514	373	706
2009	2009	2009	469	544	691	619	722	614	537	373	734
2010	2010	2010	0	560	704	637	759	624	555	376	728
2011	2011	2011	0	584	752	654	777	648	576	379	737
2012	2012	2012	503	604	788	680	798	687	598	379	762
2013	2013	2013	0	614	836	699	763	701	602	381	787
2014	2014	2014	0	631	896	725	735	731	608	386	846
2015	2015	2015	0	647	945	741	742	740	618	402	927
2016	2016	2016	0	661	1017	761	769	755	624	403	974
2017	2017	2017	0	675	1117	785	788	777	650	419	989
2018	2018	2018	0	704	1210	813	818	803	668	436	1027
2019	2019	2019	578	716	1332	847	836	830	706	457	1069
2020	2020	2020	584	719	1374	871	836	847	706	459	1101
2020	2020	2020	584	719	1374	871	836	847	706	459	1101
SPOT											

CPI for All Urban Consumers (CPI-U)

CPI for All Urban Consumers (CPI-U)

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	256.394	257.797	259.101	259.918					257.557	

	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	789,370	260,954
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	365,717,807	335,450,721
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	1,754,573	1,714,497
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	1,031,332	1,073,303
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	6,800,663	5,114,435
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	5,196,730	5,206,301
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	42,900,464	18,223,959
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	<u>87,018,815</u>	<u>80,234,359</u>
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	<u>24,800,463</u>	<u>21,720,302</u>
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	<u>3,359,333</u>	<u>3,123,702</u>
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	<u>10,741,548</u>	<u>10,866,267</u>
Total Operating Expenses	<u>38,901,344</u>	<u>35,710,271</u>
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	<u>8,792,057</u>	<u>8,316,967</u>
Total Expenses	<u>47,693,401</u>	<u>44,027,238</u>
Income From Operations Before Depreciation	39,325,414	36,207,121
Depreciation	<u>(15,983,865)</u>	<u>(15,105,344)</u>
Operating Income	<u>23,341,549</u>	<u>21,101,777</u>
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	<u>(385,545)</u>	<u>(1,174,018)</u>
Total Non-Operating Expense	<u>(5,936,650)</u>	<u>(7,548,664)</u>
Increase In Net Position, Before Contributed Capital	17,404,899	13,553,113
Contributed Capital	<u>-</u>	<u>192,833</u>
Increase in Net Position	17,404,899	13,745,946
Net Position - Beginning of Year	244,652,273	234,178,514
Cumulative Change	<u>-</u>	<u>(3,272,187)</u>
Net Position - Beginning of Year, Restated	<u>244,652,273</u>	<u>230,906,327</u>
Net Position - End of Year	<u>\$ 262,057,172</u>	<u>\$ 244,652,273</u>

See accompanying notes to the financial statements.

BUCKS COUNTY WATER AND SEWER AUTHORITY NOTES TO THE FINANCIAL STATEMENTS (CONTINUED) DECEMBER 31, 2018 AND 2017

NOTE 6: SEGMENT INFORMATION

As of and for the years ended December 31, 2018 and 2017 segment information is as follows:

Assets	2018			Totals
	Sewer System	Water System	Administrative Account	
Current Assets				
Cash and Investments	\$ 13,996,611	\$ 9,258,718	\$ 1,343,631	\$ 24,598,960
Accounts Receivable and Unbilled Revenue	6,114,899	18,137,594	(6,574,182)	17,678,311
Other	610,549	85,000	-	695,549
Non-Current Assets				
Restricted Assets	47,524,162	12,202,731	3,988,462	63,715,355
Capital Assets	293,945,954	145,484,365	5,383,895	444,814,214
Total Assets	362,192,175	185,168,408	4,141,806	551,502,389
Deferred Outflows of Resources				
Deferred Amount from Debt Refundings	3,503,369	6,462,562	-	9,965,931
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	10,726,542	8,265,853	-	18,992,395
Liabilities and Net Position				
Liabilities				
Current Liabilities	24,140,550	3,373,492	645,278	28,159,320
Non-Current Liabilities	156,519,961	91,561,281	3,496,528	251,577,770
Total Liabilities	180,660,511	94,934,773	4,141,806	279,737,090
Deferred Inflows of Resources				
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	2,514,268	4,766,654	-	7,280,922
Net Position				
Net Investment in Capital Assets	129,539,966	61,197,479	5,383,898	196,121,343
Restricted for Capital Activity	18,722,168	-	491,930	19,214,098
Restricted for Debt Service	28,801,994	6,333,246	-	35,135,240
Unrestricted	12,679,810	26,202,109	(5,875,828)	33,006,091
Total Net Position	\$ 189,743,938	\$ 93,732,834	\$ -	\$ 283,476,772

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	Administrative Account	Totals
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	294,731,969	147,991,214	5,191,938	447,915,121
Total Assets	374,302,191	186,458,868	4,270,454	565,031,513
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	1,562,388	390,597	-	1,952,985
Total Deferred Outflows of Resources	7,462,713	7,734,004	-	15,196,717
Liabilities and Net Position				
Liabilities				
Current Liabilities	22,888,994	3,518,492	809,871	27,217,357
Non-Current Liabilities	175,965,552	94,087,732	3,460,583	273,513,867
Total Liabilities	198,854,546	97,606,224	4,270,454	300,731,224
Deferred Inflows of Resources				
Changes in Assumptions	42,826	10,706	-	53,532
Proceeds from the Sale of Future Revenues	-	4,313,017	-	4,313,017
Total Deferred Inflows of Resources	42,826	4,323,723	-	4,366,549
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	23,341,650	14,430,327	(5,639,137)	32,132,840
Total Net Position	\$ 182,867,532	\$ 92,262,925	\$ -	\$ 275,130,457

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	70,869,632	17,959,242	88,828,874
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	20,862,709	5,611,587	26,474,296
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	3,524,738	-	3,524,738
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	9,097,141	2,380,400	11,477,541
Service Expense			
Total Operating Expense	33,484,588	7,991,987	41,476,575
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	12,679,594	1,492,820	14,172,414
Income from Operations before depreciation	24,705,450	8,474,435	33,179,885
Depreciation	(14,696,296)	(3,367,271)	(18,063,567)
Operating Income	10,009,154	5,107,164	15,116,318
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	(1,078,549)	(3,219,129)	(4,297,678)
Increase in Net Position, Before Contributed Capital	8,930,605	1,888,035	10,818,640
Contributed Capital	710,204	69,710	779,914
Net Position - Beginning of Year, as Previously Reported	182,867,532	92,262,925	275,130,457
Adjustment for GASB No. 75	(2,764,403)	(487,836)	(3,252,239)
Net Position - Beginning of Year, Restated	180,103,129	91,775,089	271,878,218
Net Position, End of Year	\$ 189,743,938	\$ 93,732,834	\$ 283,476,772

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	64,558,873	20,459,616	85,018,489
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	17,676,455	6,530,098	24,206,553
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	3,152,767	-	3,152,767
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	8,513,345	2,455,549	10,968,894
Total Operating Expense	29,342,567	8,985,647	38,328,214
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	8,386,336	1,372,107	9,758,443
Income from Operations before depreciation	26,829,970	10,101,862	36,931,832
Depreciation	(13,769,257)	(3,414,874)	(17,184,131)
Operating Income	13,060,713	6,686,988	19,747,701
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	(2,021,716)	(4,652,700)	(6,674,416)
Increase in Net Position	11,038,997	2,034,288	13,073,285
Net Position, Beginning of Year	171,828,535	90,228,637	262,057,172
Net Position, End of Year	\$ 182,867,532	\$ 92,262,925	\$ 275,130,457

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	Administrative Account	Totals
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			
	Sewer System	Water System	Administrative Account	Totals
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	\$ 1,529,900	\$ 33,485	\$ 4,854,334	\$ 6,417,719
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
	\$ 1,529,900	\$ 33,485	\$ 4,854,334	\$ 6,417,719
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			Liabilities, Deferred Inflows of Resources, and Net Position		
Assets:	2018	2017		2018	2017
Current assets:			Liabilities:		
Cash and cash equivalents	\$ 142,482,220	\$ 119,248,255	Current liabilities:		
Accounts receivable:			Accounts payable	\$ 7,180,579	\$ 7,167,120
Billed sewer revenue	16,544,587	17,185,654	Accrued liabilities:		
Unbilled sewer revenue	41,408,016	40,232,780	Compensated absences	4,539,483	4,689,828
Other	4,469	4,635	Salaries and wages	1,529,529	1,441,024
Other current assets	6,556,274	6,432,263	Accrued interest on bonds	2,745,875	2,260,535
			Reserve for litigation	2,371,900	2,371,900
			Pretreatment advance payments	24,375	71,600
Total current assets	206,995,566	183,103,587	Current maturities of sewer revenue bonds	26,630,000	25,395,000
Restricted/designated assets:			Total current liabilities	45,021,741	43,397,007
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	251,851,090	100,289,509			
Prepaid bond costs	7,187,959	6,472,479	Sewer revenue bonds - less current maturities	677,935,000	547,335,000
			Unamortized bond premium	55,857,500	48,952,220
Nondepreciable capital assets:					
Land	5,344,896	5,344,896	Net long-term debt	733,792,500	596,287,220
Construction in progress	59,836,813	38,371,565	Total long-term liabilities	753,211,530	618,908,651
			Total Liabilities	798,233,271	662,305,658
Total nondepreciable capital assets	65,181,709	43,716,461			
Depreciable capital assets -			Deferred Inflows of Resources:		
at cost, net of accumulated depreciation	557,161,609	564,883,734	Related to pensions	12,389,471	2,935,957
Total	622,343,318	608,600,195			
Net pension asset	2,705,577	-			
Total Assets	1,091,083,510	898,465,770			
Deferred Outflows of Resources:			Net Position:		
Related to pensions	17,633,917	21,247,515	Net investment in capital assets	120,849,236	95,281,689
Other post-retirement benefits	932,894	-	Unrestricted	185,255,671	167,264,184
Refunding adjustment	7,077,328	8,074,203			
			Total Net Position	306,104,907	262,545,873
Total Deferred Outflows of Resources	25,644,139	29,321,718			
Total Assets and Deferred Outflows of Resources	\$ 1,116,727,649	\$ 927,787,488	Total Liabilities, Deferred Inflows of Resources, and Net Position	\$ 1,116,727,649	\$ 927,787,488

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITYSTATEMENTS 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	<u>\$ 306,104,907</u>	<u>\$ 262,545,873</u>

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		Liabilities, Deferred Inflows of Resources, and Net Position	
	2017	2016	2016
Assets:			
Current assets:			
Cash and cash equivalents	\$ 119,248,255	\$ 91,684,772	\$ 8,192,941
Accounts receivable:			
Billed sewer revenue	17,185,654	14,582,462	4,543,017
Unbilled sewer revenue	40,232,780	35,405,033	1,315,045
Other	4,635	40,361	2,007,614
Other current assets	6,432,263	6,129,723	2,371,900
Total current assets	183,103,587	147,842,351	53,300
Restricted/designated assets:			
Cash and cash equivalents	100,289,509	92,275,291	43,397,007
Investments	-	31,442,508	5,173,881
Accrued interest receivable	-	156,762	10,265,284
Total restricted/designated assets	100,289,509	123,874,561	58,636,172
Prepaid bond costs	6,472,479	7,165,980	547,335,000
Nondepreciable capital assets:			
Land	5,344,896	5,344,896	48,952,220
Construction in progress	38,371,565	30,816,357	596,287,220
Total nondepreciable capital assets	43,716,461	36,161,253	618,908,651
Depreciable capital assets - at cost, net of accumulated depreciation	564,883,734	559,206,163	662,305,658
Total	608,600,195	595,367,416	2,935,957
Capital fees receivable	-	40,000	4,102,436
Total Assets	898,465,770	874,290,308	
Deferred Outflows of Resources:			
Related to pensions	21,247,515	19,454,240	95,281,689
Refunding adjustment	8,074,203	9,259,327	167,264,184
Total Deferred Outflows of Resources	29,321,718	28,713,567	262,545,873
Total Assets and Deferred Outflows of Resources	\$ 927,787,488	\$ 903,003,875	\$ 903,003,875
Liabilities:			
Current liabilities:			
Accounts payable			\$ 7,167,120
Accrued liabilities:			
Compensated absences			4,689,828
Salaries and wages			1,441,024
Accrued interest on bonds			2,260,535
Reserve for litigation			2,371,900
Pretreatment advance payments			71,600
Current maturities of sewer revenue bonds			25,395,000
Total current liabilities			43,397,007
Long-term liabilities:			
Other post-employment benefits			6,199,726
Net pension liability			16,421,705
Sewer revenue bonds - less current maturities			547,335,000
Unamortized bond premium			48,952,220
Net long-term debt			596,287,220
Total long-term liabilities			618,908,651
Total Liabilities			662,305,658
Deferred Inflows of Resources:			
Related to pensions			2,935,957
Net Position:			
Net investment in capital assets			95,281,689
Unrestricted			167,264,184
Total Net Position			262,545,873
Total Liabilities, Deferred Inflows of Resources, and Net Position	\$ 927,787,488	\$ 903,003,875	\$ 903,003,875

The notes to financial statements are an integral part of this statement.

ALLEGHENY COUNTY SANITARY AUTHORITYSTATEMENTS OF REVENUES, EXPENSES, AND
CHANGES IN NET POSITION

YEARS ENDED DECEMBER 31, 2017 AND 2016

	2017	2016
Operating Revenues	<u>\$ 170,182,173</u>	<u>\$ 151,390,618</u>
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	<u>3,778,272</u>	<u>3,571,943</u>
Total operating expenses before depreciation	<u>74,400,107</u>	<u>70,590,761</u>
Operating Income Before Depreciation	95,782,066	80,799,857
Depreciation	<u>22,426,718</u>	<u>21,271,326</u>
Operating Income	<u>73,355,348</u>	<u>59,528,531</u>
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	<u>(3,196,667)</u>	<u>(123,155)</u>
Total non-operating revenues (expenses)	<u>(24,338,091)</u>	<u>(24,291,547)</u>
Change in Net Position	49,017,257	35,236,984
Net Position:		
Beginning of year	<u>213,528,616</u>	<u>178,291,632</u>
End of year	<u>\$ 262,545,873</u>	<u>\$ 213,528,616</u>

The notes to financial statements are an integral part of this statement.

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
Total current assets	<u>43,537,808</u>

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	4,723,331
Investments - restricted under trust indentures	<u>37,547,376</u>
Total restricted assets	<u>42,270,707</u>

Noncurrent assets:

Capital assets, not being depreciated	12,360,288
Capital assets, net of accumulated depreciation of \$118,292,680	<u>136,420,246</u>
Total noncurrent assets	<u>148,780,534</u>

Total Assets

234,589,049

Deferred Outflows of Resources:

Deferred loss on refunding	8,778,954
Deferred outflows of resources for pensions	<u>757,778</u>
Total Deferred Outflows of Resources	<u>9,536,732</u>

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
Total current assets	<u>53,492,021</u>

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	28,128,910
Investments - restricted under trust indentures	19,919,838
Total restricted assets	<u>48,048,748</u>

Noncurrent assets:

Capital assets, not being depreciated	6,640,532
Capital assets, net of accumulated depreciation of \$123,593,986	149,741,828
Total noncurrent assets	<u>156,382,360</u>

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
Total Deferred Outflows of Resources	<u>8,754,811</u>

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

Total current assets	<u>63,514,228</u>

Restricted assets:

Cash and cash equivalents - restricted under trust indentures and guarantee agreement	19,430,292
Investments - restricted under trust indentures	<u>19,433,058</u>

Total restricted assets	<u>38,863,350</u>

Noncurrent assets:

Capital assets, not being depreciated	16,946,141
Capital assets, net of accumulated depreciation of \$128,988,007	160,175,578
Net pension asset	1,009,658

Total noncurrent assets	<u>178,131,377</u>

Total Assets	<u>280,508,955</u>

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	<u>651,522</u>

Total Deferred Outflows of Resources	<u>8,606,318</u>

Total Assets and Deferred Outflows of Resources

\$ 289,115,273

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	40,503,481

Operating Expenses:

Operating	14,206,161
Administrative	5,367,287
Depreciation	5,301,306
Total operating expenses	24,874,754

Operating Income

15,628,727

Non-Operating Revenues (Expenses):

Investment income	682,914
Intergovernmental revenue	471,421
Miscellaneous expense	(135,908)
Interest expense	(7,450,743)
Total non-operating revenues (expenses)	(6,432,316)

Change in Net Position

9,196,411

Net Position:

Beginning of year - restated	47,619,135
End of year	\$ 56,815,546

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.

	December 31,	
	2017	2016
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	8,416,857	10,208,760
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	4,514,917	4,771,006
Right to Use Asset		
Right to Use Asset Net	112,668,376	—
Capital Assets		
Total Plant and Properties	—	348,811,369
Less: Accumulated Depreciation	—	(126,269,611)
Net Plant and Properties	—	222,541,758
TOTAL ASSETS	125,600,150	237,521,524
DEFERRED OUTFLOWS OF RESOURCES		
Outflow Related to Pension	1,526,330	792,553
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	6,010,000	5,725,000
Total Current Liabilities	10,623,189	9,657,011
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	105,310	157,966
Total Long Term Liabilities	186,287,636	81,569,714
TOTAL LIABILITIES	196,910,825	91,226,725
DEFERRED INFLOWS OF RESOURCES		
Inflow Related to Pension	829,998	192,683
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	(71,882,553)	6,479,616
TOTAL NET POSITION	\$ (70,614,343)	\$ 146,894,669

See Accompanying Notes to Financial Statements

	December 31,	
	2018	2017
ASSETS		
Current Assets		
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	307,825	476,123
Total Current Assets	11,702,486	8,416,857
Restricted Assets		
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	1,097,730	1,081,611
Total Restricted Assets	4,452,981	4,514,917
Right to Use Asset		
Right to Use Asset Net	106,598,286	112,668,376
TOTAL ASSETS	122,753,753	125,600,150
DEFERRED OUTFLOWS OF RESOURCES		
Outflow Related to Pension	2,359,034	1,526,330
LIABILITIES		
Current Liabilities		
Accounts Payable	1,079,614	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	6,305,000	6,010,000
Total Current Liabilities	13,658,206	10,623,189
Long Term Liabilities		
City Lease Obligation	112,127,994	113,242,714
Loans Payable – PennVest	35,892,461	38,640,937
Bonds Payable	25,798,561	31,728,617
Net Pension Liability	4,271,068	2,570,058
Unearned Interest - Series of 1994	52,655	105,310
Total Long Term Liabilities	178,142,739	186,287,636
TOTAL LIABILITIES	191,800,945	196,910,825
DEFERRED INFLOWS OF RESOURCES		
Inflow Related to Pension	642,998	829,998
NET POSITION		
Restricted for:		
Construction	226,203	222,881
Debt Service	1,040,814	1,045,329
Unrestricted	(68,598,173)	(71,882,553)
TOTAL NET POSITION	\$ (67,331,156)	\$ (70,614,343)

See Accompanying Notes to Financial Statements

ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31,	
	<u>2017</u>	<u>2016</u>
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 28,033,026	\$ 27,234,701
Installations and Renewals Service Lines	119,509	116,080
Meter Sales, Shut-Offs, and Remotes	224,910	224,676
Timber Sales	40,197	142,007
Septic Hauler Fees	75,649	81,269
Fire Hydrant and Line Rentals	343,767	331,999
Service to Wastewater Division	1,057,455	1,097,406
Miscellaneous	322,114	414,937
Intermunicipal Service Reimbursements	1,409,183	1,346,227
Total Operating Revenues	<u>31,625,810</u>	<u>30,989,302</u>
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,117,738	5,106,472
Billing and Collection	709,035	750,662
Purification and Distribution/Disposal	5,001,575	5,078,445
Meter Division	482,163	476,819
Maintenance	3,823,793	3,918,953
Fringe Benefits and Insurance	3,706,216	3,838,891
Depreciation and Amortization	6,796,548	7,861,126
Total Operating Expenses- Functional and Departmental	<u>22,637,068</u>	<u>27,031,368</u>
Operating Income	<u>8,988,742</u>	<u>3,957,934</u>
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(223,701,014)	---
Investment Income	80,223	50,052
Interest Expense	(2,813,892)	(2,983,688)
Fees and Miscellaneous	(379)	(839)
Gain on Disposition of Fixed Assets	45,961	34,612
Contributed Capital	16,825	---
Amortization Bond Issue Costs	(125,478)	(126,251)
Total Nonoperating Revenues and (Expenses)	<u>(226,497,754)</u>	<u>(3,026,114)</u>
Net Income	<u>(217,509,012)</u>	<u>931,820</u>
<u>Net Position - January 1</u>	<u>146,894,669</u>	<u>145,962,849</u>
<u>Net Position - December 31</u>	<u>\$ (70,614,343)</u>	<u>\$ 146,894,669</u>

See Accompanying Notes to Financial Statements

Appendix A-5.2 (Gannett)
ALTOONA WATER AUTHORITY
STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN NET POSITION

	Year Ended December 31,	
	<u>2018</u>	<u>2017</u>
<u>Operating Revenues, Securing Revenue Bonds</u>		
Water/Sewer Rentals	\$ 30,794,341	\$ 28,033,026
Installations and Renewals Service Lines	139,503	119,509
Meter Sales, Shut-Offs, and Remotes	250,565	224,910
Timber Sales	116,337	40,197
Septic Hauler Fees	2,269,905	75,649
Fire Hydrant and Line Rentals	341,023	343,767
Service to Wastewater Division	1,047,022	1,057,455
Miscellaneous	421,392	322,114
Intermunicipal Service Reimbursements	<u>1,231,099</u>	<u>1,409,183</u>
Total Operating Revenues	<u>36,611,187</u>	<u>31,625,810</u>
<u>Operating Expenses - Functional and Departmental</u>		
Administration	2,180,781	2,117,738
Billing and Collection	681,880	709,035
Purification and Distribution/Disposal	5,060,425	5,001,575
Meter Division	505,784	482,163
Maintenance	3,956,167	3,823,793
Fringe Benefits and Insurance	4,133,886	3,706,216
Depreciation and Amortization	<u>6,070,090</u>	<u>6,796,548</u>
Total Operating Expenses- Functional and Departmental	<u>22,589,013</u>	<u>22,637,068</u>
Operating Income	<u>14,022,174</u>	<u>8,988,742</u>
<u>Nonoperating Revenues and (Expenses)</u>		
Capital Contribution to City of Altoona	(4,277,135)	(223,701,014)
Investment Income	170,111	80,223
Interest Expense	(6,783,092)	(2,813,892)
Fees and Miscellaneous	--	(379)
Gain on Disposition of Fixed Assets	105,075	45,961
Contributed Capital	201,042	16,825
Amortization Bond Issue Costs	<u>(154,988)</u>	<u>(125,478)</u>
Total Nonoperating Revenues and (Expenses)	<u>(10,738,987)</u>	<u>(226,497,754)</u>
Net Income/(Loss)	3,283,187	(217,509,012)
<u>Net Position - January 1</u>	<u>(70,614,343)</u>	<u>146,894,669</u>
<u>Net Position - December 31</u>	<u>\$ (67,331,156)</u>	<u>\$ (70,614,343)</u>

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	3,895,738	3,176,042	2,881,120
Total Operating Expenses	<u>\$ 23,767,518</u>	<u>\$ 22,075,632</u>	<u>\$ 22,678,509</u>

The \$1,691,886 increase in expenses is primarily the result of the increase in chemical supplies, salaries, payroll taxes and employee benefits, and bad debt expense.

Changes in Net Position - The following schedule presents a summary of changes in net position for the years ended December 31, 2018, 2017, and 2016:

	<u>2018</u>	<u>2017</u> (As Restated)	<u>2016</u> (As Restated)
Operating revenues	\$ 30,585,831	\$ 30,896,495	\$ 30,918,388
Operating expenses	<u>23,767,518</u>	<u>22,075,632</u>	<u>22,678,509</u>
Operating Income before Depreciation	6,818,313	8,820,863	8,239,879
Depreciation and amortization	<u>3,872,439</u>	<u>3,304,835</u>	<u>2,946,682</u>
Operating Income	2,945,874	5,516,028	5,293,197
Nonoperating revenues (expenses), net	<u>3,728,086</u>	<u>(2,461,546)</u>	<u>(3,468,433)</u>
Increase in Net Position	<u>\$ 6,673,960</u>	<u>\$ 3,054,482</u>	<u>\$ 1,824,764</u>

LANCASTER AREA SEWER AUTHORITY
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	<u>15,710,138</u>	<u>14,557,000</u>	<u>12,620,147</u>
Operating income	<u>5,139,694</u>	5,156,716	5,022,650
Non-operating revenue (expenses)	<u>(908,165)</u>	<u>(1,983,244)</u>	<u>(741,293)</u>
Income before capital contribution	4,231,529	3,173,472	4,281,357
Capital contribution	<u>324,142</u>	<u>551,477</u>	<u>638,017</u>
Change in net position	4,555,671	3,724,949	4,919,374
Net position, beginning of year	<u>76,825,172</u>	<u>73,100,223</u>	<u>68,180,849</u>
Net position, end of year	<u>\$ 81,380,843</u>	<u>\$ 76,825,172</u>	<u>\$ 73,100,223</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 2017 Operating Revenue and Operating Expenses, respectively.

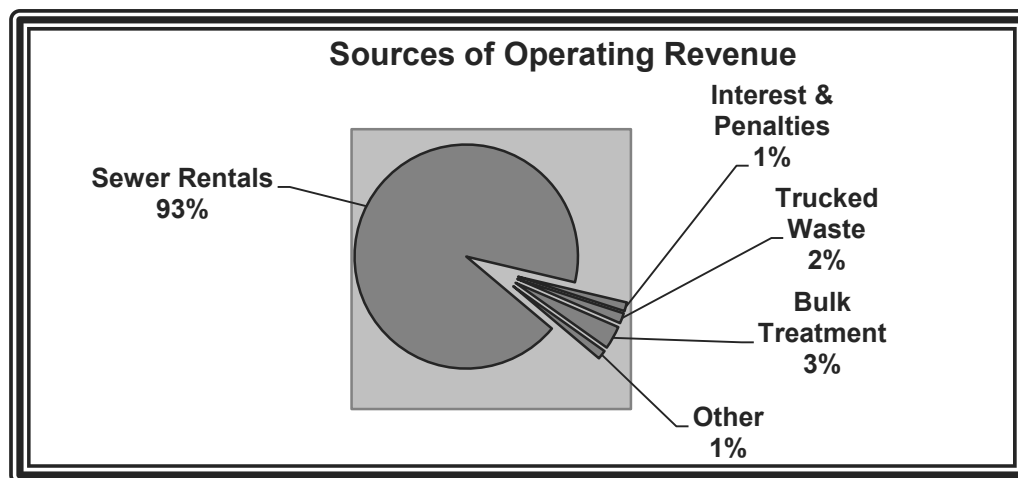


Table 3 - Sources of Operating Revenue - Fiscal Year 2017

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	5,520,628	5,139,694	5,156,716
Non-operating revenue (expenses)	2,251,417	(908,165)	(1,983,244)
Income before capital contribution	7,772,045	4,231,529	3,173,472
Capital contribution	1,224,093	324,142	551,477
Change in net position	8,996,138	4,555,671	3,724,949
Net position, beginning of year	81,380,843	76,825,172	73,100,223
Net position, end of year	\$ 90,376,981	\$ 81,380,843	\$ 76,825,172

**Table 2 - Condensed Statement of Revenues, Expenses,
and Changes in Net Position**

Table 3 and Table 4 below show a breakdown of fiscal year 2018 Operating Revenue and Operating Expenses, respectively.

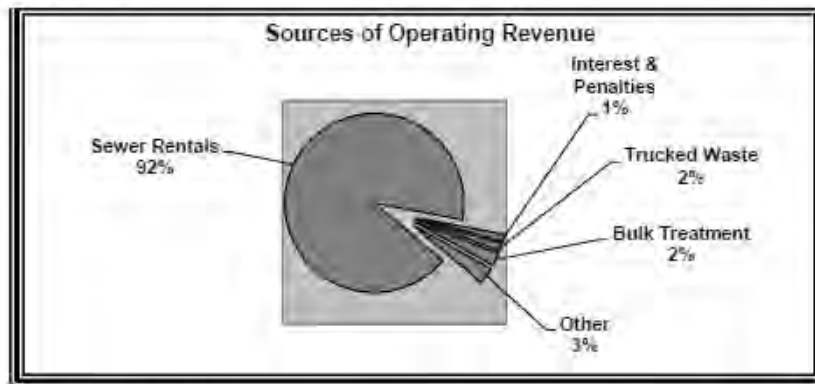


Table 3 : Sources of Operating Revenue - Fiscal Year 2018

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis

Financial Analysis (Continued)

Table 2 below shows a Condensed Statement of Revenue, Expenses, and Changes in Net Position for the years ended March 31, 2019, 2018, and 2017. The change in net position decreased from \$ 9.0 million in fiscal year 2018 to \$ 6.1 million in fiscal year 2019. Operating income increased \$ 564,000 over last year while non-operating revenue (expense) decreased \$ 3.1 million over fiscal year 2018.

	2019	2018	2017
Operating revenue	\$ 22,974,614	\$ 21,499,186	\$ 20,849,882
Operating expenses	16,889,502	15,978,558	15,710,138
Operating income	6,085,112	5,520,628	5,139,694
Non-operating revenue (expenses)	(825,158)	2,251,417	(900,165)
Income before capital contribution	5,259,954	7,772,045	4,231,529
Capital contribution	840,017	1,224,093	324,142
Change in net position	6,099,971	8,996,138	4,555,671
Net position, beginning of year	90,376,981	81,380,843	76,825,172
Net position, end of year	\$ 96,476,952	\$ 90,376,981	\$ 81,380,843

**Table 2 - Condensed Statement of Revenues, Expenses,
and Changes in Net Position**

Table 3 and Table 4 below show a breakdown of fiscal year 2019 Operating Revenue and Operating Expenses, respectively.

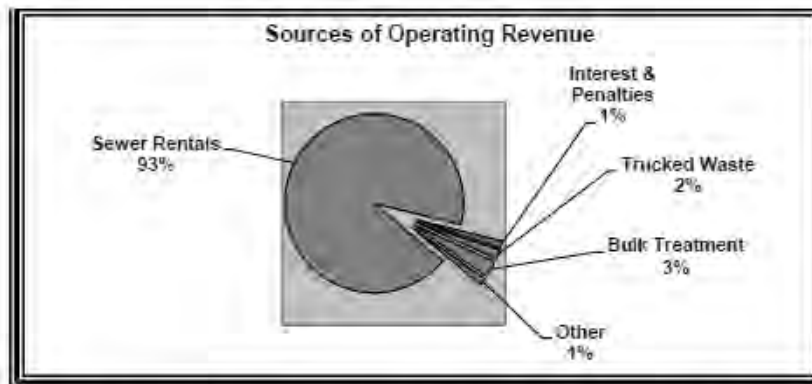


Table 3 - Sources of Operating Revenue - Fiscal Year 2019

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis
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><u>\$ 119,707,705</u></u>	 <u><u>\$ 105,853,576</u></u>	 <u><u>\$ 97,965,766</u></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	99,088,012
Pump stations	38,845,592	33,042,528	32,887,101
Treatment plant	38,193,779	38,039,056	37,266,392
Buildings and improvements	3,640,150	3,640,150	3,199,420
Technology	1,424,091	1,353,402	1,295,369
Vehicles	2,291,170	1,760,826	1,706,256
Equipment	830,745	830,745	830,745
	<u>229,040,114</u>	<u>202,918,885</u>	<u>104,696,881</u>
Total accumulated depreciation	<u>(87,820,739)</u>	<u>(83,211,180)</u>	<u>(78,843,305)</u>
Total Capital Assets	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>	<u>\$ 105,853,576</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2018, 2017, and 2016**

LANCASTER AREA SEWER AUTHORITY
Management's Discussion and Analysis

Budgetary Highlights (Continued)

Revenue

In fiscal year 2019, actual revenue exceeded budgeted revenue by \$ 820,000 resulting from sewer rental, investment, and other income exceeding budget. These were partially offset by below-budget revenue in capacity reservation and tapping fee income.

Expenses

Expenses, excluding depreciation, were \$ 1.5 million over budget. Above average rainfall generated a 40% increase in flow through the collection system and treatment plant for the year. Consequently, electricity and chemical costs, sewer treatment costs from the City of Lancaster and the Borough of Columbia, and nutrient credit purchase costs were \$ 1.4 million over budget. When combined with extensive rehabilitation of the centrifuge at the treatment plant, the operating expenses, excluding depreciation, exceeded budget by \$ 1.5 million. Above-budget expense for depreciation of \$ 308,000 accounts for the balance of the negative budget variance in operating expenses.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets

The Authority's capital assets, net of accumulated depreciation, as of March 31, 2019 were \$ 142.3 million. The Authority capitalizes all assets costing more than \$ 20,000 whose expected life exceeds 12 months. A condensed statement of capital assets for fiscal years 2019, 2018, and 2017 is presented in Table 6 below. Additional information on the Authority's capital assets can be found in Note 5 of the financial statements.

	2019	2018	2017
Construction in progress	\$ 37,011,554	\$ 41,124,606	\$ 24,247,571
Land	95,181	95,181	95,181
Sewer System			
Lines	110,392,727	102,594,800	99,909,426
Pump stations	40,897,235	38,845,592	33,042,520
Treatment plant	38,262,279	38,193,779	38,039,056
Buildings and improvements	3,640,150	3,640,150	3,640,150
Technology	1,424,091	1,424,091	1,353,402
Vehicles	2,295,745	2,291,170	1,760,826
Equipment	977,181	830,745	830,745
	<u>234,996,143</u>	<u>229,040,114</u>	<u>202,918,885</u>
Total accumulated depreciation	<u>(92,678,068)</u>	<u>(87,820,739)</u>	<u>(83,211,180)</u>
Total Capital Assets	<u>\$ 142,318,075</u>	<u>\$ 141,219,375</u>	<u>\$ 119,707,705</u>

**Table 6 - Condensed Statement of Capital Assets -
Fiscal Years 2019, 2018, and 2017**

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position

March 31, 2019 and 2018

	<u>2019</u>	<u>Restated 2018</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 27,812,712	\$ 19,209,356
Accounts receivable, customers (net of allowance for doubtful accounts of \$473,827 in 2019 and \$470,533 in 2018)	6,547,940	6,298,373
Unbilled water and sewer service	9,852,958	9,851,714
Surcharges receivable, current portion	350,000	350,000
Other receivables	498,933	1,070,190
Inventory - material and supplies	2,868,304	2,515,551
Prepaid expenses	352,547	200,121
Total Current Assets	48,283,394	39,495,305
Property, Plant and Equipment		
Property, plant and equipment (Note 2)	767,648,700	711,563,565
Less: accumulated depreciation	(213,403,548)	(201,495,896)
Property, Plant and Equipment, Net	554,245,152	510,067,669
Non-Current Assets		
Surcharges receivable, net of current portion and allowance for doubtful accounts of \$200,000 in 2019 and 2018	1,509,942	1,653,673
Prepaid bond insurance	913,328	958,845
Restricted assets:		
Special funds held by trustee (Note 4 & 5)	207,837,151	234,717,525
Restricted cash held by the Authority (Note 6)	16,415,126	19,597,310
Total Non-Current Assets	226,675,547	256,927,353
Total Assets	829,204,093	806,490,327
Deferred Outflows of Resources		
Net difference between projected and actual earnings on pension plan investments	30,552	-
Changes in assumptions related to pensions	57,541	77,283
Difference between expected and actual experience related to pensions	602,541	825,024
Contribution to pension plan subsequent to measurement date	150,548	56,041
Difference between expected and actual experience related to OPEB	24,517	-
Changes in assumptions related to OPEB	1,501,026	-
Deferred losses on bond refundings, net of amortization (Note 8)	4,283,283	4,612,214
Total Deferred Outflows of Resources	6,650,008	5,570,562

(continued)

See accompanying notes to the financial statements.

MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY

Statements of Net Position

March 31, 2018 and 2017

	<u>2018</u>	<u>2017</u>
Current Assets		
Cash and cash equivalents, unrestricted (Note 3)	\$ 19,209,356	\$ 15,067,865
Accounts receivable, customers (net of allowance for doubtful accounts of \$470,533 in 2018 and \$458,506 in 2017)	6,298,373	5,597,012
Unbilled water and sewer service	9,851,714	9,777,602
Surcharges receivable, current portion	350,000	350,000
Other receivables	1,070,190	5,178,590
Inventory - material and supplies	2,515,551	2,289,998
Prepaid expenses	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.

Appendix A-5.2 (Gannett)

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	<u>21,532,860</u>	<u>20,596,637</u>
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><u>\$ 158,419,154</u></u>	<u><u>\$ 135,957,658</u></u>

See accompanying notes to the financial statements.

Appendix A-5.2 (Gannett)
MUNICIPAL AUTHORITY OF WESTMORELAND COUNTY
Statements of Revenues, Expenses and Changes in Net Position
Fiscal Years Ended March 31, 2019 and 2018

	2019	Restated 2018
Operating Revenues		
Water	\$ 86,597,707	\$ 81,638,410
Wastewater	15,286,438	14,901,786
Other operating revenues	5,450,849	3,527,303
Total Operating Revenues	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	1,300,000	1,225,000
Total Operating Expenses	80,255,298	78,534,639
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	(403,367)	(336,175)
Total Non-Operating Expenses	(16,414,545)	(12,471,691)
Income Before Capital Contributions	10,665,151	9,061,169
Capital Contributions	6,523,749	13,400,327
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	-	(30,430,294)
Total Net Position, End of Fiscal Year	\$ 145,177,760	\$ 127,988,860

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%
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%)
LIABILITIES AND NET ASSETS				
Current liabilities	\$ 7,893,978	\$ 7,918,630	(\$ 24,652)	(4.9%)
Long-term debt, net of unaccreted 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)

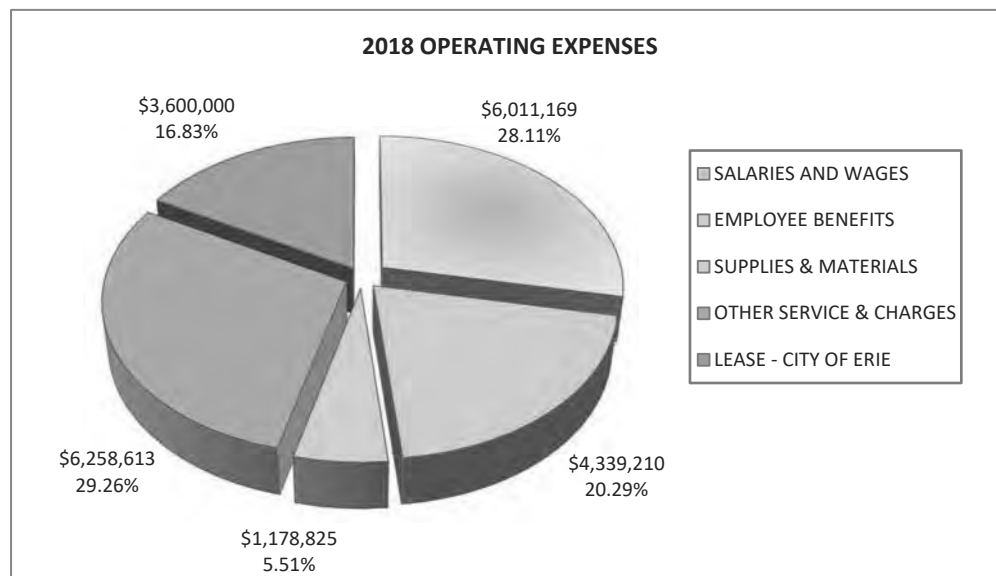
December 31, 2018 and 2017

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%)



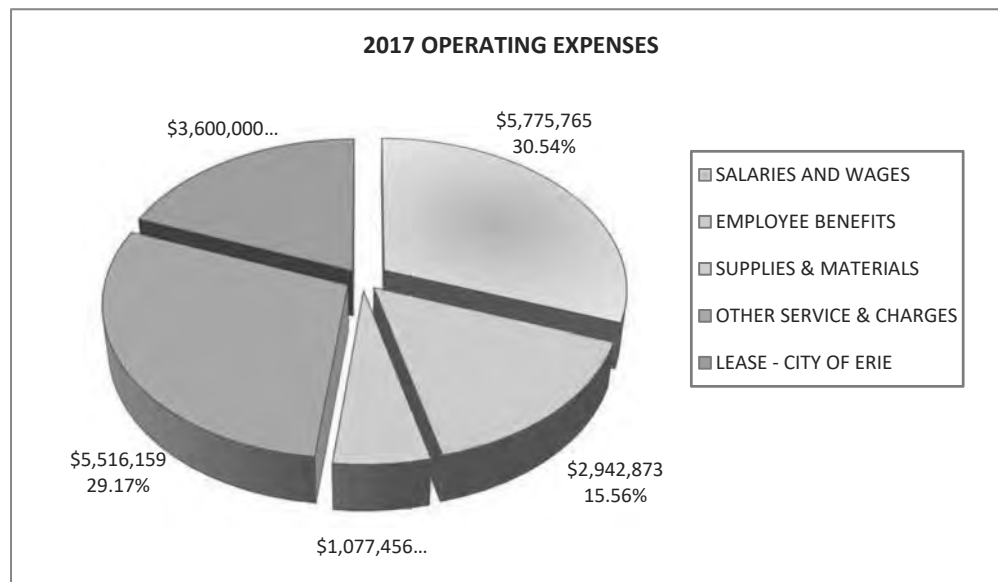
Erie City Water Authority
(aka Erie Water Works)

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

	<u>December 31,</u>	
	<u>2017</u>	<u>2016</u>
<u>Current Assets</u>		
Cash and cash equivalents	\$ 12,277,333	\$ 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	<u>24,092,784</u>	<u>28,189,707</u>
<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	<u>272,634,571</u>	<u>264,773,275</u>
<u>Restricted Assets</u>		
Cash and cash equivalents	7,549,260	11,607,560
Total Restricted Assets	<u>7,549,260</u>	<u>11,607,560</u>
Total Assets	<u>304,276,615</u>	<u>304,570,542</u>
<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	<u>1,479,458</u>	<u>1,446,144</u>
<u>Total Assets and Deferred Outflows of Resources</u>	<u>\$ 305,756,073</u>	<u>\$ 306,016,686</u>

See accompanying notes to financial statements.

Chester Water Authority
Statements of Net Position
December 31, 2018 and 2017

Assets and Deferred Outflows of Resources

	<u>December 31,</u>	
	<u>2018</u>	<u>2017</u>
<u>Current Assets</u>		
Cash and cash equivalents	\$ 9,680,971	\$ 12,277,333
Investments	1,207,385	1,185,056
Accounts receivable, net of allowance for doubtful accounts of \$300,000 in both 2018 and 2017	4,215,519	4,018,123
Unbilled revenue	4,143,347	4,100,936
Materials and supplies	2,894,794	2,438,785
Other current assets	44,734	72,551
Total Current Assets	<u>22,186,750</u>	<u>24,092,784</u>
<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	<u>277,881,505</u>	<u>272,634,571</u>
<u>Restricted Assets</u>		
Cash and cash equivalents	7,629,992	7,549,260
Total Restricted Assets	<u>7,629,992</u>	<u>7,549,260</u>
Total Assets	<u>307,698,247</u>	<u>304,276,615</u>
<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	<u>5,066,541</u>	<u>1,479,458</u>
<u>Total Assets and Deferred Outflows of Resources</u>	<u>\$ 312,764,788</u>	<u>\$ 305,756,073</u>

See accompanying notes to financial statements.

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Chester Water Authority
Statements of Revenues, Expenses, and Changes In Net Position
For The Years Ended December 31, 2017 and 2016

	<u>December 31,</u>	
	<u>2017</u>	<u>2016</u>
<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	<u>42,291,466</u>	<u>42,658,480</u>
<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	<u>39,496,243</u>	<u>38,889,634</u>
<u>Operating Income</u>	<u>2,795,223</u>	<u>3,768,846</u>
<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)	<u>(1,784,535)</u>	<u>(1,968,008)</u>
<u>Income Before Contributions</u>	<u>1,010,688</u>	<u>1,800,838</u>
<u>Capital Contributions</u>	<u>2,699,498</u>	<u>1,623,074</u>
<u>Change In Net Position</u>	<u>3,710,186</u>	<u>3,423,912</u>
<u>Net Position—Beginning of year</u>	<u>229,828,321</u>	<u>226,404,409</u>
<u>Net Position—End of year</u>	<u>\$ 233,538,507</u>	<u>\$ 229,828,321</u>

See accompanying notes to financial statements.

Chester Water Authority
Statements of Revenues, Expenses, and Changes in Net Position
For The Years Ended December 31, 2018 and 2017

	December 31,	
	<u>2018</u>	<u>2017</u>
<u>Operating Revenues</u>		
Residential	\$ 16,270,379	\$ 16,471,074
Commercial	7,006,726	5,885,341
Industrial	8,262,780	7,414,215
Fire protection	3,902,103	4,001,045
Capacity charges, flat and late fee revenues	1,134,612	1,360,899
Sales to other water utilities	6,749,553	7,158,892
Total Operating Revenues	<u>43,326,153</u>	<u>42,291,466</u>
<u>Operating Expenses</u>		
Purification and Pumping	7,479,180	7,326,031
Distribution	7,989,652	7,159,659
Administrative	12,605,483	11,664,820
Finance/customer service, billing and collections	4,189,300	3,824,583
Depreciation	9,575,108	9,521,150
Total Operating Expenses	<u>41,838,723</u>	<u>39,496,243</u>
<u>Operating Income</u>	<u>1,487,430</u>	<u>2,795,223</u>
<u>Non-Operating Revenues (Expenses)</u>		
Net investment income	131,632	146,144
Interest expense	(2,776,729)	(2,681,713)
Other nonoperating revenues	514,231	982,798
Amortization of bond discounts and debt issuance costs	401,140	250,136
Gain (loss) on disposal of property and equipment	17,882	(481,900)
Total Non-Operating Revenues/(Expenses)	<u>(1,711,844)</u>	<u>(1,784,535)</u>
<u>(Loss) Income Before Contributions</u>	<u>(224,414)</u>	<u>1,010,688</u>
<u>Capital Contributions</u>	<u>5,652,845</u>	<u>2,699,498</u>
<u>Change in Net Position</u>	<u>5,428,431</u>	<u>3,710,186</u>
<u>Net Position—Beginning of year, as previously reported</u>	<u>233,538,507</u>	<u>229,828,321</u>
<u>Cumulative effect of prior period adjustment for adoption of GASB 75 - Net OPEB Liability</u>	<u>(4,932,637)</u>	<u>-</u>
<u>Net Position - Beginning of year, restated</u>	<u>228,605,870</u>	<u>229,828,321</u>
<u>Net Position—End of year</u>	<u>\$ 234,034,301</u>	<u>\$ 233,538,507</u>

See accompanying notes to financial statements.

PITTSBURGH WATER AND SEWER AUTHORITY

STATEMENTS OF NET POSITION

(Dollars expressed in thousands)

DECEMBER 31, 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.

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.

Borough of Pottstown

Table Lists - Customer EDU Count Sewer UP

Page: 1
Apr 02, 2019 10:29AM

Report Criteria:

Service.Service number = 10,16
Group Code.Group code = "A","B","C"
Customer.Final bill date = {IS NULL}
Billing.Temporary disconnect date = {IS NULL}
Billing.Final disconnect date = {IS NULL}

Customer Number	Customer Name	Service Address	Customer Type	Units
10				
UP Commercial				
18011257.01	POTTSTOWN 1257 INC	1257 N CHARLOTTE ST	UP Commercial	2
18011277.01	CONIGLIARO, VITO	1277 N CHARLOTTE ST	UP Commercial	1
18011293.01	BURGER KING #4651	1293 N CHARLOTTE ST	UP Commercial	8
24010861.02	DCM PROPERTY INVESTMENTS LLC	861 WILLOW ST	UP Commercial	1
24010929.01	CREATIVE HEALTH SERVICES	929 WILLOW ST	UP Commercial	4
25100799.01	FULTON FINANCIAL CORP	799 STATE ST - FULTON BANK	UP Commercial	1
41020175.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	RENT-A-CENTER #50	UP Commercial	2
41020177.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	DOLLAR ADVANTAGE	UP Commercial	2
41020178.02	POTTSTOWN PLAZA ASSOC C/O COTSWOLD GRO	RADIO SHACK #60	UP Commercial	2
41021066.01	GEORGE EVANS	1066 FARMINGTON AVE	UP Commercial	1
41021173.01	SHUKOWITSH, STEVEN & JESSICA	1173 FARMINGTON AVE	UP Commercial	1
41021189.01	ARTIM, ROBERT	1189 FARMINGTON AVE	UP Commercial	1
41021320.01	STROGUS, BARRY	1320 FARMINGTON AVE	UP Commercial	1
41021346.01	AMERICAN METAL FINISHERS	1346 FARMINGTON AVE	UP Commercial	1
41021359.02	BOWERS, TODD	1359 FARMINGTON AVE	UP Commercial	1
41021391.01	MCGINNIS, DENNIS	1361 FARMINGTON AVE	UP Commercial	1
41021393.01	SDM INVESTMENTS LLC	1393 FARMINGTON AVE	UP Commercial	1
41021403.01	ARTIMS AUTOMOTIVE INC	1403 FARMINGTON AVE	UP Commercial	2
41021446.02	1446 FARMINGTON AVE LLC	1446 FARMINGTON AVE	UP Commercial	4
41021507.01	RICHARDSON, GLORIA MAUGER & THOMAS	1507 FARMINGTON AVE	UP Commercial	1
41021525.01	YOUNG, SHANE & KATHY	1525 FARMINGTON AVE	UP Commercial	1
41021587.01	BURGYONE, BARRY	1587 FARMINGTON AVE	UP Commercial	1
Total UP Commercial:				40
22				
UP Mixed Use				
20010875.01	SJW PROPERTIES LLC	875 N HANOVER ST -salon & apts	UP Mixed Use	2
20010933.02	MCGONIGLE, MICHAEL	933 N HANOVER ST	UP Mixed Use	2
20010943.01	STRAUSS, PAUL	943 N HANOVER ST	UP Mixed Use	3
20010955.01	BRODI, GERALD & ELAINE	955 N HANOVER ST	UP Mixed Use	11
21070842.01	DAVIDHEISER, ALLEN & BEVERLY	842 FARMINGTON AVE	UP Mixed Use	1
24010940.01	TOLENTINO, ROBERT & ASUNCION	940 WILLOW ST	UP Mixed Use	3
41050013.01	OLOCK, ANDREW	941 N HANOVER ST	UP Mixed Use	4
Total UP Mixed Use:				26
7				
UP Public				
16030233.01	HOLY TRINITY ORTHODOX CHURCH	1256 JUNIPER ST	UP Public	1
20011351.01	POTTSGROVE SCHOOL DISTRICT - ADMIN BLDG	1351 N HANOVER ST - MULTI	UP Public	30
41230093.01	CHURCH OF LATTER - DAY SAINTS	93 MAUGERS MILL RD	UP Public	1
Total UP Public:				32
3				
UP Residential				
10140863.02	MILLS, LUCAS	863 FARMINGTON AVE	UP Residential	1
10140871.01	POLLOCK, ANTHONY FILLMAN & BRENDA	871 FARMINGTON AVE	UP Residential	1

Borough of Pottstown

Table Lists - Customer EDU Count Sewer UP

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Customer Number	Customer Name	Service Address	Customer Type	Units
42061525.02	HUTELMYER, JULIA & GREG	1525 CLOVERHILL RD	UP Residential	1
42071000.01	HEATH, TERENCE M & CATHERINE	1000 FALLBROOK LN	UP Residential	1
42071002.02	DAVIS, STEPHEN & KATHRYN	1002 FALLBROOK LN	UP Residential	1
42071004.02	GALLINA, GAETANO	1004 FALLBROOK LN	UP Residential	1
42071006.02	LIANG, JIE LIN & XIUYAN	1006 FALLBROOK LN	UP Residential	1
42071007.01	STEELE, CORTNEY & DANIEL	1007 FALLBROOK LN	UP Residential	1
42071008.02	FENOGLIO, CASEY & RICHARD	1008 FALLBROOK LN	UP Residential	1
42071009.02	SHAW, SCOTT & THERESA	1009 FALLBROOK LN	UP Residential	1
42071010.02	JOHNSON, FRANKLIN & KIMBERLY	1010 FALLBROOK LN	UP Residential	1
42071011.01	HUBBARD, ANNA	1011 FALLBROOK LN	UP Residential	1
42071012.02	DIXON, JULIAN & ERICA	1012 FALLBROOK LN	UP Residential	1
42071013.01	HARISH, BIDADI & LAKSHMI	1013 FALLBROOK LN	UP Residential	1
42071014.02	RICHARDSON, KATRINA	1014 FALLBROOK LN	UP Residential	1
42071015.02	DZIUNYCZ, MATTHEW & EMILY	1015 FALLBROOK LN	UP Residential	1
42071016.02	ISHLER, KARI KLAUS & MICHAEL	1016 FALLBROOK LN	UP Residential	1
42071017.03	CONNER IV, SAMUEL	1017 FALLBROOK LN	UP Residential	1
42071018.01	SHORT, CHRISTOPHER & RONNA	1018 FALLBROOK LN	UP Residential	1
42071019.01	MCPHILLIMEY, MARK & ANN KOREEN	1019 FALLBROOK LN	UP Residential	1
42071020.01	MCWILLIAMS, DAVID & LAURI	1020 FALLBROOK LN	UP Residential	1
42071021.01	RIZZETTO, NINA	1021 FALLBROOK LN	UP Residential	1
42071022.02	PASQUAL, MICHAEL & MARIA	1022 FALLBROOK LN	UP Residential	1
42071024.01	COLLINGS, MARK	1024 FALLBROOK LN	UP Residential	1
42071026.01	GAINES, NICOLE	1026 FALLBROOK LN	UP Residential	1
42071028.02	SPRING HILL REALTY	1028 FALLBROOK LN	UP Residential	1
42071030.03	HOUSEAL JR, JOSEPH & CARA	1030 FALLBROOK LN	UP Residential	1
42071032.03	DAILY, ALBERT & REGINA	1032 FALLBROOK LN	UP Residential	1
42071034.01	FELTENBERGER, CHAD & HEATHER	1034 FALLBROOK LN	UP Residential	1
42071036.02	SOLIVAN, GINA & ADRIAN	1036 FALLBROOK LN	UP Residential	1
42071038.03	THAO, DAVID	1038 FALLBROOK LN	UP Residential	1
42071040.01	JORGENSEN, TRISHA & ERICK	1040 FALLBROOK LN	UP Residential	1
42071042.01	KROENING, TERRY	1042 FALLBROOK LN	UP Residential	1
42071044.01	SCHURR, JEFFREY KENT	1044 FALLBROOK LN	UP Residential	1
42071045.01	PURKAYASTHA, DEBASHISH & SUDDATTA	1045 FALLBROOK LN	UP Residential	1
42071046.03	WILLIS, FRANK & FAITH	1046 FALLBROOK LN	UP Residential	1
42071047.02	CONG, MY	1047 FALLBROOK LN	UP Residential	1
42071048.01	HAINES, LARRY & DONNA	1048 FALLBROOK LN	UP Residential	1
42071050.02	MIDDLETON, JAMES	1050 FALLBROOK LN	UP Residential	1
42071052.01	SEETER, DANIEL	1052 FALLBROOK LN	UP Residential	1
42071513.04	ROMANO, DANIEL & SARA	1513 CLOVER HILL RD	UP Residential	1
42081600.02	GOMEZ, ODETTE	1600 APPLGATE LN	UP Residential	1
42081601.01	RODRIGUEZ, RUTH & JUAN	1601 APPLGATE LN	UP Residential	1
42081602.02	EGARIAN, CHRISTOPHER	1602 APPLGATE LN	UP Residential	1
42081604.01	LAWLOR, CARL & LORETTA	1604 APPLGATE LN	UP Residential	1
42081606.01	COHEN, SIDNEY & RUTH	1606 APPLGATE LN	UP Residential	1
42081608.01	ROCHA, WILL & CARMEN	1608 APPLGATE LN	UP Residential	1
42081609.01	EVANS, GARETH	1609 APPLGATE LN	UP Residential	1
42081610.01	DUNKEL, CAROL	1610 APPLGATE LN	UP Residential	1
42081611.02	SORG, GREGORY & TRICIA	1611 APPLGATE LN	UP Residential	1
42081612.01	MANCINI, MICHAEL & AMIE	1612 APPLGATE LN	UP Residential	1
42091501.02	HULL, KEVIN & AMY	1501 MAYWOOD LN	UP Residential	1
42091503.02	EPSTEIN, CARL & LINDA	1503 MAYWOOD LN	UP Residential	1
410512005.01	CUTLER, ROBERT & ELIZABETH	2005 PROUT FARM RD	UP Residential	
4102152012.01	SCHAEFFER, JACK & AUDREY	1520 FARMINGTON AVE	UP Residential	1
4152006901.01	BUCK, WILLIAM	69 MICKLITZ DR	UP Residential	1
Total UP Residential:				1429
1,390				

Borough of Pottstown

Table Lists - Customer EDU Count Sewer UP

Page: 26
Apr 02, 2019 10:29AM

Customer Number	Customer Name	Service Address	Customer Type	Units
Total 10:				
1,422				1527
16				
UP Commercial				
10140882.01	DICKENSON, CHARLES	882 FARMINGTON AVE	UP Commercial	2
10140902.01	CMD SERVICES INC	902 FARMINGTON AVE	UP Commercial	3
18011263.02	H & E PALERMO REAL ESTATE	1263 N CHARLOTTE ST	UP Commercial	2
20010863.01	SJW PROPERTIES LLC	871 N HANOVER ST -comm.bldg	UP Commercial	6
41020179.01	APPLEBEES RESTAURANT - ROSE CAS DIN LP	815 STATE ST	UP Commercial	30
41021495.01	KIM, JONG Y & YUN K	1495 FARMINGTON AVE	UP Commercial	3
Total UP Commercial:				
6				46
Total 16:				
6				46
Grand Totals:				
1,428				1573

Report Criteria:

Service.Service number = 10,16
 Group Code.Group code = "A","B","C"
 Customer.Final bill date = {IS NULL}
 Billing.Temporary disconnect date = {IS NULL}
 Billing.Final disconnect date = {IS NULL}

WORKING NOTES														WORKING NOTES													
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028														
GROSS Property, plant and equipment	-	-	-	15,295,347	15,295,347	15,532,174	15,772,688	16,016,886	16,264,885	16,516,724	16,772,463	17,032,161	17,295,880														
Accumulated Depreciation	-	-	-	3,746,450	4,027,231	4,268,646	4,518,820	4,767,791	5,015,615	5,272,355	5,533,071	5,797,823	6,066,672														
NET PPE	-	-	-	11,548,897	11,268,116	11,263,528	11,253,868	11,249,095	11,249,270	11,244,369	11,239,392	11,234,338	11,229,207														
Upper Pottsgrove Total Debt																											
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-	-														
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-	-														
Depreciation / GROSS PPE																											
#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.84%					0	0	0	0														
IOU savings																											
Muni CAPX																											
0%																											
CAPX/Prior Yr. GROSS PPE																											
CAPX																											
Dep rate																											
Hal yr. Dep																											
Dep on CAPX																											
Rate of retirement																											
Retired property																											
Dep on Retired property																											
Dep on Priort yr. GROSS																											
Total Dep																											
Upper Pottsgrove																											
280,761																											
part of OCN																											
NET PPE																											
Rev																											
PURTA 0.00152765																											
Reg Assessment Fee 0.005652534																											
Upper Pottsgrove																											
FIX CIP																											
CIP \$																											
part of OCN = to DepX																											
97,860																											
2019																											
2020																											
2021																											
2022																											
2023																											
2024																											
2025																											
2026																											
2027																											
2028																											
Sewer Rental Charges																											
EDUs																											
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Upper Pottsgrove																											
Customer Growth																											
Delivered to Customer																											
Customers																											
Total Revenue (Less TAP)																											
avg CUST rev																											
avg CUST flow																											
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Upper Pottsgrove																											
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42.02																											
1,428																											
1,312,039																											
918.79																											
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Depreciation Expense

[illegible]

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 942.28	\$ 942.28	\$ 946.52	\$ 946.52	\$ 951.23
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.94	\$ -	\$ 4.24	\$ -	\$ 4.73
	7,359	7,429	7,501	7,573	7,645	7,719	7,793	7,868	7,943	8,019	8,096	8,174	8,252	8,340	8,420	8,539
	1,547,751	1,562,610	1,577,611	1,592,756	1,608,046	1,623,484	1,639,069	1,654,804	1,670,690	1,686,729	1,702,921	1,719,270	1,737,510	1,754,190	1,779,000	1,796,079
	-	-	-	-	-	-	-	-	-	-	-	1,719	-	7,894	-	8,980
	16,080	16,073	16,065	16,057	16,050	16,042	16,034	16,025	16,017	16,009	16,000	15,991	15,983	15,974	15,965	15,955
	8,723	8,807	8,891	8,977	9,063	9,150	9,238	9,326	9,416	9,506	9,597	9,690	9,792	9,886	10,026	10,123
	24,803	24,880	24,956	25,034	25,113	25,192	25,272	25,351	25,433	25,515	25,597	25,681	25,775	25,860	25,991	26,078
	15%	0.15														
	50%	0.5														
	100%	1														
Upper Potsgrove																
Wages																
Professional Services																
Eliminated Exp																
Upper Potsgrove																
Reported CAPX - from the financials																
GROSS Property, plant and equipment																
Accumulated Depreciation																
NET PPE																
Total Debt																
Net Equity																
Investor Provided Capital																
Depreciation Rate																

ment.

WORKING NOTES														WORKING NOTES															
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028																
GROSS Property, plant and equipment	-	-	-	15,295,347	15,295,347	15,532,174	15,772,688	16,016,886	16,264,885	16,516,724	16,772,463	17,032,161	17,295,880																
Accumulated Depreciation	-	-	-	3,746,450	4,027,231	4,268,646	4,518,820	4,767,791	5,015,615	5,272,355	5,533,071	5,797,823	6,066,672																
NET PPE	-	-	-	11,548,897	11,268,116	11,263,528	11,253,868	11,249,095	11,249,270	11,244,369	11,239,392	11,234,338	11,229,207																
Upper Pottsgrove Total Debt	-	-	-	-	-	-	-	-	-	-	-	-	-																
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-	-																
Investor Provided Capital	-	-	-	-	-	-	-	-	-	-	-	-	-																
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	1.84%					0	0	0	0																
IOU savings				Muni CAPX	0	0	0	0	0	0	0	0	0																
				0%																									
				CAPX/Prior Yr. GROSS PPE	97,860		1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%																
				CAPX	0.00%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%																
				Dep rate	0.00%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%																
				Hall yr. Dep		-	2,563	2,603	2,643	2,684	2,726	2,768	2,811																
				Dep on CAPX	15.0%	-	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%																
				Rate of retirement	14,679	-	41,793	42,440	43,097	43,765	44,442	45,130	45,829																
				Retired property	-	-	769	781	793	805	818	830	843																
				Dep on Retired property	-	-	280,761	281,454	285,792	290,217	294,711	299,274	303,908																
				Dep on Priort yr. GROSS	-	-	280,761	283,228	287,614	292,067	296,589	301,182	305,845																
				Total Dep	-	-	280,761	283,228	287,614	292,067	296,589	301,182	305,845																
Upper Pottsgrove	-	-	-	280,761																									
Depreciation Expense				part of OCN																									
				NET PPE		PURTA	0.00152765																						
				Rev		Reg Assessment Fee	0.005652534																						
Upper Pottsgrove				CIP	\$	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028														
				part of OCN	\$	-	\$	-	\$	-	\$	-	\$	-	\$														
				part of OCN	\$	97,860	0																						
				FIX CIP		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028														
				0	0	1,312,039	1,362,072	1,374,115	1,354,500	1,364,934	746,580	774,410	793,960	1785	1802														
				0	0	0	0	1,573	1,573	1,597	1649	1718	1734	17	17														
				0	0	0	0	786.5	0	24	52	69	16	17	17														
				#DIV/0!	#DIV/0!	0	#DIV/0!	873.5632549	\$	1573	1585	1623	1683.5	1726															
				\$	\$	460.00	\$	460.00	\$	460.00	\$	460.00	\$	460.00															
				#DIV/0!	#DIV/0!	1747.12651	\$	861.093452																					
				C	C	1.428	14																						
				E	E	1.573	15																						
				0.91	0.91																								
Upper Pottsgrove				1742000	0	22	47	63	46																				
				Customer Growth	42	42	43	44	46																				
				Delivered to Customer	1,428	1,428	1,430	1,497	1,500																				
				Customers	1,312,039	1,312,039	1,364,934	1,387,055	1,438,829																				
				Total Revenue (Less TAP)	918.79	953.83	962.27	948.53	941.33	926.56	922.33	936.85	936.86	936.86	936.86														
				avg CUST rev	0	0	0	0	0	0	0	0	0	0	0														
				avg CUST flow	#DIV/0!	#DIV/0!	873.56	861.09	854.69	841.15	837.50	850.95	850.78	850.68	850.74														
				avg EDU rev	#DIV/0!	#DIV/0!	0	0	0	0	0	0	0	0	0														
				avg EDU flow	Rev Calculated	1,374,115	1,364,934	1,387,055	1,416,242	1,445,746	1,482,624	1,496,868	1,511,237	1,525,746	1,533,034														

2

[illegible]

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 941.33	\$ 942.28	\$ 942.28	\$ 946.52	\$ 946.52	\$ 951.23
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.94	\$ -	\$ 4.24	\$ -	\$ 4.73
	7,359	7,429	7,501	7,573	7,645	7,719	7,793	7,868	7,943	8,019	8,096	8,174	8,252	8,340	8,420	8,539
	1,547,751	1,562,610	1,577,611	1,592,756	1,608,046	1,623,484	1,639,069	1,654,804	1,670,690	1,686,729	1,702,921	1,719,270	1,737,510	1,754,190	1,779,000	1,796,079
	-	-	-	-	-	-	-	-	-	-	-	1,719	-	7,894	-	8,980
	16,080	16,073	16,065	16,057	16,050	16,042	16,034	16,025	16,017	16,009	16,000	15,991	15,983	15,974	15,965	15,955
	8,723	8,807	8,891	8,977	9,063	9,150	9,238	9,326	9,416	9,506	9,597	9,690	9,792	9,886	10,026	10,123
	24,803	24,880	24,956	25,034	25,113	25,192	25,272	25,351	25,433	25,515	25,597	25,681	25,775	25,860	25,991	26,078
	15%	0.15														
	50%	0.5														
	100%	1														
Upper Potsgrove																
Wages																
Professional Services																
Eliminated Exp																
Upper Potsgrove																
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								
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Depreciation Expense	-	-	-	-	280,761.00								
CAPX	0	320,901	469,500	97,860	800,254		422,129						

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.82% of prior year-end GROSS Property, plant and equipment

Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.82% of prior year-end GROSS Property, plant and equipment

No Additional O&M.

dummy

dummy

No Additional O&M.

ment.

[illegible]

Depreciation Expense

[illegible][illegible]

	Upper Pottsgrove Reported CAPX - from the financials	0	0	320,901	469,500	included in OCN 97,860	= to DepX 0
		<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	
GROSS Property, plant and equipment		-	-	-	-	15,295,347	
Accumulated Depreciation		-	-	-	-	3,746,450	
NET PPE		-	-	-	-	11,548,897	
							<u>Per Books</u>
							<u>Difference</u>
Total Debt		-	-	-	-	-	
Net Equity		-	-	-	-	-	
Investor Provided Capital		-	-	-	-	-	
Depreciation Rate		0.00%	0.00%	0.00%	#DIV/0!	1.84%	

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
			0.5%			0.5%			0.5%			0.5%		0.5%		0.5%
	\$ 1,131.42	\$ 1,131.42	\$ 1,137.07	\$ 1,137.07	\$ 1,137.07	\$ 1,142.76	\$ 1,142.76	\$ 1,142.76	\$ 1,148.47	\$ 1,148.47	\$ 1,148.47	\$ 1,154.22	\$ 1,154.22	\$ 1,159.99	\$ 1,159.99	\$ 1,165.79
	\$ -	\$ -	\$ 5.66	\$ -	\$ -	\$ 5.69	\$ -	\$ -	\$ 5.71	\$ -	\$ -	\$ 5.74	\$ -	\$ 5.77	\$ -	\$ 5.80
8,800	8,800	8,929	9,015	9,102	9,235	9,324	9,413	9,551	9,643	9,735	9,878	9,973	10,068	10,216	10,314	10,465
1,860,288	1,878,147	1,896,177	1,923,953	1,942,423	1,961,070	1,989,796	1,989,796	2,008,898	2,028,183	2,057,892	2,077,648	2,097,593	2,128,319	2,148,750	2,180,225	2,201,155
-	-	9,481	-	-	9,805	-	-	-	10,141	-	-	10,488	-	10,744	-	11,006
16,080	16,073	16,065	16,057	16,050	16,042	16,034	16,034	16,025	16,017	16,009	16,000	15,991	15,983	15,974	15,965	15,955
10,484	10,585	10,687	10,843	10,947	11,052	11,214	11,214	11,322	11,431	11,598	11,709	11,822	11,995	12,110	12,288	12,405
26,564	26,658	26,752	26,900	26,997	27,094	27,238	27,238	27,347	27,448	27,607	27,709	27,813	27,978	28,084	28,253	28,360
Upper Potsgrove																
LESS: EOS - Wages & Benefits	15%	0.15														
LESS: EOS - Professional Services	50%	0.5														
LESS: EOS - Eliminated Expenses	100%	1														
Upper Potsgrove																
Wages																
Professional Services																
Eliminated Exp																
Upper Potsgrove																
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									
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028			
Depreciation Expense	-	-	-	-	280,761.00											
CAPX	0	320,901	469,500	97,860	800,254		422,129									
						XYZ's LTCP	0	0	0	0	0	0	0			
						State of Good Repair	0	0	0	0	0	0	0			
						XYZ's Base CAPX	0	0	0	0	0	0	0			
						Base & LTCP	0	0	0	0	0	0	0			
						Base & LTCP & Expand WWTP	0	0	0	0	0	0	0			
						xyz LTCP	0	0	0	0	0	0	0			
						xyz LTCP	0	0	0	0	0	0	0			
						Expand WWTP	0	0	0	0	0	0	0			
						PWD Base change	0	0	0	0	0	0	0			
						CAPX	0	0	0	0	0	0	0			
						Expand WWTP work area	0	0	0	0	0	0	0			
						State of Good Repair	0	0	0	0	0	0	0			
						XYZ's Base CAPX	0	0	0	0	0	0	0			
						Base & LTCP	0	0	0	0	0	0	0			
						Base & LTCP & Expand WWTP	0	0	0	0	0	0	0			
						OpEx	0	0	0	0	0	0	0			
						State of Good Repair	Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.82% of prior year-end GROSS Property, plant and equip									
						XYZ's Base CAPX	dummy									
						Base & LTCP	dummy									
						Base & LTCP & Expand WWTP	dummy									
						CAPX note	Capital Expenditures - Pre-2021 based on financials/budget. Post-2020 years are estimates at 1.82% of prior year-end GROSS Property, plant and equip									
						State of Good Repair	No Additional O&M.									
						XYZ's Base CAPX	dummy									
						Base & LTCP	dummy									
						Base & LTCP & Expand WWTP	dummy									
						Additional OpEx note	No Additional O&M.									

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	WORKING NOTES					WORKING NOTES									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
GROSS Property, plant and equipment	-	-	-	-	23,953,154	23,953,154	24,324,035	24,700,659	25,083,114	25,471,491	25,865,882	26,266,379	26,673,077	27,086,072	
Accumulated Depreciation	-	-	-	-	6,953,154	7,593,892	7,771,990	8,155,942	8,545,840	8,941,776	9,343,841	9,752,132	10,166,745	10,587,777	
NET PPE	-	-	-	-	17,000,000	16,359,262	16,552,045	16,544,717	16,537,274	16,529,715	16,522,041	16,514,247	16,506,332	16,498,295	
Upper Potsgrove Total Debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Net Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Investor Provided Capital	-	-	-	-	-	-	(440,738)	-	-	-	-	-	-	-	
Depreciation / GROSS PPE	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	0.00%	1.84%	0	0	0	0	0	0	0	0	
IOU savings															
										</					

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	27,503,462	27,931,345	28,363,822	28,802,996	29,248,970	29,701,849	30,161,741	30,628,753	31,102,996	31,584,582	32,073,625	32,570,240	33,074,544	33,586,657	34,106,700	34,634,795
Accumulated Depreciation	11,015,328	11,449,499	11,890,393	12,338,113	12,792,766	13,254,458	13,723,300	14,199,401	14,682,873	15,173,830	15,672,390	16,178,669	16,692,787	17,214,866	17,745,028	18,283,400
NET PPE	16,490,134	16,481,846	16,473,429	16,464,883	16,456,204	16,447,391	16,438,441	16,429,352	16,420,123	16,410,752	16,401,235	16,391,571	16,381,757	16,371,791	16,361,672	16,351,395
grove Total Debt																
Net Equity																
Investor Provided Capital																
Depreciation / GROSS PPE																
	100%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%
	493,400	501,039	508,797	516,675	524,675	532,799	541,049	549,426	557,933	566,572	575,345	584,253	593,299	602,486	611,815	621,288
	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%
	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%
	4,539	4,610	4,681	4,753	4,827	4,902	4,978	5,055	5,133	5,212	5,293	5,375	5,458	5,543	5,629	5,716
	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%	15.0%
	74,010	75,156	76,320	77,501	78,701	79,920	81,157	82,414	83,690	84,986	86,302	87,638	88,995	90,373	91,772	93,193
	1,362	1,383	1,404	1,426	1,448	1,471	1,493	1,516	1,540	1,564	1,588	1,613	1,638	1,663	1,689	1,715
	498,384	506,101	513,937	521,894	529,975	538,181	546,514	554,976	563,569	572,295	581,156	590,155	599,292	608,572	617,994	627,563
Upper Pottsgrove	301,561	309,328	317,213	325,221	333,354	341,613	349,999	358,515	367,162	375,943	384,861	393,917	403,113	412,452	421,935	431,565
Depreciation Expense																
Sewer Rental Charges																
EDUs	1819	1836	1854	1872	1890	1908	1926	1944	1963	1982	2001	2020	2039	2059	2079	2099
	17	17	18	18	18	18	18	18	19	19	19	19	19	20	20	20
Upper Pottsgrove																
	0.98%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%
	49	49	50	50	51	51	51	52	52	53	53	54	55	55	56	56
	1,652	1,668	1,684	1,700	1,716	1,733	1,750	1,766	1,783	1,800	1,818	1,835	1,853	1,871	1,889	1,907
	1,789,712	1,806,893	1,824,448	1,850,040	1,876,205	1,894,217	1,914,314	1,932,691	1,960,025	1,978,842	2,006,829	2,026,094	2,047,590	2,067,247	2,096,485	2,116,611
	1,083.32	1,083.32	1,088.19	1,088.19	1,093.09	1,093.09	1,094.18	1,094.18	1,099.11	1,099.11	1,104.05	1,104.05	1,105.16	1,105.16	1,110.13	1,110.13
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	983.90	984.15	988.38	988.27	992.70	992.78	993.93	994.18	998.48	998.41	1,002.91	1,003.02	1,004.21	1,004.01	1,008.41	1,008.39
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,779,423	1,798,303	1,815,566	1,841,244	1,858,920	1,885,211	1,903,309	1,923,503	1,941,968	1,969,433	1,988,340	2,016,462	2,035,819	2,057,418	2,077,170	2,106,548

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	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>
		0.5%		0.5%		0.1%		0.5%								
\$	1,088.49	\$ 1,093.39	\$ 1,093.39	\$ 1,098.31	\$ 1,098.31	\$ 1,099.41	\$ 1,099.41	\$ 1,104.36	\$ 1,104.36	\$ 1,109.33	\$ 1,109.33	\$ 1,110.44	\$ 1,110.44	\$ 1,115.43	\$ 1,115.43	\$ 1,120.43
\$	-	\$ 4.90	-	\$ 4.92	\$ -	\$ 1.10	\$ -	\$ 4.95	\$ -	\$ 4.97	\$ -	\$ -	\$ -	\$ 5.00	\$ -	\$ 5.02
8,500	8,591	8,673	8,796	8,880	9,006	9,092	9,189	9,277	9,277	9,408	9,498	9,633	9,725	9,828	9,923	10,063
1,789,712	1,806,893	1,832,448	1,850,040	1,876,205	1,894,217	1,914,314	1,932,691	1,960,025	1,960,025	1,978,842	2,006,829	2,026,094	2,047,590	2,067,247	2,096,485	2,116,611
-	8,131	-	8,325	-	1,894	-	8,697	-	-	8,905	-	2,026	-	9,303	-	9,525
23,626	23,614	23,602	23,590	23,578	23,565	23,553	23,540	23,527	23,527	23,514	23,500	23,487	23,473	23,459	23,444	23,430
10,087	10,183	10,327	10,427	10,574	10,676	10,789	10,892	11,046	11,046	11,153	11,310	11,419	11,541	11,661	11,816	11,929
33,713	33,797	33,929	34,017	34,152	34,241	34,342	34,432	34,573	34,573	34,667	34,810	34,906	35,013	35,110	35,260	35,359

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
GROSS Property, plant and equipment	27,503,462	27,931,345	28,363,822	28,802,996	29,248,970	29,701,849	30,161,741	30,628,753	31,102,996	31,584,582	32,073,625	32,570,240	33,074,544	33,586,657	34,106,700	34,634,795
Accumulated Depreciation	11,015,328	11,449,499	11,890,393	12,338,113	12,792,766	13,254,458	13,723,300	14,199,401	14,682,873	15,173,830	15,672,390	16,178,669	16,692,787	17,214,866	17,745,028	18,283,400
NET PPE	16,490,134	16,481,846	16,473,429	16,464,883	16,456,204	16,447,391	16,438,441	16,429,352	16,420,123	16,410,752	16,401,235	16,391,571	16,381,757	16,371,791	16,361,672	16,351,395
grove Total Debt																
Net Equity																
Investor Provided Capital																
Depreciation / GROSS PPE																
	100%	0	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%	100%
	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%	1.82%
	493,400	501,039	508,797	516,675	524,675	532,799	541,049	549,426	557,933	566,572	575,345	584,253	593,299	602,486	611,815	621,288
	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%	1.84%
	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%
	4,539	4,610	4,681	4,753	4,827	4,902	4,978	5,055	5,133	5,212	5,293	5,375	5,458	5,543	5,629	5,716
	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%	15.0%
	74,010	75,156	76,320	77,501	78,701	79,920	81,157	82,414	83,690	84,986	86,302	87,638	88,995	90,373	91,772	93,193
	1,362	1,383	1,404	1,426	1,448	1,471	1,493	1,516	1,540	1,564	1,588	1,613	1,638	1,663	1,689	1,715
	498,384	506,101	513,937	521,894	529,975	538,181	546,514	554,976	563,569	572,295	581,156	590,155	599,292	608,572	617,994	627,563
Upper Pottsgrove	301,561	309,328	317,213	325,221	333,354	341,613	349,999	358,515	367,162	375,943	384,861	393,917	403,113	412,452	421,935	431,565
Depreciation Expense																
Sewer Rental Charges																
EDUs	1819	1836	1854	1872	1890	1908	1926	1944	1963	1982	2001	2020	2039	2059	2079	2099
	17	17	18	18	18	18	18	18	19	19	19	19	19	20	20	20
Upper Pottsgrove																
	0.98%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%	0.96%
	49	49	50	50	51	51	51	52	52	53	53	54	55	55	56	56
	1,652	1,668	1,684	1,700	1,716	1,733	1,750	1,766	1,783	1,800	1,818	1,835	1,853	1,871	1,889	1,907
	2,454,330	2,477,892	2,501,679	2,525,324	2,549,692	2,574,294	2,600,192	2,626,394	2,652,838	2,679,534	2,706,498	2,733,743	2,761,283	2,789,132	2,817,295	2,845,678
	1,485.61	1,485.61	1,485.61	1,493.04	1,493.04	1,493.04	1,500.51	1,500.51	1,500.51	1,508.01	1,508.01	1,508.01	1,515.55	1,515.55	1,523.13	1,530.71
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,349.27	1,349.61	1,349.34	1,355.94	1,355.92	1,356.02	1,363.03	1,363.37	1,363.14	1,369.85	1,369.86	1,370.01	1,377.12	1,376.84	1,383.57	1,390.29
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2,430,509	2,466,111	2,489,786	2,513,687	2,538,508	2,563,993	2,589,713	2,615,993	2,642,834	2,669,245	2,696,226	2,722,779	2,749,905	2,776,616	2,802,911	2,828,791

	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
			0.5%			0.5%			0.5%			0.5%		0.5%		0.5%
	\$ 1,492.71	\$ 1,492.71	\$ 1,500.17	\$ 1,500.17	\$ 1,500.17	\$ 1,507.67	\$ 1,507.67	\$ 1,507.67	\$ 1,515.21	\$ 1,515.21	\$ 1,515.21	\$ 1,522.79	\$ 1,522.79	\$ 1,530.40	\$ 1,530.40	\$ 1,538.03
	\$ -	\$ -	\$ 746	\$ -	\$ -	\$ 750	\$ -	\$ -	\$ 754	\$ -	\$ -	\$ 758	\$ -	\$ 761	\$ -	\$ 765
11,611	11,781	11,894	12,008	12,184	12,301	12,419	12,601	12,722	12,844	13,032	13,157	13,284	13,478	13,608	13,807	13,807
2,454,330	2,477,892	2,501,679	2,538,324	2,562,692	2,587,294	2,625,192	2,650,394	2,675,838	2,715,034	2,741,098	2,767,413	2,807,950	2,834,906	2,876,432	2,904,045	2,904,045
-	-	12,508	-	-	12,956	-	-	13,379	-	-	-	13,837	-	14,175	-	14,520
23,626	23,614	23,602	23,590	23,578	23,565	23,553	23,540	23,527	23,514	23,500	23,487	23,473	23,459	23,444	23,430	23,430
13,852	13,965	14,069	14,306	14,443	14,582	14,795	14,937	15,081	15,302	15,449	15,597	15,825	15,977	16,211	16,367	16,367
37,458	37,579	37,701	37,896	38,021	38,147	38,348	38,477	38,608	38,816	38,949	39,084	39,298	39,436	39,655	39,797	39,797
Upper Potsgrove																
LESS: EOS - Wages & Benefits	15%	0.15														
LESS: EOS - Professional Services	50%	0.5														
LESS: EOS - Eliminated Expenses	100%	1														
Upper Potsgrove																
Wages																
Professional Services																
Eliminated Exp																
Upper Potsgrove																
Reported CAPX - from the financials																
GROSS Property, plant and equipment																
Accumulated Depreciation																
NET PPE																
Total Debt																
Net Equity																
Investor Provided Capital																
Depreciation Rate																

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WHIRLPOOL CORP. NYSE:WHR										RECENT PRICE	127.15	PIE RATIO	12.7 (Trailing: 8.3 Median: 11.0)	RELATIVE P/E RATIO	0.62	DIVID YLD	3.8%	VALUE LINE	1784
TIMELINESS 4 Lowered 3/20/20										High: 118.4	104.2	159.2	196.7	217.1	194.1	187.5	163.6	158.4	Target Price Range
SAFETY 3 New 7/27/20										Low: 19.2	45.2	101.7	124.4	140.5	123.6	99.4	103.8	64.0	2023 2024 2025
TECHNICAL 4 Raised 7/10/20										LEGENDS									
BETA 1.40 (1.00 = Market)										Options: Yearly Price Strength									
18-Month Target Price Range										Shaded area indicates recession									
Low-High										50 x Cash Flow p sh									
Midpoint (% to Mid)										Value Line									
\$38-\$153 \$96 (-25%)										Value Line									
2023-25 PROJECTIONS										Percent									
High 245 (+95%) 20%										to Buy									
Low 165 (+30%) 10%										to Sell									
Institutional Decisions										to Hold									
2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021										© VALUE LINE PUBL. LLC 23-25									
197.31 210.54 231.79 255.37 259.00 227.99 241.66 245.61 229.66 243.75 254.77 270.54 278.22 298.34 328.70 324.11 270.15 298.40										Sales per sh									
12.70 12.71 13.28 16.32 13.90 11.37 16.61 16.54 14.04 17.97 21.69 17.97 21.69 23.37 23.65 26.00 25.62 19.45										"Cash Flow" per sh									
5.90 6.19 6.35 8.10 5.50 4.34 9.10 8.95 7.05 10.03 11.39 12.38 14.05 13.78 15.16 16.00 10.00 10.00										Earnings per sh A									
1.72 1.72 1.72 1.72 1.72 1.72 1.72 1.72 1.93 2.00 2.38 2.88 3.45 3.90 4.55 4.75 4.80 4.80										Div'ds Decl'd per sh B									
7.63 7.26 7.38 7.05 7.49 7.21 7.80 8.00 6.03 7.51 9.23 8.92 8.88 9.63 9.22 8.44 7.00 7.50										Cap'l Spending per sh									
23.97 25.66 42.09 51.46 41.18 48.85 55.61 55.01 59.92 63.95 62.63 64.10 59.13 56.30 50.71 54.85 63.30										Book Value per sh C									
67.00 68.00 78.00 76.00 73.00 75.00 76.00 76.00 79.00 77.00 78.00 77.22 74.47 71.00 64.00 63.00 62.00										Common Shs Outstg D									
11.2 11.7 13.4 11.6 12.8 12.0 9.5 7.9 10.6 12.8 13.4 14.4 11.9 12.9 9.3 8.8										Btd figures are Value Line estimates									
2.6% 2.4% 2.0% 1.8% 2.4% 3.3% 2.0% 2.7% 2.7% 1.8% 1.9% 1.9% 2.3% 2.4% 3.2% 3.4%										Avg Ann'l P/E Ratio									
CAPITAL STRUCTURE as of 3/31/20										Avg Ann'l Div'd Yield									
Total Debt \$777.4 mill. Due in 5 Yrs \$409.1 mill.										Sales (\$mill)									
LT Debt \$538.2 mill. LT Interest \$160 mill.										Operating Margin									
(Total interest coverage: 4.9x) (64% of Capital)										Depreciation (\$mill)									
Leases, Un capitalized: \$214 mill.										Net Profit (\$mill)									
Pension Assets: \$219 \$3.5 bill.										Income Tax Rate									
Preferred Stock None										Net Profit Margin									
Common Stock 62,163,066 shares										Working Cap'l (\$mill)									
as of 4/24/20										Long-Term Debt (\$mill)									
MARKET CAP: \$7.9 billion (Large Cap)										3925 Sh'r Equity (\$mill)									
CURRENT POSITION 2018 2019 3/31/20										Return on Total Cap'l									
Cash Assets 1498 1952 2837										Return on Sh'r Equity									
Receivables 2210 2196 1931										Retained to Com' Eq									
Inventory (LIFO) 2533 2438 2543										BUSINESS: Whirlpool Corporation is the leading manufacturer of									
Other 1657 610 551										sales are 56% of total. Acquired Maytag Corporation (3/06). The									
Current Assets 7888 7398 8182										company has about 77,000 employees. Officers & directors own									
Acc't Payable 4487 4547 4065										1.2% of common stock. The Vanguard Group, 13.2%; PrimeCap									
Debt Due 1981 853 2392										Mgmt., 12.4% (3/20 proxy). Chairman & CEO: Marc Blazer, In-									
Other 3910 2959 2119										corporated: DE Address: 2000 M-33, Benton Harbor, MI 49022									
Current Liab. 9678 8369 8576										Telephone: 269-923-5000. Internet: www.whirlpoolcorp.com									
ANNUAL RATES										been more conservatively staggered.									
Change (per \$) 5 Yrs. 10 Yrs. 20 Yrs.										Meanwhile, the home improvement chan-									
Sales 3.5% 3.5% 3.5%										nel kept stores open during this crisis, al-									
Cash Flow 8.0% 8.0% 8.0%										lowing consumers to continue purchasing									
Earnings 8.5% 8.5% 8.5%										appliances. Furthermore, Whirlpool's ini-									
Dividends 13.5% 13.5% 13.5%										tial proactive steps to secure component									
Book Value 14.0% 14.0% 14.0%										availability and protect its global supply									
QUARTERLY SALES (\$ mill.)										chain should help support recovery in the									
Cal- Mar'31 Jun'30 Sep'30 Dec'31 Full Year										second half of this year.									
2017 4766 5347 5418 5702 21253										The company is heavily leveraged, but									
2018 4911 5140 5326 5660 21037										remains financially flexible. The ap-									
2019 4760 5186 5081 5382 20419										pliance manufacturer implemented im-									
2020 4325 3250 4200 4975 16750										mediate discretionary budget cuts, tightened									
2021 4300 4500 4500 5200 18500										controls on working capital, and has sig-									
EARNINGS PER SHARE A										nificantly adjusted its cost discipline to									
Cal- Mar'31 Jun'30 Sep'30 Dec'31 Full Year										help alleviate margin pressure. Indeed,									
2017 2.50 3.35 3.83 4.70 13.78										Whirlpool's preemptive response to the									
2018 2.81 3.20 4.55 4.75 15.16										pandemic should pay off as the company									
2019 3.11 4.01 3.97 4.91 16.00										has strong cash flow and ample access to									
2020 2.82 7.5 2.50 3.93 10.00										capital. Even with a heavy debt load,									
2021 2.85 3.00 4.15 13.00										Whirlpool has established favorable									
QUARTERLY DIVIDENDS PAID B										creditworthiness.									
Cal- Mar'31 Jun'30 Sep'30 Dec'31 Full Year										Mid-decade appreciation potential is									
2016 .90 1.00 1.00 1.00 3.90										attractive from this entry point.									
2017 1.00 1.10 1.10 1.10 4.30										Whirlpool's scale, product quality, and									
2018 1.10 1.15 1.15 1.15 4.55										brand recognition ought to help drive sales									
2019 1.15 1.20 1.20 1.20 4.75										and profit growth over the long haul.									
2020 1.20 1.20										Simon R. Shouair July 10, 2020									
(A) Diluted earnings. Quarterly figures may not										Company's Financial Strength									
stand due to rounding and change in shares out-										Stock Price Stability									
standing. Excludes nonrecurring '06 (\$6M)										Price Growth Persistence									
07, '09; '10, (\$1.33); '11, (\$3.96); '13, 21;										Earnings Predictability									
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AMER. STATES WATER NYSE:AWR										AMERICAN WATER NYSE:AWK																	
TIMELINESS		2	Lowered 7/10/20	High: 19.4	Low: 14.9	15.3	17.0	24.1	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
SAFETY		2	Raised 7/20/12	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
TECHNICAL		2	Lowered 6/19/20	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
BETA		0.85	(1.00 = Market)	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
18-Month Target Price Range		Low-High	Midpoint (% to Mid)	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
2023-25 PROJECTIONS		Price	Gain	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Institutional Decisions		Buy	149	137	125	106	88	71	58	45	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CAPITAL STRUCTURE as of 3/31/20		Total Debt \$13.3 billion	Due in 5 Yrs \$8.9 mill.	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Leases, Unencumbered		Annual rentals \$2.7 mill.	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786	
Pension Assets		\$121.9 million	High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786	
Pld Stock None		High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786	Common Stock 36,883,771 shs.	
MARKET CAP: \$2.9 billion (Mid Cap)		High: 19.4	Low: 14.9	15.3	17.0	24.0	33.1	77.29	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786	Current Liab.	
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Cash Assets		7.1	13	24.6	40.6	43.8	47.9	51.1	54.3	57.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Receivable		23.4	20.9	100.3	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Current Assets		131.5	122.5	202.7	203.0	205.2	204.4	203.5	203.5	203.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Payable		59.5	55.6	43.5	43.5	43.5	43.5	43.5	43.5	43.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Debt Due		40.3	5.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		46.8	55.1	56.7	56.7	56.7	56.7	56.7	56.7	56.7	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Cash Assets		7.1	13	24.6	40.6	43.8	47.9	51.1	54.3	57.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Receivable		23.4	20.9	100.3	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
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Debt Due		40.3	5.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		46.8	55.1	56.7	56.7	56.7	56.7	56.7	56.7	56.7	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Cash Assets		7.1	13	24.6	40.6	43.8	47.9	51.1	54.3	57.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Receivable		23.4	20.9	100.3	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Current Assets		131.5	122.5	202.7	203.0	205.2	204.4	203.5	203.5	203.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Payable		59.5	55.6	43.5	43.5	43.5	43.5	43.5	43.5	43.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Debt Due		40.3	5.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		46.8	55.1	56.7	56.7	56.7	56.7	56.7	56.7	56.7	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
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Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
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Debt Due		40.3	5.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		46.8	55.1	56.7	56.7	56.7	56.7	56.7	56.7	56.7	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Cash Assets		7.1	13	24.6	40.6	43.8	47.9	51.1	54.3	57.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Receivable		23.4	20.9	100.3	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Current Assets		131.5	122.5	202.7	203.0	205.2	204.4	203.5	203.5	203.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Payable		59.5	55.6	43.5	43.5	43.5	43.5	43.5	43.5	43.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Debt Due		40.3	5.3	32.3	32.3	32.3	32.3	32.3	32.3	32.3	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		46.8	55.1	56.7	56.7	56.7	56.7	56.7	56.7	56.7	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
CURRENT POSITION		2018	2019	2020	2021	2022	2023	2024	2025	2026	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Cash Assets		7.1	13	24.6	40.6	43.8	47.9	51.1	54.3	57.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Accounts Receivable		23.4	20.9	100.3	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Other		101.0	100.3	102.4	102.4	102.4	102.4	102.4	102.4	102.4	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD		1.64	1.7%		VALUE LINE		1786
Current Assets		131.5	122.5	202.7	203.0	205.2	204.4	203.5	203.5	203.5	RECENT PRICE		125.37	P/E RATIO		33.6	RELATIVE P/E RATIO		33.9	DIVIDEND YIELD							

[illegible]

High: 24.1

Low: 16.7

Lowest 3620

Lowest 727/727

Lowest 710/20

1.33 x Dividends p sh

divided by Internal Rate

Relative Price Strength

Options: 611

Shaded area indicates recession

Percent

Shares

traded

2020/4

2005/6

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

8.93

8.72

8.10

8.88

9.90

10.82

11.05

12.00

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14.53

14.72

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86

102

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Company Name	AMERICAN AMERICAN ARTESIAN / CALIFORNI ESSENTIAL MIDDLESEX / SIW GROU THE YORK													
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%						