
EXHIBIT Q

**FAIR MARKET VALUE APPRAISAL – GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC**

**LIMERICK TOWNSHIP
SANITARY WASTEWATER COLLECTION
AND TREATMENT SYSTEM ASSETS**

FAIR MARKET VALUE APPRAISAL

AT

DECEMBER 31, 2016

Prepared by:

**GANNETT FLEMING
VALUATION AND RATE CONSULTANTS, LLC**



Valley Forge, Pennsylvania



*Excellence Delivered **As Promised***

April 21, 2017

VIA EMAIL

Mr. William C. Packer
Regional Controller
Aqua Pennsylvania, Inc.
762 W. Lancaster Ave
Bryn Mawr, PA 19010

Re: Fair Market Value Appraisal

Dear Mr. Packer:

In accordance with your request, we have prepared a fair market value appraisal of Limerick Township's sanitary wastewater collection and treatment system assets ("Wastewater System") as of December 31, 2016.

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 December 31, 2016 is \$80,098,000 (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 six methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, DCF Method (market multiple discounted cash flow method and the capitalization discounted cash flow method), Market Multiples Method, and the Selected Transactions Method.

The attached narrative appraisal, present our findings and conclusions regarding the fair market value of the Wastewater System's assets of December 31, 2016. The report describes the valuation methodologies employed and the Exhibits that present the valuation results.

Gannett Fleming Valuation and Rate Consultants, LLC

P.O. Box 80794 • Valley Forge, PA 19484-0794 | 1010 Adams Avenue • Audubon, PA 19403-2402
t: 610.650.8101 • f: 610.650.8190
www.gannettfleming.com

Mr. William C. Packer
Bryn Mawr, PA 19010

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April 21, 2017

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	\$86,086,756
Income Approach	75,204,407
Market Approach	79,002,980

We thank Aqua 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, present our findings and conclusions regarding the fair market value of the sanitary wastewater collection and treatment system assets of Limerick Township as of December 31, 2016. The report describes the valuation methodologies employed and the Exhibits that present the valuation results. Based upon the analyses, we believe the fair market value of the sanitary wastewater collection and treatment system assets of Limerick Township is \$80.1 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 \$75.2 million to \$86.1 million. However, most of the appropriate indicated values approximated \$80.1 million.

Description of the Assignment. Gannett Fleming Valuation and Rate Consultants, LLC was retained by Aqua Pennsylvania Wastewater, Inc. (“Aqua”) to estimate the fair market value of Limerick Township’s sanitary wastewater collection and treatment system assets (“Wastewater System”) as of December 31, 2016.

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

As stated, the standard of value for this engagement is fair market value. The premise of value is 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 Aqua Pennsylvania Wastewater, Inc. The intended users of the valuation are Aqua Pennsylvania Wastewater, Inc. and the Pennsylvania Public Utility Commission.

Extraordinary Assumptions. There were no extraordinary assumptions required for this appraisal. We accepted all information and data provided by the Wastewater System and Aqua 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.

Site Inspection. We viewed or observed the Wastewater System's facilities on January 24, 2017. We also relied on Pennoni Associates Inc.'s engineering assessment of the Wastewater System's facilities report, "Limerick Township Sewerage Facilities Engineering Assessment and

Original Cost” (dated March 31, 2017), provided by the Township and Aqua 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:

Pennoni Associates Inc.’s report, “Limerick Township Sewerage Facilities Engineering Assessment and Original Cost,” dated March 31, 2017

Pennoni Associates Inc.’s Engineering Assessment related files (PDF and Excel)

Limerick Township provided electronic files (PDF and Excel)

Wastewater System’s Customer data

Limerick Township’s Audited Financials, for the years 2011 - 2015

Limerick Township’s Annual budget, for the years 2016 and 2017.

Limerick Township’s Comprehensive Plan

Limerick Township’s Chapter 94 Reports, 2015

Limerick Township’s Act 537 Plans

The Delaware Valley Regional Planning Commission Analytical Data Reports

Blue Chip Financial Forecasts

US Census Bureau, various data files

Value Line Investment Survey

S&P Research Insight

Description of Limerick Township. Limerick Township (“Township”) is over 22 square miles and is located along the eastern side of the Schuylkill River in Montgomery County, Pennsylvania and within the Philadelphia Metropolitan Statistical Area. The Township has the second largest land mass of Montgomery County’s 62 municipalities and was the 15th most

populous with 18,798 people (2015). King of Prussia, a major employment and retail center, is a 25 minute drive to the east of Township, center City Philadelphia is positioned roughly 45 minutes to the east, and the Philadelphia Premium Outlets, a 150 store open-air outlet mall, is located in the Township. Due to these nearby centers of employment and commercial activity, the Township's population has been increasing. U.S. Route 422 runs through the Township and is a key reason for the Township's active real estate market. Nearby Montgomery County communities include Royersford Borough, Upper Providence, Upper Frederick, Perkiomen Townships, Lower Pottsgrove and both East Coventry and East Vincent Townships, Chester County, are across the Schuylkill River.

The major services provided by the Township include general administration, public works (highways and streets and sewer), public safety (police and fire), planning and zoning, culture and recreation and community development. Although the Township has historically been considered agrarian, due to the large amount of farmland and forested lands in the Township, it is being transformed as a result of the growth of subdivisions and commercial centers replacing the agrarian open spaces.

The Township is one of 62 municipalities in Montgomery County and is one of the fastest growing in the county. According to U.S. Census figures, Township population grew nearly 34% from 2000 to 2010, while population in Pennsylvania grew 3.4% and 6.6% in Montgomery County. The Township and surrounding region is rapidly transitioning from a rural area to a more suburban area.

Description of the Wastewater System. The Township owns, operates and maintains the Wastewater System. The Wastewater System is a sewage collection and transmission system and has two wastewater treatment facilities. The Wastewater System currently provides service to

over two-thirds of the Township. The original collection system was constructed in 1974 to service a portion of the Township's neighboring Royersford Borough. A majority of the Wastewater System was originally constructed between 1986 and 1992 and has since been extended to accommodate additional developments as needed.

The Wastewater System is divided into two service areas, the Possum Hollow Service area and the King Road Service area, and each area has its own wastewater treatment plant ("WWTP"). The Wastewater System has interceptors ranging in size from 8-inch to 36-inch and 17 pump stations and the Wastewater System's total wastewater treatment capacity is 2.4 MGD. Most of the Wastewater System's gravity system is construct with PVC pipe while a majority of the force mains are made of ductile iron pipe. The Wastewater System's collection system totals approximately 533,280 feet (101 miles) of pipe. The Possum Hollow Service area accounts for approximately 89,760 feet (17 miles) of this pipe; while the King Road Service area accounts for the remaining 443,530 feet (84 miles) of pipe.

The King Road service area serves approximately 10.8 square miles, as of December 31, 2015, consisted of the approximately 6,662 EDUs, includes 13 pump stations and the WWTP has a permitted capacity of 1.7 MGD. The treatment process at the King Road WWTP includes: a pretreatment process contained within and around the headworks building consisting of a mechanical fine screen, aerated grit chamber, and grit classifier; an AcroMod activated sludge biological treatment system that includes two-stage aeration and clarification; in-line ultraviolet disinfection and effluent metering; two aerobic sludge digesters and holding tanks converted from the former treatment units; and sludge mechanically thickened by a rotary drum thickener and then hauled off-site.

The Possum Hollow service area is approximately 4.6 square miles, consists of approximately 1,606 EDUs as of December 31, 2015, includes four pump stations, and the WWTP has a permitted capacity of 0.7 MGD. The treatment process at the includes: a pretreatment process contained within and around the pre-engineered steel headworks building consisting of a mechanical fine screen, aerated chamber, and grit classifier; an AeroMod activated sludge biological treatment system that includes two-stage aeration, clarification, and aerobic sludge digestion; in-line ultraviolet disinfection and effluent metering; and standby power and support facilities, located in and around the pre-engineered steel service building.

All sludge generated at the two WWTPs are hauled away as thickened liquid to the Pottstown Wastewater Treatment Plant for further processing before final disposal. The treated effluent from both the King Road WWTP and the Possum Hollow WWTP is discharged to the Schuylkill River. There are a few sections of the Township within the Wastewater System's service area that are still on-lot septic system, but the majority of the on-lot septic systems are beyond the Wastewater System's service area. For planning purposes, the Township's designated areas of growth fall almost entirely within the Wastewater System's service area.

The Township utilizes two enterprise funds, the Sewer Operating Fund and the Sewer Capital Fund, to account for the Wastewater System's operations. The Sewer Operating Fund provides for the day-to-day operations of the Wastewater System and the Sewer Capital Fund collects the sewer connection fees paid by developers to be used for future capital projects. The Township's audited financial statements for the year ended December 31, 2015 show (Exhibit 1) the Wastewater System had operating revenues of \$3.899 million and was capitalized with \$43.502 million of capital: including \$7.345 million of long-term debt (including current maturities); and \$36.157 million of fund equity. At the same point in time, the Wastewater System had total assets

of \$43.557 million, including \$36.114 total net utility plant.

The Wastewater System is exempt from Pennsylvania Public utility Commission (“PUC”) regulation as a municipal utility. Wastewater System’s rate requirements are established by the needed funds to run the system and by the contractual requirements of their debt instruments. Most municipalities, including Wastewater System, use a Government Accounting Standards Board (“GASB”) process of accounting 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 tax payers. 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.

In 2015 the Wastewater System provided service to 5,416 customers, had flows of 368.650 million gallons and serviced approximately 8,268 Equivalent Dwelling Units (“EDU”). We estimate in 2016 (12/31/16) the Wastewater System was providing service to 5,433 customers (Exhibit 2, Table 2.1 and Table 2.3), to 8,387 EDUs.

We further estimate the Wastewater System’s 5,433 customers at 12/31/16 include 4,881 residential customers, 210 apartment customers, 315 commercial customers, 23 school and church customers, and four public customers. The Wastewater System's business does not require large amounts of working capital. The Wastewater System is not dependent on industrial customers.

Demographics and Growth for the Wastewater System. As shown on Page 1 of 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 time period, Montgomery County's population grew 6.6% and the Township's population grew 33.5% (Exhibit 3, Page 1, Table 3.2). The Township's extraordinary population growth was ranked 89 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, Township's population growth is projected to be more than twice 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 15 percent or 85th percentile of the 369 municipalities analyzed by DVRPC. Similarly, Page 2 of Exhibit 3, Table 3.4 shows Township's employment growth is projected to be about twice the growth rate projected for the Nine DVRPC Counties during each five year period from 2015 through 2045. The aforementioned projected large increases in Township's population and employment indicates a greater future demand for the Wastewater System's services.

In 2016, the Township's total population is approximately 19,009 people (Exhibit 2, Table

2.1). There are 7,571 household units in the Township and the ratio of people in households to households is 2.51 persons per household. We estimate in 2016 the Wastewater System is providing service to 5,091 residential units (accounts Residential and Apartments). The above-mentioned indicates the Wastewater System currently provides service to about 67% of Township's households ($5,091 \div 7,571$).

The Wastewater System's service area density is 3.5 people per customer based on an estimated population of 19,009 and 5,433 customers. The Wastewater System's service area density is equal to the 3.5 per customer density of water and wastewater systems (see Table 2 in this report). The combination of Township's higher than average projected population growth and the Township's planned focus of that growth primarily in the Wastewater System service area indicates appreciably higher future growth for the Wastewater System.

HISTORY AND NATURE OF THE BUSINESS

Economic Outlook. 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 December 31, 2016. In particular, we focused on the forecasts and economic commentary presented in Blue Chip Financial Forecasts in the December 1, 2016 edition. Some of these economic forecasts are presented in Table 1.

<u>Economic Indicators</u>			
	<u>Latest Qtr</u>	<u>Consensus Forecasts</u>	
	<u>3Q 2016</u>	<u>4Q 2016</u>	<u>1Q 2017</u>
<u>Key Assumptions</u>			
Real GDP	2.9	2.3	2.2
GDP Price Index	1.5	2.1	1.9
Consumer Price Index	1.6	2.8	2.1
<u>Interest Rates</u>			
3-mo. Treasury Bills	0.30	0.4	0.6
10 Year Notes	1.56	2.1	2.3
30 Year Notes	2.28	2.8	3.0
Aaa Corporate Bond Yield	3.34	3.8	4.0
Baa Corporate Bond Yield	4.26	4.7	4.9
State & Local Bonds	2.87	3.4	3.6
Home Mortgage Rate	3.45	3.8	4.0

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 1,891 U.S. Businesses with an SIC code of 4952.

The wastewater utility industry is a fragmented industry, although not as fragmented as the

water supply industry. According to the U.S. Environmental Protection Agency's ("EPA") most recent survey of publicly-owned wastewater treatment facilities in 2008, there are approximately 15,000 such facilities in the nation, serving approximately 74% of the U.S. population. Eighty percent of domestic wastewater systems are government owned rather than IOUs. Currently, there are no wastewater utility companies that have actively traded stock.

A comparative industry to the wastewater utility industry is the water supply industry. The water supply industry has a 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 8,971 U.S. Businesses with an 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. (83% 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, there are only about 10 investor owned water utility companies with publicly traded stock in the U.S.

The wastewater utility industry and water 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 the replace the aging infrastructure of many systems, has moved the wastewater and water 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

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.

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 Wastewater System. However, as a medium to small 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 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 Comparable Group were selected based upon: (1) the availability of financial information; (2) a December 31, 2016 market value of common stock, the product of multiplying the closing stock price by the number of common shares outstanding, greater than \$75.0 million; (3) inclusion in the Standard and Poor's Research Insight database; (4) are not currently the subject of an acquisition; and (5) with a Global Industry Classification Standard (“GICS”) of 55104010 (i.e., Water Utility). The nine Comparable Group that met the criteria for selection are listed in Table 2.

<u>Latest Size Statistics For the Year 2016</u>				
	<u>Revenues</u> (Mill. \$)	<u>Customers</u>	<u>Population</u>	<u>Customer Density</u>
Limerick Township Wastewater System's Assets	<u>\$4.419</u>	<u>5,433</u>	<u>19,009</u>	<u>3.5</u>
<u>Comparable Group</u>				
American States Water Co	\$439.402	283,997	1,000,000	3.5
American Water Works Co Inc	3,282.595	3,252,691	12,100,000	3.7
Aqua America Inc	820.143	920,381	2,890,800	3.1
Artesian Resources -CL A	78.422	81,400	301,000	3.7
California Water Service Gp	596.866	508,404	1,600,000	3.1
Connecticut Water Svc Inc	98.027	123,633	400,000	3.2
Middlesex Water Co	132.023	108,720	390,000	3.6
SJW Corp	348.013	241,000	1,089,000	4.5
York Water Co	<u>47.316</u>	<u>66,000</u>	<u>194,000</u>	<u>2.9</u>
Median	<u>\$348.013</u>	<u>241,000</u>	<u>1,000,000</u>	<u>3.5</u>

Table 2

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

Financial Review. We conducted a financial review that considered the financial and operating statistics for the Wastewater System and the Comparable Group for the three-year

period, 2013 to 2015.³ 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 if they included a provision for taxes and their financial results would have been healthier if they were required to pay taxes and made provisions for taxes in their rates. Therefore, the results of the Wastewater System's historical financial performance, as measure by various ratios and coverages, should be viewed with this knowledge.

Financial Benchmark Analysis. To gain insight into the risk differences between the Wastewater System and the Comparable Group, we reviewed financial ratios and coverages. Unfortunately, there is no single measure that best indicates investment risk from a common stockholder's perspective. However, from a creditor's viewpoint, the best measure of investment

³ 2015 is the most recent year that audited financial statements are available for the Wastewater System and the Comparison Group.

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 2013-2015, the Wastewater System's financial benchmark ratios show (Exhibit 4) higher investment risk than the Comparable Group based on coverage but lower investment risk than the Comparable Group based on 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 large size difference between the Wastewater System and the Comparable Group. As shown on Table 2, the Wastewater System is many times smaller than the Comparable Group.

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

Exhibit 5, Table 5.1, provides an illustration which shows company size has been inversely related to returns and the volatility of their common stock. Specifically, Ibbotson Associates sorted 2,972 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 December 31, 2016 ranged from \$260 million to \$13,314 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 considering the fact that the largest company in quartile 4 had a market value of \$550 million.

The change in risk adjusted common stock return rate between quartile 3 and quartile 4 (column J) is 91 basis points. The results of the illustration shown on Exhibit 5 suggests the Wastewater System's common equity cost rate could be about 91 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 more risky over a long period of time than larger company stocks. This makes sense due to the various advantages that larger companies have over smaller companies. For example, small capitalized firms generally have less access to capital and, overall, not as many financial resources. Further, small capitalized stocks have lower trading liquidity than larger ones.

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. As a result of this size preference, smaller bond issuers often pay an interest 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, in reality all things are seldom equal as shown by the array of market multiples for the companies that comprise the Comparable Group (Exhibit 10, page 2). As shown on

Exhibit 10, 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 and treatment system. 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 73% of their gross property, plant and equipment remaining undepreciated while 73% of the Comparable Group's gross property, plant and equipment remained undepreciated.

Property Plant and Equipment Analysis for Contributions. Most regulatory commissions determine rates for utilities based on a cost of service formula reflective of gross plant, property and equipment less accumulated depreciation (i.e., net property, plant and equipment) being roughly equal to investor provided capital (i.e., debt and equity capital) and this is a cornerstone of utility regulatory theory. Further, 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 28% (100% - 72%) differences 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). Concerning the difference between the Comparable Group's net property, plant and equipment and the Comparable Group's investor provided capital, we believe the net property, plant and equipment contains customer contributions. This belief is based on the 28% difference in the Comparable Group's net property, plant and equipment and the Comparable Group's investor provided capital reviewed.

We did not analyze the Wastewater System's property, plant and equipment for customer contributions because customer contributions are 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 next four years (2017-2020), the Wastewater System estimates it will require \$1.781 million of capital expenditures. Over the last four years, the Comparable Group had annual capital expenditures of about 7% of net plant (Exhibit 6, page 2, Table 6.3). During this same time, 2012-15, the Wastewater System had annual capital expenditures that averaged less than 1% of net plant (based upon reported net plant). Therefore, the Wastewater System historical capital spending was substantially less than the Comparable Group's average.

Growth Rate Analyses. Higher growth rates are an indication of less risk. A review of the growth rates in revenue, operating income plus depreciation and operating income, reveal that the Wastewater System has been growing faster than the Comparable Group (Exhibit 6, page 4, Table 6.4) over the last three years. Despite the natural market limitations that exist in the Wastewater System's finite service territory, we believe the prospective gap in growth rates will increase due to the combination of the Township's higher than average projected population growth (see section "Demographics and Growth for the Wastewater System" in this report) and the change in rates for service under new ownership.

Prospectively, the Comparable Group may be able to enhance their growth rates through the continued acquisition of water and wastewater systems outside their existing service territory.

Profit Margin Analyses. Higher profit margins are an indication of less risk. We compared earnings before interest and taxes ("EBIT") to revenues to see how successful the

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

VALUATION

The purpose of this valuation is to comply with 66 Pa. C.S. Section 1329 (Valuation of Acquired Water and Wastewater Systems) and conduct a fair market value appraisal of the Wastewater System's assets as of December 31, 2016 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 measure value by determining the amount of money required to replace the future service capability of an asset. The cost approach is based on the premise that an informed purchaser will not pay more for a property than the cost of constructing an equally desirable substitute property, minus applicable depreciation, and assuming no undue delay.

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

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

Under the trended cost method, the trended original cost (“TOC”) measures the replacement 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 replacement cost new of property and is sometimes used as a substitute for replacement cost method and may be considered a form of the replacement cost method, though not as precise.

The reproduction cost method begins with determining the reproduction cost new 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 reproduction cost new method and the RCN 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 profit⁴ are applied to the inventory listing in order to determine the reproduction cost new and to determine the RCN.

The reproduction cost new 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, RCN, and reproduction cost new), 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.

⁴ 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 5% to 15% of infrastructure asset total costs.

Depreciation represents the loss in property value from: physical deterioration; functional obsolescence; and external obsolescence. The accrued depreciation represents the sum of the annual depreciation amounts that would have been charged for depreciation at a point in time. Accrued depreciation is a calculated amount that would be in the book reserve account at a point in time using the current depreciation parameters (i.e., average service life). The average service lives of depreciable assets are based on the materials used for construction and how long the depreciable assets are likely to meet service demands.

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

The Original Cost Method. For this report, the Wastewater System and Aqua provided us a copy of the “Limerick Township Sewerage Facilities Engineering Assessment and Original Cost” report and related files prepared by Pennoni Associates Inc. (“Engineering Assessment”). We utilized the Engineering Assessment and calculated the Original Cost and Related Accrued Depreciation of the Wastewater System as of December 31, 2016 (“OCNLD Study”) and present that separately. The OCNLD Study presents descriptions of the methods used in the determination of original cost and the calculation of accrued depreciation and detail tabulations of the original cost and related accrued depreciation of the Wastewater System. The OCNLD Study includes an original cost inventory of the Wastewater System’s utility plant determined from a detailed analysis of the Engineering Assessment, and related files, and does not reflect the original source of funding for any of the Wastewater System’s assets.

The results of the OCNLD Study established that the OCN of the Wastewater System's utility plant in service as of December 31, 2016 was not less than \$63.5 million (\$63,480,402 rounded). The OCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$17.3 million (\$17,326,535 rounded) as of December 31, 2016. After factoring in the OCNLD Study's accrued depreciation reserve, the OCNLD of Wastewater System's utility plant in service as of December 31, 2016 was determined to be \$46.2 million ($\$63,480,402 - \$17,326,535 = \$46,153,867$ rounded).

The Replacement Cost Method. We utilized the OCN to calculate the trended original cost measures, or the replacement cost of the depreciable assets (RCN), by multiplying the OCN by specific cost indices. This result of this analysis is shown in the Replacement Cost and Related Accrued Depreciation of the Wastewater System as of December 31, 2016 ("RCNLD Study") and present that with the OCNLD Study. The RCNLD Study presents descriptions of the methods used in the detailed calculations of replacement cost and accrued depreciation, and the sources of the index numbers used in the development of the replacement cost new of the Wastewater System's depreciable assets. The RCNLD Study includes a replacement cost inventory of the Wastewater System's utility plant determined from a detailed analysis of the OCNLD Study and does not reflect the original source of funding for any of the Wastewater System's assets.

The results of the RCNLD Study established that the RCN of the Wastewater System's utility plant in service as of December 31, 2016 was not less than \$124.8 million (\$124,772,705 rounded). The RCNLD Study also determined a theoretical calculated accrued depreciation reserve of the utility plant in service of \$38.7 million (\$38,685,949 rounded) as of December 31, 2016. After factoring in the RCNLD Study's accrued depreciation reserve, the RCNLD of Wastewater System's utility plant in service as of December 31, 2016 was determined to be \$86.1

million ($\$124,772,705 - \$38,685,949 = \$86,086,756$ rounded).

The Wastewater System's RCNLD of \$86.1 million (\$86,086,756 rounded) is used as the Cost Approach as part of our fair market value determination for the Wastewater System for the reasons specified in the next section of this report.

Benchmark Metrics. Besides providing an indication of value based upon a cost method, the OCN and OCNLD also provides 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 1.47-times (Exhibit 10, page 2) higher than their OCNLD or net property, plant and equipment. Similarly, the Comparable Group's Enterprise Value is currently 1.08-times (Exhibit 10, page 2) higher than their OCN or gross property, plant and equipment.

The above-mentioned property, plant and equipment "multiples" understate the multiple applicable to the Wastewater System because the Comparable Group's property, plant and equipment includes assets that were originally financed with customer contributions. Subtracting customer contributions from the Comparable Group's property, plant and equipment (Exhibit 10, page 3) results in adjusted multiples of 1.96-times OCNLD and 1.44-times OCN for the Comparable Group.

Multiplying the Wastewater System's OCN of \$63.5 million by the Comparable Group's 1.08-times OCN multiple or the 1.44-times contributions adjusted OCN multiple indicates a range of market value of \$68.6 million to \$91.6 million for the Wastewater System, similar to the RCNLD of \$86.1 million. Further, multiplying the Wastewater System's OCNLD of \$46.2 million by the Comparable Group's 1.47-times OCNLD multiple or the 1.96-times contributions adjusted OCNLD multiple indicates a range of market value of \$67.8 million to \$90.7 million for the Wastewater System, similar to the RCNLD of \$86.1 million.

The aforementioned range of market value for the Wastewater System are not a substitute for an appraisal. However, the referenced range of market value for the Wastewater System are meaningful metrics 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 the value indicated by the OCNLD method of \$46.2 million to be an outlier. Therefore, the results of the RCNLD method form the basis for our Cost Approach conclusion. As stated previously, the Wastewater System's RCNLD of \$86.1 million (\$86,086,756 rounded) 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 municipal revenue bond yield on December 31, 2016 of 4.37%. The appropriate IOU discount rate is the current pre-tax overall cost of capital on December 31, 2016 and ranges from 6.63% to 7.99%. 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 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 an 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.

The Capitalization of Earnings Method. We began the capitalization of earning 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. The development of Wastewater System's Debt Free Net Cash Flow begins on Exhibit 1 and ends on Exhibit 7.

Differences in accounting practices exist between GASB and FASB because there are differences in their purpose. That is, the GASB's motivation is to make sure government entities are accountable for the money they receive from the public or taxpayers, while the FASB's focus is to help investors and creditors make decisions. These differences in accounting objectives between GASB 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 our restatement of some of the Wastewater System's financial information contained in their financial statements and budget reports so it is more consistent with the Comparable Group and more practical for valuation purposes. As stated previously, the Township utilizes two enterprise funds, the Sewer Operating Fund and the Sewer Capital Fund, to account for the Wastewater System's operations. Exhibit 1 shows the combined reported financial results for the Sewer Operating Fund and the Sewer Capital Fund to create a single

Wastewater System's operation. As a result of this change we developed the Wastewater System's Debt Free Net Cash Flow on Exhibit 7.

During our analysis we found the Wastewater System's tap fees represented an unusually large percentage of total operating revenues and EBIT, averaging 10% and 43%, respectively, during the period 2012 to 2016. In 2017, tap fees represent 27% of total operating revenues and 62% of EBIT. This unusually large contribution of tap fees to revenues and EBIT indicates that recent sewer rental rates are possibly lower than could be cost justified on a standalone basis.

The capitalization of earnings method begins with an estimate of the income or cash flow producing capabilities of the business (Exhibit 7). Specifically, our capitalization of earnings method capitalizes Wastewater System's current (2017) 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 discount rate of 4.37% based on the 12/31/16 municipal bond yield (Exhibit 7, line 24) as a capitalization rate. We also did a second capitalization of earnings calculation based on a 3.37% capitalization rate (Exhibit 7, line 27), or 100-basis points below the current level to reflect the unique population growth projected for the Wastewater System's because we assumed the Wastewater System's total growth will be at least 1.0% (100-basis points).

We computed the Wastewater System's capitalization of earnings method indicated 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. Essentially, we considered two ranges of growth in the capitalization of earnings method, no growth and 1% growth. However, based upon our quantitative and qualitative analysis, and the

projected population growth, we believe the 1% growth scenario is the most probable for the Wastewater System based on current ownership and operations.

Because the Wastewater System's tap fees comprise a large percentage of total operating revenues and EBIT in 2017 we also normalized tap fees to be equal to the average 2017-2021 tap fee found in the Engineers Assessment. Exhibit 7 shows the results of the capitalization of earnings method. For the Wastewater System, the capitalization of earnings method using a 4.37% capitalization rate (no growth) indicates a value of \$48.6 million with normalized tap fees and \$65.9 million on budgeted 2017 results. The capitalization of earnings method using a 3.37% capitalization rate (growth) indicates a value of \$63.1 million with normalized tap fees and \$85.5 million based on budgeted 2017 results. Collectively, for Wastewater System, we believe the 1% growth scenario is the most probable result based on current ownership and operations and therefore, the capitalization of earnings method suggests a value of \$74.3 million (the average of \$63.1 million and \$85.5 million) based on 2017 operations.

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 8 and 9.

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 13 years. We use two different assumptions for the Wastewater System's future operations in the DCF methods: MUNI ownership shown on Exhibit 8 and IOU ownership shown on Exhibit 9.

Under the MUNI ownership the discount rate is the current 4.37% municipal revenue bond yield and under the IOU ownership the discount rate is the current pre-tax overall cost of capital, reflecting the upper and lower range of the pre-tax overall cost of capital for the Comparable Group of 6.63% to 7.99%.. For the Capitalization DCF, the capitalization rate reflects a scenario of no additional growth (i.e., discount rate = capitalization rate) and a scenario of 2% additional growth (i.e., discount rate – 2% growth = capitalization rate).

Based upon our quantitative and qualitative analysis and the projected population growth, we believe a 1% natural growth rate will occur. Additionally, we believe expenses increases (2%) will result in minimal rate increases post-2021, resulting in the probable growth scenario being 2% for the Wastewater System with MUNI or IOU ownership.

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 24.7-times and 15.8-times, respectively. We computed the Capitalization DCF terminal value by dividing the projected Debt Free Net Cash Flow by the capitalization factor. The capitalization factor is equal to the discount rate minus assumed growth in projected Debt Free Net Cash Flow.

Exhibit 8 shows the results of the DCF method under the MUNI ownership scenario. The results of the Capitalization DCF shown on Exhibit 8 show a range of value for the Wastewater System of \$70.5 million to \$107.4 million. The results of the Market Multiple DCF shown on Exhibit 8 show a value of \$70.6 million. Collectively, the DCF method based on the MUNI ownership scenario indicates a value of \$89.0 million for the Wastewater System based on the probable 2% growth assumption.

Exhibit 9 shows the results of the DCF method under the IOU ownership scenario. The results of the Capitalization DCF shown on Exhibit 9 show a range of value for Wastewater System

of \$38.0 million to \$57.0. The results of the Market Multiple DCF shown on Exhibit 9 show a range of value of \$65.8 million to \$75.2 million. Collectively, the DCF method based on the IOU ownership scenario and a 2% growth assumption indicates a value of \$61.4 million for the Wastewater System.

The \$74.3 million result of the capitalization of earnings method falls with the range found for the DCF method based on the MUNI ownership scenario, \$89.0 million, and the DCF method based on the IOU, \$61.4 million. Collectively, the capitalization of earnings method and the DCF method indicate a value of \$75.2 million for the Wastewater System 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 10. For the Comparable Group, the Market Multiples were calculated as of 12/31/16 based on the latest twelve months of financial data available at the appraisal date.

We used the Comparable Group’s Enterprise Value at December 31, 2016 and calculated Market Multiples of: revenue (“Revenue”); EBITDA; EBIT; gross property plant and equipment (“GPPE”); net property plant and equipment (“NPPE”); investor provided capital (“ICAP”); utility customers (“Customers”); and population of the area served (“Population”).

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

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 Comparable Group are much larger than the Wastewater System. The relative size difference between the Comparable Group and Wastewater System suggests that the risk to the investors of the Wastewater System is greater than the Comparable Group. However, based upon our quantitative and qualitative analysis, we concluded that the Wastewater System has slightly less risk and also more growth based on their projected population.

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 small size is slightly greater than the lower risk found during our quantitative and qualitative analysis. This offset in risk was assumed to result in the Wastewater System being 5% riskier than the Comparable Group and produces a 95% (100% - 5%) base risk adjustment to the Comparable Group's Market Multiples. We applied the 95% base risk adjustment to all financial multiples. For example, the Comparable Group's ICAP multiple was multiplied by 95% 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 and for a 1% higher growth rate to produce multiples applicable to the Wastewater System (Exhibit 10, 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 10, page 3) financed with contributions because customer contributions should not be part of this valuation process. The Comparable Group's Market Multiples of Customers and Population were adjusted for the higher growth potential of the Wastewater System.

The net risk adjustments to the Comparable Group's Market Multiples are shown on page 1 of Exhibit 10. The adjustments to the Comparable Group's Market Multiples are: 95% of ICAP (riskier), 127% of GPPE (riskier and contributions), 127% of NPPE (riskier and contributions), 101% of Revenue (riskier and higher growth); 111% of EBIT and 120% EBITDA (riskier and higher growth); and 200% of Customers and Population (higher customer growth).

As shown on page 1 of Exhibit 10, the market multiples method indicated values based on Revenue, EBIT and EBITDA (collectivity called "Income Statement Items") are far below the

Wastewater System's market multiples method indicated values based ICAP, GPPE and NPPE (collectivity called "Capital Items"), and those based on Customers and Population (collectivity called "Demographics Items"). We attribute this to the fact the Wastewater System's dollars of Revenue, EBIT and EBITDA do not reflect any provision for taxes while the multiples for the Comparable Group do. Consequently, we do not believe the results of the multiples of Revenue, EBIT and EBITDA are meaningful and should not be used.

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 10, page 1). The results of the market multiples method (Exhibit 10, page 1) show a range of value for the Wastewater System of \$73.8 million to \$93.7 million and collectively, indicated value of \$83.0 million based on the meaningful Market Multiples.

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

The selected transactions method provides a valuation of a business, or assets, at the time the acquisition of that business was completed, rather than the appraisal date market value (12/31/16). The change in the Comparable Group’s market multiples of NPPE and ICAP, shown in Figure 1, shows the change in market valuation over the last 72 months. In Figure 1 the Comparable Group’s market multiples of NPPE and ICAP were indexed to 12/31/16 valuation multiples so that the 12/31/16 valuation multiples has an index value of 100.

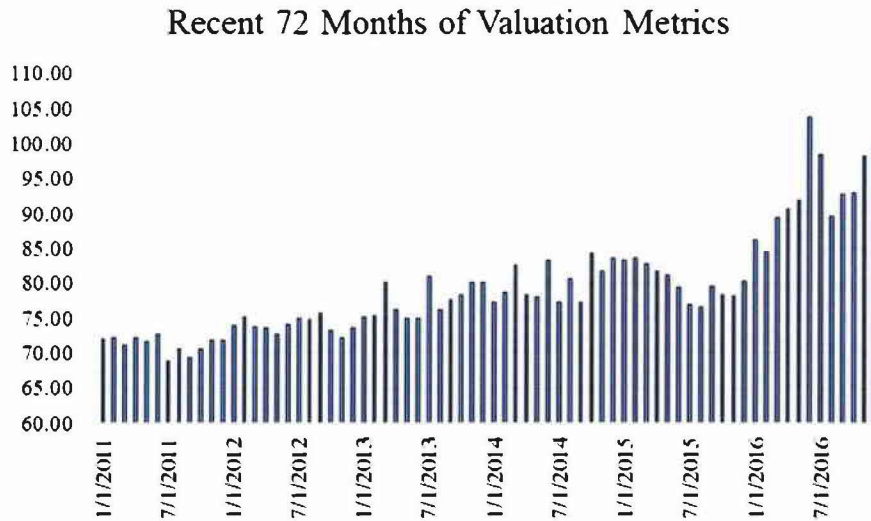


Figure 1

The Comparable Group’s appraisal date (12/31/16) valuation multiples are 15% higher than 2016’s lowest levels and 4% below 2016’s highest levels. The Comparable Group’s 12/31/16 valuation multiples are 23% to 16% higher than 2015’s, are 23% to 16% higher than 2014’s, are 25% to 19% higher than 2013’s, are 28% to 24% higher than 2013’s and 31% to 24% higher than the years 2011 - 2012.

Because of the recent rapid rise in valuation multiples over the last 12 months we limited our search for selected transactions to: (1) those that occurred in 2016; (2) purchases of water or sewer systems; (3) assets being purchased; and (4) those that did not discount customer

contributions in the valuation. The selected transactions that met the stated selection criteria are shown on Exhibit 11.

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: Revenue; EBITDA; EBIT; Customers; and Population. As shown on Exhibit 11, the selected transactions method indicated values based on the Income Statement Items are far below the Wastewater System's selected transactions method indicated values based on Capital Items and those based on Demographics Items. We attribute this to the fact the selling utilities' dollars of Income Statement Items do not reflect any provision for taxes. Consequently, we do not believe the results of the multiples of Income Statement Items are meaningful.

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 11). The results of the selected transactions method (Exhibit 11) show a range of value for the Wastewater System of \$41.7 million to \$108.3 million and collectively, indicated value of \$77.0 million based on the significant selected transactions multiples.

The results of the market multiples method shown on Exhibit 10 show a range of value for the Wastewater System of \$73.8 million to \$93.7 million and collectively, indicated value of \$83.0 million. The results of the selected transactions method shown on Exhibit 11 show a range of value of \$41.7 million to \$108.3 million and together, indicated value of \$77.0 million. Based on the

aforesaid, the Market Approach to valuation indicates a value of \$79.0 million for the Wastewater System based predominantly on the results of the selected transactions method.

Conclusion. We summarize our findings for the Wastewater System on Exhibit 12. Our findings for the Wastewater System is based on the Cost, Market and Income Approaches to valuation. We used six methods under the Cost, Market and Income Approaches to valuation: Original Cost Method, Replacement Cost Method, Capitalization of Earnings Method, DCF Method (market multiple discounted cash flow method and the 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 the replacement cost method forms 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, we have given the results of each approach equal weight (i.e., one-third weighting each) and calculate our estimate of the fair market value based upon the aforesaid weightings. The results of our analyses, shown on Exhibit 12, indicate a range of value for the Wastewater System of \$75.2 million to \$86.1 million and collectively, based upon our assigned weightings, indicate a fair market value of \$80,098,000 (rounded) for the Wastewater System.

COMPLIANCE & APPRAISAL CERTIFICATION

APPENDIX A - QUALIFICATIONS

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2016-2017**

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 Aqua Pennsylvania Wastewater, Inc. The intended users of the valuation are Aqua Pennsylvania Wastewater, Inc. and the Pennsylvania Public Utility Commission.

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

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

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

Limerick Township Wastewater System's asset include related assets necessary to run the System; all personal property and fixed assets, including all Equipment and Machinery, and auxiliary equipment and plant equipment. Limerick Township Wastewater System's asset include multiple collectors and interceptors ranging in size from 8-inch to 36-inch, 17 dedicated sewage pumping stations, three decommissioned pump stations, a 1.7 MGD wastewater treatment plant (King Road) and a 0.7 MGD wastewater treatment plant (Possum Hollow) and approximately 100 miles of gravity sewers and force mains.

In 2015 there were 6,662 EDUs that discharged to the King's Road Treatment Plant and 1,606 EDUs that flowed to the Possum Hollow Treatment Plant. There were 8,268 total Township EDUs in 2015. The average annual flow for the King Road Treatment Plant in 2015 was 0.807 MGD and for the Possum Hollow Treatment Plant the average flow in 2015 was 0.203 MGD. Both plants were well within their hydraulic limits of 1.7 MGD and 0.70 MGD respectively.

Limerick Township Wastewater System is divided into two service areas. The western portion of the Township, which includes the drainage basins for pump stations 1, 16, 17 and 18, flow to the Possum Hollow Treatment Plant. The eastern portion of the Township, which includes the drainage basins for pump stations 2,

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2016-2017

Fulfillment of Requirements for a Personal Property Appraisal and Report

3, 4, 5, 6, 7, 10, 12, 13, 14, 15 19 and 20, flow to the King Road Treatment Plant. The Township collects sanitary sewage in each service area and conveys it to the respective WWTP. A majority of the Township's sanitary sewer system was originally constructed between 1986 and 1992 and has since been extended to accommodate additional developments as needed. The sanitary sewer system consists of interceptors ranging in size from 8-inch to 36-inch and several pump stations. A majority of the gravity system is constructed of PVC pipe while a majority of the force mains are made of ductile iron pipe. The sanitary sewer collection system totals approximately 533,280 feet (101 miles) of pipe. The Possum Hollow Service area accounts for approximately 89,760 feet (17 miles) of this pipe; while the King Road Service area accounts for the remaining 443,530 feet (84 miles) of pipe. There are 2 former pump station buildings that are currently used for storage. There are 6 grinder pump systems maintained by the Township but are owned by the resident.

The overall assessment of the King Road and Possum Hollow Wastewater Treatment Plants is good, the headworks buildings for each WWTP will require replacement of some HVAC equipment in the near future.

Most of the Pump Stations are also in good condition. The construction of the Pump Station #6 upgrade is expected to be completed in 2017 and the Pump Station #3 upgrade is designed, however construction has been delayed due to the current sale of the system.

Gravity sewers and force mains are also in good condition. There is only one lining project in the Orchard Terrace area projected to be rehabilitated in 2020.

The property is in good condition based on physical inspections and reviews of operating and financial statements. The property is an operating wastewater system, the economics of which were analyzed from six years of financial statements which were incorporated into the income approach to value in this appraisal.

Limerick Township Wastewater System's land and land rights include land owned at King Road Treatment Plant, Possum Hollow Wastewater Treatment Plants and the Galie Property. Limerick Township Wastewater System's land and land rights also include multiple easements and rights-of-way necessary to operate the Wastewater System.

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2016-2017

Fulfillment of Requirements for a Personal Property Appraisal and Report

- **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 December 31, 2016 and the appraisal report date is April 2017.

- **Describe sufficient information to disclose to the client and any other intended users of the appraisal the scope of work used to develop the appraisal**

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

Cost Approach - The cost approach utilized the replacement cost method calculated by trending (trended cost method) the asset inventory developed by Gannett Fleming Valuation and Rate Consultants, LLC from its original cost new method. 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 replacement cost new. 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 were reduced annually by the accumulated depreciation to reflect the loss in the service value of the assets since being constructed.

Income Approach - The income approach utilized the capitalization of earning (cash flow) method and the discounted cash flow method. The capitalization of

Compliance with Uniform Standards of Professional Appraisal Practice (USPAP) 2016-2017

Fulfillment of Requirements for a Personal Property Appraisal and Report

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 publically traded corporations engaged in the same or a similar line of business as the Wastewater System. The market price data of these comparable publically traded corporations was used to calculate the market multiples for the comparable publically 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 calculated market multiples at the time of transaction (sale/purchase). The calculated market multiples determined by the market multiples method and the selected transaction method were then multiplied by the corresponding Wastewater System financial and operating statistic to produce an indicated value for the Wastewater System.

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

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

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

Not applicable.

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

Not applicable.

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2016-2017**

Fulfillment of Requirements for a Personal Property Appraisal and Report

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

See scope of work above.

- **State the use of the real estate existing as of the date of value and the use of the real estate reflected in the appraisal - when reporting an opinion of market value, describe the support and rationale for the appraiser's opinion of the highest and best use of the real estate**

Limerick Township Wastewater System's land and land rights include land owned at King Road Treatment Plant, Possum Hollow Wastewater Treatment Plants and the Galie Property. Limerick Township Wastewater System's land and land rights also include multiple easements and rights-of-way necessary to operate the Wastewater System. The Wastewater System's land and land rights were assumed to be used for the operation of the Wastewater System for the appraisal.

- **State and 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.

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2016-2017**

Fulfillment of Requirements for a Personal Property Appraisal and Report

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 Limerick Township's 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 2016-2017
- The signers of this report have made a personal inspection of the property that is the subject of this report.
- All individuals who participated in the preparation of this report and who are Senior Members of the American Society of Appraisers are recertified as required by the mandatory recertification as set out in the constitution by-laws and administrative rules of the American Society of Appraisers.

**Compliance with Uniform Standards of Professional
Appraisal Practice (USPAP) 2016-2017**

Fulfillment of Requirements for a Personal Property Appraisal and Report

- Individuals providing significant appraisal assistance to the person signing this certification include: John J. Spanos, Senior Vice President, Gannett Fleming Valuation and Rate Consultants, LLC.

Gannett Fleming Valuation and Rate Consultants, LLC

By,



HAROLD WALKER, III

Manager, Financial Studies

APPRAISAL CERTIFICATION
Limerick Township, Pennsylvania
Sanitary Wastewater Collection and Treatment System Assets
Fair Market Value Appraisal Report
As of December 31, 2016

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.
- Gannett Fleming Valuation and Rate Consultants, LLC has not performed an appraisal of Limerick Township's Wastewater System prior to this current appraisal.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are our personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- Neither 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.
- Neither Gannett Fleming Valuation and Rate Consultants, LLC, nor its professional staff has any bias with respect to the property that is the subject of this report or to the parties involved.
- Our compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- Our analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice 2016-2017
- The signers of this report have made a personal inspection of the property of the above ground property that is the subject of this report.
- All individuals who participated in the preparation of this report and who are Senior Members of the American Society of Appraisers are recertified as required by the mandatory re-certification as set out in the constitution by-laws and administrative rules of the American Society of Appraisers.

APPRAISAL CERTIFICATION
Limerick Township, Pennsylvania
Sanitary Wastewater Collection and Treatment System Assets
Fair Market Value Appraisal Report
As of December 31, 2016

- Individuals providing significant appraisal assistance to the person signing this certification include: John J. Spanos, Senior Vice President, Gannett Fleming Valuation and Rate Consultants, LLC.

Gannett Fleming Valuation and Rate Consultants, LLC

By,



HAROLD WALKER, III

Manager, Financial Studies

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

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, waste water, 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 twenty states including: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, Missouri, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, Vermont, Virginia, and West Virginia. His testimonies covered various subjects including: valuation, fair value, fair rate of return, appropriate capital structure and fixed capital cost rates, depreciation, purchased water adjustments, synchronization of interest charges for income tax purposes, cash working capital, lead-lag studies, and financial analyses of investment alternatives.

PROFESSIONAL AFFILIATIONS

Society of Utility and Regulatory Financial Analysts

Board of Directors, 1996-2000, 2005-2008

President, 2000-2002

Treasurer, 1996-1998

National Association of Water Companies

Pennsylvania Municipal Authorities Association
Electric Deregulation Committee

TECHNICAL PUBLICATIONS

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.

EXHIBITS

Limerick Township Wastewater System's Assets
Selected Audited Financial Information

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
<u>OPERATING REVENUES</u>					
Sewer Rental Charges	3,426,990	3,614,174	3,659,559	3,655,027	3,767,950
Tap Fees	145,000	53,000	150,000	1,296,818	131,113
Total Operating Revenues	3,571,990	3,667,174	3,809,559	4,951,845	3,899,063
<u>OPERATING EXPENSES</u>					
King Road Plant	600,346	548,257	644,278	582,420	618,105
Possum Hollow Plant	125,900	124,514	134,225	145,475	145,155
General and administrative	186,156	146,585	151,808	158,293	175,195
General operating	634,599	650,193	682,252	705,375	781,509
Contractual and professional services	94,270	111,249	78,170	75,066	82,142
Operating Expenses Before Depreciation	1,641,271	1,580,798	1,690,733	1,666,629	1,802,106
Depreciation	1,586,693	1,585,365	1,580,675	1,571,181	1,586,579
Total Operating Expenses	3,227,964	3,166,163	3,271,408	3,237,810	3,388,685
Operating Income	344,026	501,011	538,151	1,714,035	510,378
 CAPX	 110,002	 61,401	 112,528	 393,595	 301,118
 Assets					 43,556,756
Bonds payable	824,000	858,000	900,000	550,000	495,000
LT Debt	9,479,022	8,701,836	7,799,043	7,246,250	6,850,152
Equity	34,404,961	34,222,235	34,082,284	35,055,362	36,156,603
 Income (Loss) Before Transfers	 148,321	 324,464	 360,049	 1,573,078	 344,783
 Principal paid	 796,000	 824,000	 858,000	 900,000	 4,510,000
 Interest Paid	 255,879	 249,863	 221,795	 193,798	 256,305
 Gross Not Being Dep	 114,288	 1,122,503	 1,161,837	 1,214,194	 1,219,111
Gross Being Dep	57,316,986	57,536,048	57,609,242	57,950,480	59,628,139
Accum Dep	18,409,749	19,995,114	21,575,789	23,146,970	24,733,549
Net Plant ALL PPE	40,021,525	38,663,437	37,195,290	36,017,704	36,113,701

Source of Information: Audited Financial Statements

Limerick Township Wastewater System's Assets
Budget Expense Items

<u>Account Title</u>	<u>2014 Actual</u>	<u>2015 Actual</u>	<u>2016 Actual</u>	<u>2017 Budgeted</u>	<u>Category</u>
General Operating:					
Wages - Superintendent	79,796	82,190	-	0	Wages & Benefits
Wages - Operators	345,027	396,996	488,015	441,300	Wages & Benefits
Life/Disability Insurance	2,670	3,533	3,545	3,600	Insurance
Health Insurance	149,325	170,215	167,035	165,000	Wages & Benefits
Employer's Liab (FICA/SUTA)	38,417	41,115	42,171	38,300	Wages & Benefits
Overtime	30,655	26,691	26,521	30,000	Wages & Benefits
On Call Pay	10,681	10,521	10,177	11,000	Wages & Benefits
Uniform Rental	2,795	2,829	3,207	3,000	Uniforms
Personal Safety Equipment	-	-	3,313	4,000	
Gas & Oil	56	-	2,646	8,000	Electric & Power
Water Reads	4,113	3,345	3,537	3,700	Bank Fees, etc.
Mileage Costs	-	-	-	0	
Vehicle Insurance	6,732	6,707	8,916	9,000	Insurance
Workers' Comp. Insurance	22,492	23,338	25,846	23,000	Insurance
Vehicle Maintenance	6,575	7,604	5,091	6,000	Repairs & Maintenance
Dues/Subscriptions/Memberships	300	501	453	500	
Training	990	794	1,416	6,000	
Total - General Operating	700,623	776,379	791,889	752,400	
King Road:					
Water	10,378	9,508	8,715	10,000	
Sludge Removal	69,375	63,181	59,725	70,000	
Refuse/Trash	1,456	1,027	1,102	1,200	
Grit Removal	5,199	9,487	8,070	10,000	
Lab Supplies	2,540	1,505	3,108	4,000	Lab & Testing
Outside Lab Analysis	11,713	13,125	26,637	30,000	Lab & Testing
I & I	5,786	2,229	8,969	9,000	
Odor Control	23,881	34,598	18,468	10,000	
Other Chemicals	6,448	8,282	10,476	10,000	
Telephone Services - Monthly	14,694	16,253	15,651	13,000	
Bldg & Plant Insurance	8,352	12,455	13,478	14,000	Insurance
Electric - Plant	243,877	246,877	217,970	170,000	Electric & Power
Electric - PS #2, N. Limerick	2,756	2,498	2,271	3,000	Electric & Power
Electric - PS #3, S. Limerick	6,649	6,883	6,493	8,000	Electric & Power
Electric - PS #4, Benner Rd	2,468	2,387	2,370	2,500	Electric & Power
Electric - PS #5, Trinley Rd	20,275	21,242	18,433	21,000	Electric & Power
Electric - PS # 8, Merion	1,058	938	633	1,000	Electric & Power
ELECTRIC - PS #7, King Rd	2,602	2,316	2,080	2,500	Electric & Power
Electric - PS #6, SE	21,030	20,006	21,795	23,000	Electric & Power
Electric - PS #10, Ridge Pike	2,742	2,699	2,455	3,000	Electric & Power
Electric - PS #11, Wayside	3,528	2,459	-	0	Electric & Power
Electric - PS #9, Neiffer Rd	555	574	642	700	Electric & Power
Electric - PS #12, Bradford Wo	5,896	4,811	4,527	5,500	Electric & Power
Electric -PS # 13, Bradford Wo	1,569	1,599	1,415	2,000	Electric & Power
Electric - PS # 14, Bradford W	3,711	3,722	3,568	4,000	Electric & Power
Electric PS#15, Landis Brooke	1,187	1,114	1,036	1,200	Electric & Power
Electric - Country Club Estate	3,315	3,565	3,003	3,200	Electric & Power
Electric - PS #20, Graterford	-	1,299	2,973	4,000	Electric & Power
Lawn Maintenance	-	-	-	15,000	Repairs & Maintenance
Permits	1,071	2,305	2,361	3,500	
Plant/Bldg Maintenance	37,624	16,381	29,362	25,000	Repairs & Maintenance
Collection System Maintenance	36,416	62,732	77,589	90,000	Repairs & Maintenance
Equipment Maintenance	-	1,027	1,358	50,000	Repairs & Maintenance
Materials & Small Tools	1,813	3,136	3,884	6,000	
Equipment Rental	617	436	117	1,000	
Major Maintenance	10,273	20,379	14,687	0	Repairs & Maintenance
Other Contractor Services	7,122	9,046	7,692	20,000	Net Professional Services
Well Meters, Install & Repair	3,253	3,589	7,868	12,000	Repairs & Maintenance
Private Meter Supplies	1,022	1,297	-	0	
Deduct Meters	171	1,138	(2,558)	0	
Total - King Road	582,422	618,108	608,423	658,300	

Limerick Township Wastewater System's Assets
Budgetd Expense Items

EXHIBIT 1
Page 3 of 4

<u>Account Title</u>	<u>2014 Actual</u>	<u>2015 Actual</u>	<u>2016 Actual</u>	<u>2017 Budgeted</u>	<u>Category</u>
Possum Hollow:					
Water	463	436	446	600	
Sludge Removal	18,425	15,075	14,872	20,000	
Refuse/Trash	-	-	-	0	
Grit Removal	3,582	4,089	4,519	3,000	
Lab Supplies	930	2,314	772	1,500	Lab & Testing
Outside Lab Analysis	11,571	17,368	11,346	17,300	Lab & Testing
I & I	-	-	-	0	
Odor Control	-	-	4,506	5,000	
Other Chemicals	105	52	310	500	
Telephone Services - Monthly	3,203	3,326	4,605	5,000	
Bldg & Plant Insurance	5,803	-	-	0	Insurance
Electric - Plant	70,177	74,434	74,320	75,000	Electric & Power
Electric - PS #17, Poss Holl	4,496	4,265	4,340	5,000	Electric & Power
ELECTRIC - PS #1, Airport Rd	3,319	3,665	4,057	5,000	Electric & Power
Electric - PS # Heritage Hills	5,832	6,001	6,339	6,700	Electric & Power
Lawn Maintenance	-	-	-	0	Repairs & Maintenance
Plant/Bldg Maintenance	2,154	1,554	6,221	6,000	Repairs & Maintenance
Collection System Maintenance	149	3,163	4,188	6,000	Repairs & Maintenance
Equipment Maintenance	1,344	2,019	2,242	6,000	Repairs & Maintenance
Materials & Small Tools	1,044	200	1,682	4,000	
Equipment Rental	-	-	-	0	
Major Maintenance	7,683	7,194	7,491	5,000	Repairs & Maintenance
Other Contractor Services	3,675	-	5,833	6,000	Net Professional Services
Well Meters, Install & Repair	-	-	-	0	Repairs & Maintenance
Private Meter Supplies	-	-	-	0	
Deduct Meters	1,523	-	-	0	
Total - Possum Hollow	145,479	145,155	158,091	177,600	
G&A:					
Wages - Staff	92,853	95,886	97,000	101,100	Wages & Benefits
Life/Disability Insurance	701	756	800	870	Insurance
Health Insurance	24,665	27,642	29,700	31,200	Wages & Benefits
LTMA Retirement	-	11,547	-	0	Wages & Benefits
Employer's Liab (FICA/SUTA)	8,200	8,419	7,900	8,112	Wages & Benefits
Educational Reimb	-	-	-	0	Wages & Benefits
Office Supplies	463	4,116	5,000	3,000	
Bank Fees	(131)	(270)	100	100	Bank Fees, etc.
Trustee	245	245	750	750	Bank Fees, etc.
One Call	641	761	1,000	1,000	
Telephone	-	-	-	0	
Postage	9,929	10,238	12,000	13,000	Postage
Public Officials & Gen Liab.	13,666	12,004	14,109	14,391	Insurance
Workers' Comp. Insurance	240	236	252	125	Insurance
Rental of Machinery/Equipment	2,848	2,837	3,000	3,000	
Dues/Subscriptions	466	-	-	0	
Education & Training	135	18	-	200	
Non-depreciable Equipment	3,373	189	341	500	
Total - G&A	158,294	174,624	171,952	177,348	
Other:					
Legal	50,738	37,103	610,000	50,000	Net Professional Services
Engineering	24,328	45,039	65,000	70,000	Net Professional Services
General Govt Bldg	4,751	5,130	5,600	5,652	Repairs & Maintenance
Total - Other	79,817	87,272	680,600	125,652	

Limerick Township Wastewater System's Assets
Budgetd Expense Items

EXHIBIT 1
Page 4 of 4

<u>Account Title</u>	<u>2014 Actual</u>	<u>2015 Actual</u>	<u>2016 Actual</u>	<u>2017 Budgeted</u>	<u>Category</u>
<u>Remove Expense of Sale</u>					
Legal			(566,080)	(6,080)	Net Professional Services
Engineering			(30,317)	(35,317)	Net Professional Services
Remove Expense of Sale			<u>(596,396)</u>	<u>(41,396)</u>	
Total - General Operating	700,623	776,379	791,889	752,400	
Total - King Road	582,422	618,108	608,423	658,300	84,204
Total - Possum Hollow	145,479	145,155	158,091	177,600	
Total - G&A	158,294	174,624	171,952	177,348	
Total - Other	79,817	87,272	680,600	125,652	
	1,666,635	1,801,538	2,410,955	1,891,300	
<u>Annual Change</u>					
Total - General Operating		11%	2%	-5%	
Total - King Road		6%	-2%	8%	
Total - Possum Hollow		0%	9%	12%	
Total - G&A		10%	-2%	3%	
Total - Other		9%	680%	-82%	
		8%	34%	-22%	
Other Contractor Services	7,122	9,046	7,692	20,000	Net Professional Services
Other Contractor Services	3,675	-	5,833	6,000	Net Professional Services
Legal	50,738	37,103	610,000	50,000	Net Professional Services
Engineering	24,328	45,039	65,000	70,000	Net Professional Services
	<u>85,863</u>	<u>91,188</u>	<u>688,526</u>	<u>146,000</u>	
<u>Year LESS Avg. 2014-15</u>					
Other Contractor Services			392	(11,916)	
Other Contractor Services			(3,996)	(4,163)	
Legal			(566,080)	(6,080)	
Engineering			(30,317)	(35,317)	
			<u>(600,000)</u>	<u>(57,475)</u>	
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2017 v. 14-15</u>
LESS: EOS - Bank Fees, etc.	4,227	3,320	4,387	4,550	21%
LESS: EOS - Wages & Benefits	779,619	871,223	868,519	826,012	0%
LESS: EOS - Electric & Power	407,099	413,357	383,366	354,300	-14%
LESS: EOS - Lab & Testing	26,754	34,311	41,864	52,800	73%
LESS: EOS - Insurance	60,656	59,029	66,946	64,986	9%
LESS: EOS - Net Professional Services	85,863	91,188	92,130	104,604	18%
LESS: EOS - Repairs & Maintenance	110,220	130,771	161,697	226,652	88%
LESS: EOS - Uniforms	2,795	2,829	3,207	3,000	7%
LESS: EOS - Postage	9,929	10,238	12,000	13,000	29%

Source of Information: Annual Budgets

Limerick Township Wastewater System's Assets
 EDU and Customer Count
 Penetration of Service Area
Estimated 2016 Customer Mix

TABLE 2.1 EDU and Customer Count & Penetration of Service Area			
<u>2015 EDUs Reported</u>			
	<u>King Rd WWTP</u>	<u>Possum Hollow WWTP</u>	<u>2015 Cp 94 Rpt</u>
Existing Connections	6,442	1,573	
New Connections	220	33	
Total Connections	6,662	1,606	8,268
<u>TWP wide</u>			
	<u>2010</u>	<u>2015</u>	<u>2016</u>
Population	18,074	18,798	19,009
Total Household Units	7,199	7,487	7,571
Population / Households	2.51	2.51	2.51
<u>Wastewater System</u>			
Customers			
Residential			4,881
Commercial			315
Apartments			210
Schools			14
Churches			9
Public			4
		5,416	5,433
EDU		8,268	8,387
<u>Penetration</u>			
Wastewater System/TWP - Household Ratio			67%

TABLE 2.1 Current Customer Mix	
Sewer Customers	
Residential	4,881
Commercial	315
Apartments	210
Schools	14
Churches	9
Public	4
Total	<u>5,433</u>

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

Source: U.S. Census Bureau, Population Division

Geographic Area	Population		Percentage Change	Municipal Growth Rank
	2000	2010		
Pennsylvania	12,281,054	12,702,379	3.4%	-
Montgomery County	750,097	799,874	6.6%	-
Limerick township	13,534	18,074	33.5%	89 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%
Limerick Township	18,798	19,854	20,904	21,970	22,894	23,653	24,296	5.6%	5.3%	5.1%	4.2%	3.3%	2.7%	29.2%

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%
Limerick Township	11,533	11,874	12,362	12,826	13,324	13,799	14,151	3.0%	4.1%	3.8%	3.9%	3.6%	2.6%	22.7%

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 Limerick Township Wastewater System's Assets
The Comparable Group
2013 - 2015 (1)

	Limerick Township Wastewater System's Assets			Comparable Group		
	2015	2014	2013	2015	2014	2013
Debt Service Coverage	0.5	3.1	2.0	3.3	3.0	2.0
Pre-Tax Interest Coverage - Including AFC(2)(x)	2.3	9.1	2.6	3.8	4.2	3.9
Post-Tax Interest Coverage - Including AFC(2)(x)	2.3	9.1	2.6	3.5	3.4	2.8
GCF / Interest Coverage(3)(x)	8.5	17.2	9.8	5.1	6.2	4.7
GCF / Tot. Debt(4)(%)	26.3	40.3	22.3	22.3	22.2	20.1
GCF / Construction(5)(%)	641.4	798.9	1724.7	102.7	114.0	108.3

- 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: 2013-2015 Audited Financial Statements
S&P Research Insight
EXHIBIT 1

Limerick Township Wastewater System's Assets
 Illustrating the Impact of Size on Risk and Return
 Through Common Stock Returns

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

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>I</u>	<u>J</u>
	Market	Average	Standard	Change in	Largest	Quartile	Comparison	Beta	Beta Adjusted	
<u>Market</u>	<u>Quartile</u>	Quartile	Deviation	Quartile	Market Value	Beta	Group	Ratio	Quartile	Change in
<u>Quartile</u>	<u>Name</u>	1926-14	of	Premium	in the Quartile		<u>Beta</u>		Size	Quartile
		(%)	Return	(%)	(Mill \$)				Premium	Premium
			(%)	(%)					(%)	(%)
(Largest Stocks)										
1	Large-Cap	0.00	19.6	--	591,016	1.00	0.70	70%	0.00	
2	Mid-Cap	1.07	24.6	1.07	10,107	1.12	0.70	63%	0.67	0.67
3	Low-Cap	1.80	28.9	0.73	2,594	1.22	0.70	57%	1.03	0.36
4	Mico-Cap	3.74	39.1	1.94	550	1.35	0.70	52%	1.94	0.91
(Smallest Stocks)										

Notes: (1) 2015 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook

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

	12/31/2016	Market	Market
	Market	Quartile	Quartile
	<u>Value</u>	<u>Name</u>	<u>Quartile</u>
	(Mill \$)		
<u>Comparable Group</u>			
American States Water Co	1,666	Low-Cap	3
American Water Works Co Inc	13,314	Large-Cap	1
Aqua America Inc	5,405	Mid-Cap	2
Artesian Resources -CI A	260	Mico-Cap	4
California Water Service Gp	1,539	Low-Cap	3
Connecticut Water Svc Inc	548	Mico-Cap	4
Middlesex Water Co	574	Low-Cap	3
SJW Corp	893	Low-Cap	3
York Water Co	382	Mico-Cap	4
Median	893	Low-Cap	3

Limerick Township Wastewater System's 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 \$)			
Limerick Township Wastewater System's Assets	\$63.480	\$46.154	<u>73%</u>
Limerick's			
American States Water Co	\$1,655.690	\$1,107.137	67%
American Water Works Co Inc	17,871.000	13,130.000	73%
Aqua America Inc	6,282.410	4,823.484	77%
Artesian Resources -CL A	527.076	417.558	79%
California Water Service Gp	2,621.322	1,785.077	68%
Connecticut Water Svc Inc	774.515	568.406	73%
Middlesex Water Co	628.225	497.100	79%
SJW Corp	1,652.828	1,143.584	69%
York Water Co	331.721	264.439	<u>80%</u>
Median			<u>73%</u>

TABLE 6.2 Property Plant & Equipment Analysis for Contributions

(As of 12/31/2016)			
Net Property, Plant & Equipment	Investor's Capital	Percentage of Property, Plant & Equipment Net of Contributions	
(Millions of \$)			
<u>Comparable Group</u>			
American States Water Co	\$1,107.137	\$797.606	72%
American Water Works Co Inc	13,130.000	11,014.000	84%
Aqua America Inc	4,823.484	3,567.037	74%
Artesian Resources -CL A	417.558	238.380	57%
California Water Service Gp	1,785.077	1,192.547	67%
Connecticut Water Svc Inc	568.406	432.072	76%
Middlesex Water Co	497.100	345.567	70%
SJW Corp	1,143.584	760.194	66%
York Water Co	264.439	196.546	<u>74%</u>
Median			<u>72%</u>

Limerick Township Wastewater System's 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			
	2015	2014	2013	2012	2015	2014	2013	2012
	(Millions of \$)				(Millions of \$)			
Limerick Township Wastewater System's Assets	\$36.114	\$36.018	\$37.195	\$38.663	\$0.301	\$0.394	\$0.113	\$0.061
<u>Comparable Group</u>								
American States Water Co	\$1,060.794	\$1,003.520	\$981.477	\$917.791	\$87.323	\$72.553	\$97.379	\$68.104
American Water Works Co Inc	12,812.000	11,824.832	11,201.655	10,588.808	1,160.000	956.119	980.252	928.574
Aqua America Inc	4,688.925	4,401.990	4,167.293	3,936.163	364.689	328.605	308.171	347.985
Artesian Resources -CL A	409.562	397.823	383.102	370.645	20.694	23.730	21.188	20.546
California Water Service Gp	1,689.252	1,579.060	1,503.612	1,443.093	176.833	132.015	122.988	127.681
Connecticut Water Svc Inc	546.284	506.939	471.876	447.911	48.025	45.668	33.303	24.653
Middlesex Water Co	481.870	465.406	446.479	435.218	25.773	22.596	20.080	21.578
SJW Corp	1,098.247	1,025.215	966.557	896.747	106.774	101.936	94.325	105.834
York Water Co	262.189	253.959	245.000	240.315	13.844	14.139	9.852	11.543
	Capital Expenditures / PP&E-Total Net							
	2015	2014	2013	2012				
Limerick Township Wastewater System's Assets	1%	1%	0%	0%				
<u>Comparable Group</u>								
American States Water Co	8%	7%	10%	7%				
American Water Works Co Inc	9%	8%	9%	9%				
Aqua America Inc	8%	7%	7%	9%				
Artesian Resources -CL A	5%	6%	6%	6%				
California Water Service Gp	10%	8%	8%	9%				
Connecticut Water Svc Inc	9%	9%	7%	6%				
Middlesex Water Co	5%	5%	4%	5%				
SJW Corp	10%	10%	10%	12%				
York Water Co	5%	6%	4%	5%				
Median	8%	7%	7%	7%				

Limerick Township Wastewater System's Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

Revenues				EBITDA			
2015	2014	2013	2012	2015	2014	2013	2012

(Millions of \$)

(Millions of \$)

Limerick Township Wastewater System's Assets	\$3.899	\$4.952	\$3.810	\$3.667	\$2.097	\$3.285	\$2.119	\$2.086
<u>Comparable Group</u>								
American States Water Co	\$458.641	\$465.791	\$472.077	\$466.908	\$160.522	\$160.063	\$159.160	\$152.411
American Water Works Co Inc	3,159.000	3,011.328	2,901.858	2,876.889	1,306.476	1,154.957	1,102.741	917.849
Aqua America Inc	814.204	779.903	768.643	757.760	433.284	387.423	380.137	340.460
Artesian Resources -CL A	77.024	72.465	69.073	70.563	30.401	25.800	26.382	25.061
California Water Service Gp	588.368	597.499	584.103	559.966	147.867	140.577	127.710	122.709
Connecticut Water Svc Inc	96.838	94.853	92.337	84.650	37.534	31.856	28.316	23.242
Middlesex Water Co	126.025	117.139	114.846	110.379	38.056	33.947	35.841	28.720
SJW Corp	305.082	319.668	276.869	261.547	86.302	83.532	68.003	63.335
York Water Co	47.089	45.900	42.383	41.447	25.743	24.780	24.359	21.800

EBIT			
2015	2014	2013	2012

(Millions of \$)

Limerick Township Wastewater System's Assets	\$0.510	\$1.714	\$0.538	\$0.501
<u>Comparable Group</u>				
American States Water Co	\$118.489	\$118.990	\$119.070	\$111.026
American Water Works Co Inc	1,075.000	1,014.026	945.849	924.973
Aqua America Inc	321.100	314.359	305.242	321.517
Artesian Resources -CL A	25.366	22.421	20.072	22.471
California Water Service Gp	95.681	108.574	93.052	93.199
Connecticut Water Svc Inc	26.670	30.224	29.942	27.752
Middlesex Water Co	35.840	34.392	30.970	27.647
SJW Corp	79.960	92.878	53.407	55.297
York Water Co	22.661	22.077	20.761	20.573

Limerick Township Wastewater System's Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.4 Growth Rate Analyses

	Revenue Growth			EBITDA Growth		
	2015	2014	2013	2015	2014	2013
Limerick Township Wastewater System's Assets	-21.3%	30.0%	3.9%	-36.2%	55.0%	1.6%
<u>Comparable Group</u>						
American States Water Co	-1.5%	-1.3%	1.1%	0.3%	0.6%	4.4%
American Water Works Co Inc	4.9%	3.8%	0.9%	13.1%	4.7%	20.1%
Aqua America Inc	4.4%	1.5%	1.4%	11.8%	1.9%	11.7%
Artesian Resources -CL A	6.3%	4.9%	-2.1%	17.8%	-2.2%	5.3%
California Water Service Gp	-1.5%	2.3%	4.3%	5.2%	10.1%	4.1%
Connecticut Water Svc Inc	2.1%	2.7%	9.1%	17.8%	12.5%	21.8%
Middlesex Water Co	7.6%	2.0%	4.0%	12.1%	-5.3%	24.8%
SJW Corp	-4.6%	15.5%	5.9%	3.3%	22.8%	7.4%
York Water Co	2.6%	8.3%	2.3%	3.9%	1.7%	11.7%
Median	2.6%	2.7%	2.3%	11.8%	1.9%	11.7%
	EBIT Growth					
	2015	2014	2013			
Limerick Township Wastewater System's Assets	-70.2%	218.6%	7.4%			
<u>Comparable Group</u>						
American States Water Co	-0.4%	-0.1%	7.2%			
American Water Works Co Inc	6.0%	7.2%	2.3%			
Aqua America Inc	2.1%	3.0%	-5.1%			
Artesian Resources -CL A	13.1%	11.7%	-10.7%			
California Water Service Gp	-11.9%	16.7%	-0.2%			
Connecticut Water Svc Inc	-11.8%	0.9%	7.9%			
Middlesex Water Co	4.2%	11.0%	12.0%			
SJW Corp	-13.9%	73.9%	-3.4%			
York Water Co	2.6%	6.3%	0.9%			
Median	2.1%	7.2%	0.9%			

Limerick Township Wastewater System's Assets
Property Plant & Equipment Analysis
Capital Expenditures Analysis
Growth Rate Analyses
Profit Margin Analyses

TABLE 6.5 Profit Margin Analyses			
	EBITDA / Revenue - Margin		
	2015	2014	2013
Limerick Township Wastewater System's Assets	53.8%	66.3%	55.6%
<u>Comparable Group</u>			
American States Water Co	35.0%	34.4%	33.7%
American Water Works Co Inc	41.4%	38.4%	38.0%
Aqua America Inc	53.2%	49.7%	49.5%
Artesian Resources -CL A	39.5%	35.6%	38.2%
California Water Service Gp	25.1%	23.5%	21.9%
Connecticut Water Svc Inc	38.8%	33.6%	30.7%
Middlesex Water Co	30.2%	29.0%	31.2%
SJW Corp	28.3%	26.1%	24.6%
York Water Co	54.7%	54.0%	57.5%
Median	38.8%	34.4%	33.7%
	EBIT / Revenue - Margin		
	2015	2014	2013
Limerick Township Wastewater System's Assets	13.1%	34.6%	14.1%
<u>Comparable Group</u>			
American States Water Co	25.8%	25.5%	25.2%
American Water Works Co Inc	34.0%	33.7%	32.6%
Aqua America Inc	39.4%	40.3%	39.7%
Artesian Resources -CL A	32.9%	30.9%	29.1%
California Water Service Gp	16.3%	18.2%	15.9%
Connecticut Water Svc Inc	27.5%	31.9%	32.4%
Middlesex Water Co	28.4%	29.4%	27.0%
SJW Corp	26.2%	29.1%	19.3%
York Water Co	48.1%	48.1%	49.0%
Median	28.4%	30.9%	29.1%

Source: S&P Research Insight
EXHIBIT 1

Income Approach
Limerick Township Wastewater System's Assets
Pro Forma Operations
Earnings Capitalization Model

					Est. & Actual	Budget Year
Actual Limerick Township Wastewater System's Assets						
	2012	2013	2014	2015	2016	2017
1. OPERATING REVENUES (1)						
2. Sewer Rental Fees	3,614,174	3,659,559	3,655,027	3,767,950	3,766,000	3,781,000
3. Tap Fees	53,000	150,000	1,296,818	131,113	652,775	1,370,584
4. Total Operating Revenues	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
5. Rate Increase						
6. OPERATING EXPENSES (1)						
7. Current Operating Expenses	1,580,798	1,690,733	1,666,629	1,802,106	2,527,396	1,891,300
8. Remove Expense of Sale					(596,396)	(41,396)
9. Operating Expenses Before Depreciation	1,580,798	1,690,733	1,666,629	1,802,106	1,931,000	1,849,904
10. Depreciation (2)	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
11. Total Operating Expenses	3,166,163	3,271,408	3,237,810	3,388,685	3,525,175	2,956,723
12. Operating Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
13. Revenues (3)	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
14. EBITDA (4)	2,086,376	2,118,826	3,285,216	2,096,957	2,487,775	3,301,680
15. EBIT (5)	501,011	538,151	1,714,035	510,378	893,600	2,194,861
16. EBIT	501,011	538,151	1,714,035	510,378	893,600	2,194,861
17. (-) Income Taxes	0	0	0	0	0	0
18. Debt Free Net Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
19. (+) Depreciation & Amortization	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
20. (-) Capital Expenditures (6)	61,401	112,528	393,595	301,118	832,322	371,000
21. (-) Changes in Working Capital (7)	35,205	36,572	47,538	37,431	42,420	49,455
22. Debt Free Net Cash Flow	\$1,989,770	\$1,969,726	\$2,844,083	\$1,758,408	\$1,613,033	\$2,881,225
23. PV Time Period (mid-year)						

	2017	2017(11)
	Normalized Tap Fee	
	4.37%	4.37%
	Capitalization Rate Model (No Growth)	Capitalization Rate Model (No Growth)
23. Debt Free Net Cash Flow (10)	\$2,881,225	\$2,125,473
24. Capitalization Factor: (8)	4.37%	4.37%
25. Indicated Value (line 23 ÷ line 24)	\$65,931,917	\$48,637,821
	3.37%	3.37%
	Capitalization Rate Model (1.0% Growth)	Capitalization Rate Model (1.0% Growth)
26. Debt Free Net Cash Flow (10)	\$2,881,225	\$2,125,473
27. Capitalization Factor: (9)	3.37%	3.37%
28. Indicated Value (line 26 ÷ line 27)	\$85,496,285	\$63,070,409

See last page of this EXHIBIT for notes and assumptions.

Notes: (1) Assumptions:

Sewer Rental Fees - Pre-2016 are actuals. Post-2015 based on customer growth (population growth) and average revenue per customer.

Tap Fees - Pre-2017 are actuals. Post-2016 based on Engineers Assessment, 2017 - 2021.

OPERATING EXPENSES - increase at 2% annually after 2017 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Remove Expense of Sale - 2016 and 2017 normalization of legal and engineering fees. Increase at 2% afterwards.

- (2) Depreciation - 2016 based on 2015 depreciation rate plus same rate on half of CAPX. Post-2016 based on OCNLD depreciation rate plus same rate on half of CAPX.
- (3) Line 4.
- (4) Line 12 + line 10.
- (5) Line 12.
- (6) Capital Expenditures - Year 2016 are from Engineers Assessment inventory post-2015 additions. Years 2017 - 2020 are from Engineers Assessment CIP. Post-2020 years are estimates at 1.75% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - 2011 - 2017 based on TWP's actual average of 0.96% of revenues. Subsequent years based on water industry -0.02% of revenues.
- (8) Discount rate is the current MUNI discount rate. Capitalization rate, "K", at 12/31/2016 equal to discount rate, where capitalization rate = K - g.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate, "K", at 12/31/2016 adjusted for stated growth, "g", where capitalization rate = K - g.
- (10) Final year shown, line 22.
- (11) Debt Free Net Cash Flow adjusted for normalized tap fee (Debt Free Net Cash Flow - \$1,370,584 + \$614,832), where normalized tap fee is average 2017 -2021 tap fee.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investot owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment
TWP - Township

Income Approach
Limerick Township Wastewater System's Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Est. & Actual		Budget Year			
Actual Limerick Township Wastewater System's Assets						
	2012	2013	2014	2015	2016	2017
1. OPERATING REVENUES (1)						
2. Sewer Rental Fees	3,614,174	3,659,559	3,655,027	3,767,950	3,766,000	3,781,000
3. Tap Fees	53,000	150,000	1,296,818	131,113	652,775	1,370,584
4. Other (Rate Increase)	0	0	0	0	0	0
5. Total Operating Revenues	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
6. Rate Increase						
7. OPERATING EXPENSES (1)						
8. Current Operating Expenses	1,580,798	1,690,733	1,666,629	1,802,106	2,527,396	1,891,300
9. Remove Expense of Sale					(596,396)	(41,396)
10. LESS: EOS - Bank Fees, etc.						
11. LESS: EOS - Wages & Benefits						
12. LESS: EOS - Electric & Power						
13. LESS: EOS - Lab & Testing						
14. LESS: EOS - Insurance						
15. LESS: EOS - Net Professional Services						
16. LESS: EOS - Repairs & Maintenance						
17. LESS: EOS - Uniforms						
18. LESS: EOS - Postage						
19. Operating Expenses Before Depreciation	1,580,798	1,690,733	1,666,629	1,802,106	1,931,000	1,849,904
20. Depreciation (2)	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
21. Total Operating Expenses	3,166,163	3,271,408	3,237,810	3,388,685	3,525,175	2,956,723
22. Operating Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
23. Revenues (3)	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
24. EBITDA (4)	2,086,376	2,118,826	3,285,216	2,096,957	2,487,775	3,301,680
25. EBIT (5)	501,011	538,151	1,714,035	510,378	893,600	2,194,861
26. EBIT	501,011	538,151	1,714,035	510,378	893,600	2,194,861
27. (-) Income Taxes	0	0	0	0	0	0
28. Debt Free Net Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
29. (+) Depreciation & Amortization	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
30. (-) Capital Expenditures (6)	61,401	112,528	393,595	301,118	832,322	371,000
31. (-) Changes in Working Capital (7)	35,205	36,572	47,538	37,431	42,420	49,455
32. Debt Free Net Cash Flow	\$1,989,770	\$1,969,726	\$2,844,083	\$1,758,408	\$1,613,033	\$2,881,225
33. PV Time Period (mid-year)						
34. Present Value Debt Free Net Cash Flow						
35. Present Value Factor: 4.37% (8)						
36. Present Value Debt Free Net Cash Flow						
37. Present Value Factor: 2.37% (9)						
38. Present Value Debt Free Net Cash Flow						

See last page of this EXHIBIT for notes and assumptions.

Income Approach
 Limerick Township Wastewater System's 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 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	
	2018	2019	2020	2021	2022	2023	2024	
1. OPERATING REVENUES (1)								
2. Sewer Rental Fees	3,812,234	3,815,638	3,820,745	3,886,109	5,120,681	5,171,888	5,223,607	
3. Tap Fees	439,166	82,042	260,604	921,766	434,340	439,166	443,992	
4. Other (Rate Increase)	0	0	0	1,126,972	0	0	158,275	
5. Total Operating Revenues	4,251,400	3,897,680	4,081,349	5,934,847	5,555,021	5,611,054	5,825,874	
6.								
	Rate Increase			29%			3%	
7. OPERATING EXPENSES (1)								
8. Current Operating Expenses	1,929,126	1,967,709	2,007,063	2,047,204	2,088,148	2,129,911	2,172,509	
9. Remove Expense of Sale	(42,224)	(43,068)	(43,930)	(44,808)	(45,705)	(46,619)	(47,551)	
10. LESS: EOS - Bank Fees, etc.	(4,641)	(4,734)	(4,828)	(4,925)	(5,024)	(5,124)	(5,227)	
11. LESS: EOS - Wages & Benefits	(126,380)	(128,907)	(131,486)	(134,115)	(136,798)	(139,534)	(142,324)	
12. LESS: EOS - Electric & Power	(36,139)	(36,861)	(37,599)	(38,351)	(39,118)	(39,900)	(40,698)	
13. LESS: EOS - Lab & Testing	(13,464)	(13,733)	(14,008)	(14,288)	(14,574)	(14,865)	(15,163)	
14. LESS: EOS - Insurance	(53,471)	(54,540)	(55,631)	(56,744)	(57,879)	(59,036)	(60,217)	
15. LESS: EOS - Net Professional Services	(53,348)	(54,415)	(55,503)	(56,613)	(57,746)	(58,901)	(60,079)	
16. LESS: EOS - Repairs & Maintenance	(23,119)	(23,581)	(24,052)	(24,534)	(25,024)	(25,525)	(26,035)	
17. LESS: EOS - Uniforms	(820)	(837)	(854)	(871)	(888)	(906)	(924)	
18. LESS: EOS - Postage	(12,420)	(12,669)	(12,922)	(13,180)	(13,444)	(13,713)	(13,987)	
19. Operating Expenses Before Depreciation	1,563,101	1,594,363	1,626,250	1,658,775	1,691,951	1,725,790	1,760,305	
20. Depreciation (2)	1,112,044	1,116,212	1,123,366	1,137,826	1,154,752	1,171,929	1,189,362	
21. Total Operating Expenses	2,675,145	2,710,575	2,749,616	2,796,601	2,846,703	2,897,718	2,949,667	
22. Operating Income	1,576,255	1,187,105	1,331,733	3,138,246	2,708,318	2,713,336	2,876,207	
23. Revenues (3)	4,251,400	3,897,680	4,081,349	5,934,847	5,555,021	5,611,054	5,825,874	
24. EBITDA (4)	2,688,299	2,303,317	2,455,099	4,276,072	3,863,070	3,885,264	4,065,569	
25. EBIT (5)	1,576,255	1,187,105	1,331,733	3,138,246	2,708,318	2,713,336	2,876,207	
26. EBIT	1,576,255	1,187,105	1,331,733	3,138,246	2,708,318	2,713,336	2,876,207	
27. (-) Income Taxes	0	0	0	0	0	0	0	
28. Debt Free Net Income	1,576,255	1,187,105	1,331,733	3,138,246	2,708,318	2,713,336	2,876,207	
29. (+) Depreciation & Amortization	1,112,044	1,116,212	1,123,366	1,137,826	1,154,752	1,171,929	1,189,362	
30. (-) Capital Expenditures (6)	328,000	216,000	866,000	1,137,399	1,154,318	1,171,489	1,188,915	
31. (-) Changes in Working Capital (7)	(850)	(780)	(816)	(1,187)	(1,111)	(1,122)	(1,165)	
32. Debt Free Net Cash Flow	\$2,361,150	\$2,088,097	\$1,589,915	\$3,139,860	\$2,709,863	\$2,714,898	\$2,877,819	
33.	PV Time Period (mid-year)	0.5	1.5	2.5	3.5	4.5	5.5	6.5
34. Present Value Debt Free Net Cash Flow	\$2,293,385	\$1,913,532	\$1,374,641	\$2,561,498	\$2,085,782	\$1,971,559	\$1,971,594	
35. Present Value Factor: 4.37% (8)	0.9788	0.9379	0.8986	0.8610	0.8249	0.7904	0.7573	
36. Present Value Debt Free Net Cash Flow	\$2,311,093	\$1,958,426	\$1,428,698	\$2,703,419	\$2,235,366	\$2,145,855	\$2,179,372	
37. Present Value Factor: 2.37% (9)	0.9884	0.9655	0.9431	0.9213	0.9000	0.8791	0.8588	
38. Present Value Debt Free Net Cash Flow	\$2,333,760	\$2,016,057	\$1,499,449	\$2,892,753	\$2,438,877	\$2,386,667	\$2,471,471	

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's Assets
Pro Forma and Estimated Operations With MUNI Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
	2025	2026	2027	2028	2029	2030
1. OPERATING REVENUES (1)						
2. Sewer Rental Fees	5,435,701	5,490,058	5,544,958	5,770,100	5,827,801	5,886,079
3. Tap Fees	448,818	453,644	458,470	463,296	468,122	472,948
4. Other (Rate Increase)	0	0	168,012	0	0	178,348
5. Total Operating Revenues	5,884,519	5,943,702	6,171,440	6,233,396	6,295,923	6,537,375
6. Rate Increase			3%			3%
7. OPERATING EXPENSES (1)						
8. Current Operating Expenses	2,215,959	2,260,279	2,305,484	2,351,594	2,398,626	2,446,598
9. Remove Expense of Sale	(48,502)	(49,472)	(50,461)	(51,471)	(52,500)	(53,550)
10. LESS: EOS - Bank Fees, etc.	(5,331)	(5,438)	(5,546)	(5,657)	(5,771)	(5,886)
11. LESS: EOS - Wages & Benefits	(145,171)	(148,074)	(151,036)	(154,056)	(157,137)	(160,280)
12. LESS: EOS - Electric & Power	(41,512)	(42,342)	(43,189)	(44,053)	(44,934)	(45,832)
13. LESS: EOS - Lab & Testing	(15,466)	(15,775)	(16,091)	(16,413)	(16,741)	(17,076)
14. LESS: EOS - Insurance	(61,421)	(62,650)	(63,903)	(65,181)	(66,484)	(67,814)
15. LESS: EOS - Net Professional Services	(61,280)	(62,506)	(63,756)	(65,031)	(66,332)	(67,658)
16. LESS: EOS - Repairs & Maintenance	(26,556)	(27,087)	(27,629)	(28,181)	(28,745)	(29,320)
17. LESS: EOS - Uniforms	(942)	(961)	(980)	(1,000)	(1,020)	(1,040)
18. LESS: EOS - Postage	(14,267)	(14,552)	(14,843)	(15,140)	(15,443)	(15,752)
19. Operating Expenses Before Depreciation	1,795,511	1,831,422	1,868,050	1,905,411	1,943,519	1,982,390
20. Depreciation (2)	1,207,053	1,225,008	1,243,230	1,261,723	1,280,491	1,299,539
21. Total Operating Expenses	3,002,564	3,056,430	3,111,280	3,167,134	3,224,010	3,281,928
22. Operating Income	2,881,955	2,887,272	3,060,160	3,066,262	3,071,913	3,255,447
23. Revenues (3)	5,884,519	5,943,702	6,171,440	6,233,396	6,295,923	6,537,375
24. EBITDA (4)	4,089,008	4,112,280	4,303,390	4,327,985	4,352,404	4,554,985
25. EBIT (5)	2,881,955	2,887,272	3,060,160	3,066,262	3,071,913	3,255,447
26. EBIT	2,881,955	2,887,272	3,060,160	3,066,262	3,071,913	3,255,447
27. (-) Income Taxes	0	0	0	0	0	0
28. Debt Free Net Income	2,881,955	2,887,272	3,060,160	3,066,262	3,071,913	3,255,447
29. (+) Depreciation & Amortization	1,207,053	1,225,008	1,243,230	1,261,723	1,280,491	1,299,539
30. (-) Capital Expenditures (6)	1,206,600	1,224,548	1,242,763	1,261,249	1,280,010	1,299,050
31. (-) Changes in Working Capital (7)	(1,177)	(1,189)	(1,234)	(1,247)	(1,259)	(1,307)
32. Debt Free Net Cash Flow	\$2,883,584	\$2,888,921	\$3,061,861	\$3,067,983	\$3,073,653	\$3,257,243
33. PV Time Period (mid-year)	7.5	8.5	9.5	10.5	11.5	12.5
34. Present Value Debt Free Net Cash Flow	\$1,863,949	\$1,761,953	\$1,761,795	\$1,665,608	\$1,574,325	\$1,574,225
35. Present Value Factor: 4.37% (8)	0.7256	0.6952	0.6661	0.6382	0.6115	0.5859
36. Present Value Debt Free Net Cash Flow	\$2,092,329	\$2,008,378	\$2,039,506	\$1,957,986	\$1,879,539	\$1,908,419
37. Present Value Factor: 2.37% (9)	0.8389	0.8195	0.8005	0.7820	0.7639	0.7462
38. Present Value Debt Free Net Cash Flow	\$2,419,039	\$2,367,471	\$2,451,020	\$2,399,162	\$2,347,963	\$2,430,555

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's 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 @ 4.37%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,257,243
Divided by Capitalization Factor (8)	4.37%
13th Year Terminal Value	74,536,448
13th Year Present Value Factor (11)	0.5859
Present Value of Terminal Value	43,670,905
Present Value Debt Free Net	
Cash Flow for 13 Years	26,848,387
Indicated Value	<u>\$70,519,292</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 4.37%			
		Multiples (13)	Terminal Value
Projected EBIT	\$3,255,447	24.7	\$80,409,531
Projected EBITDA	4,554,985	15.8	71,968,768
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			74,754,220
13th Year Present Value Factor (11)			0.5859
Present Value of Terminal Value			43,798,497
Present Value Debt Free Net			
Cash Flow for 13 Years			26,848,387
Indicated Value			<u>\$70,646,884</u>

DCF With Capitalization of Terminal Value Model @ 2.37%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,257,243
Divided by Capitalization Factor (9)	2.37%
13th Year Terminal Value	137,436,405
13th Year Present Value Factor (12)	0.5859
Present Value of Terminal Value	80,523,989
Present Value Debt Free Net	
Cash Flow for 13 Years	26,848,387
Indicated Value	<u>\$107,372,376</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 2.37%			
		Multiples (13)	Terminal Value
Projected EBIT	\$3,255,447	24.7	\$80,409,531
Projected EBITDA	4,554,985	15.8	71,968,768
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			74,754,220
13th Year Present Value Factor (12)			0.5859
Present Value of Terminal Value			43,798,497
Present Value Debt Free Net			
Cash Flow for 13 Years			26,848,387
Indicated Value			<u>\$70,646,884</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's 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:

Sewer Rental Fees - Pre-2016 are actuals. Post-2015 based on customer growth (population growth) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.

Tap Fees - Pre-2017 are actuals. Post-2016 based on Engineers Assessment, 2017 - 2021, and new EDUs @ current EDU rate.

Other (Rate Increase) - Assumed purchase by MUNI in 2017. 2021 assumed 29% rate increase so operating income is 5.1% of Net Property, Plant & Equipment (Similar to large MUNIs). Purchase includes pledge not to increase rates for 3 years (i.e., 2021). Post-2021 assumes 3.03% rate increase every three years to account for expense increases (2%) less growth in customers (-1.0%). Rate increases are added into Sewer Rental Fees year after they occur.

OPERATING EXPENSES - increase at 2% annually after 2017 unless noted elsewhere. Assumed economies of scale are shown on lines below.

Remove Expense of Sale - 2016 and 2017 normalization of legal and engineering fees. Increase at 2% afterwards.

Bank Fees, etc. - 2018 assumed eliminated due to economies of scale.

Wages & Benefits - 2018 assumed 15% savings due to economies of scale. Increase at 2% afterwards.

Electric & Power - 2018 assumed 10% savings due to economies of scale. Increase at 2% afterwards.

Lab & Testing - 2018 assumed 25% savings due to economies of scale. Increase at 2% afterwards.

Insurance - 2018 assumed at industry average of 0.02% of Gross Property Plant & Equipment due to economies of scale. Increase at 2% afterwards.

Net Professional Services - 2018 assumed 50% savings due to economies of scale. Increase at 2% afterwards.

Repairs & Maintenance - 2018 assumed 10% savings due to economies of scale. Increase at 2% afterwards.

Uniforms - 2018 assumed at industry average of \$0.40 per customer due to economies of scale. Increase at 2% afterwards.

Postage - 2018 assumed at industry average of \$0.15 per customer due to economies of scale. Increase at 2% afterwards.

- (2) Depreciation - 2016 based on 2015 depreciation rate plus same rate on half of CAPX. Post-2016 based on OCNLD depreciation rate plus same rate on half of CAPX.
- (3) Line 5.
- (4) Line 22 + line 20.
- (5) Line 22.
- (6) Capital Expenditures - Year 2016 are from Engineers Assessment inventory post-2015 additions. Years 2017 - 2020 are from Engineers Assessment CIP. Post-2020 years are estimates at 1.75% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - 2011 - 2017 based on TWP's actual average of 0.96% of revenues. Subsequent years based on water industry -0.02% of revenues.
- (8) Discount rate is the current MUNI discount rate. Capitalization rate, "K", at 12/31/2016 equal to discount rate, where capitalization rate = K - g.
- (9) Discount rate is the current MUNI discount rate. Capitalization rate, "K", at 12/31/2016 adjusted for stated growth, "g", where capitalization rate = K - g.
- (10) Final year shown, line 32.
- (11) Final year shown, line 35.
- (12) Final year shown, line 35.
- (13) Developed on Market Multiples EXHIBIT 10.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investot owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment
TWP - Township

Income Approach
 Limerick Township Wastewater System's Assets
 Pro Forma and Estimated Operations With IOU Ownership
 DCF With Capitalization of Terminal Value Model and
 DCF With EBIT & EBITDA Terminal Value Model

					Est. & Actual	Budget Year
Actual Limerick Township Wastewater System's Assets						
	2012	2013	2014	2015	2016	2017
1. OPERATING REVENUES (1)						
2. Sewer Rental Fees	3,614,174	3,659,559	3,655,027	3,767,950	3,766,000	3,781,000
3. Tap Fees	53,000	150,000	1,296,818	131,113	652,775	1,370,584
4. Other (Rate Increase)	0	0	0	0	0	0
5. Total Operating Revenues	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
6. Rate Increase						
7. OPERATING EXPENSES (1)						
8. Current Operating Expenses	1,580,798	1,690,733	1,666,629	1,802,106	2,527,396	1,891,300
9. Remove Expense of Sale					(596,396)	(41,396)
10. LESS: EOS - Bank Fees, etc.						
11. LESS: EOS - Wages & Benefits						
12. LESS: EOS - Electric & Power						
13. LESS: EOS - Lab & Testing						
14. LESS: EOS - Insurance						
15. LESS: EOS - Net Professional Services						
16. LESS: EOS - Repairs & Maintenance						
17. LESS: EOS - Uniforms						
18. LESS: EOS - Postage						
19. ADD: PURTA & Reg Assessment						
20. Operating Expenses Before Depreciation	1,580,798	1,690,733	1,666,629	1,802,106	1,931,000	1,849,904
21. Depreciation (2)	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
22. Total Operating Expenses	3,166,163	3,271,408	3,237,810	3,388,685	3,525,175	2,956,723
23. Operating Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
24. Revenues (3)	3,667,174	3,809,559	4,951,845	3,899,063	4,418,775	5,151,584
25. EBITDA (4)	2,086,376	2,118,826	3,285,216	2,096,957	2,487,775	3,301,680
26. EBIT (5)	501,011	538,151	1,714,035	510,378	893,600	2,194,861
27. EBIT	501,011	538,151	1,714,035	510,378	893,600	2,194,861
28. (-) Income Taxes	0	0	0	0	0	0
29. Debt Free Net Income	501,011	538,151	1,714,035	510,378	893,600	2,194,861
30. (+) Depreciation & Amortization	1,585,365	1,580,675	1,571,181	1,586,579	1,594,175	1,106,819
31. (-) Capital Expenditures (6)	61,401	112,528	393,595	301,118	832,322	371,000
32. (-) Changes in Working Capital (7)	35,205	36,572	47,538	37,431	42,420	49,455
33. Debt Free Net Cash Flow	\$1,989,770	\$1,969,726	\$2,844,083	\$1,758,408	\$1,613,033	\$2,881,225
34. <small>PV Time Period (mid-year)</small>						
35. Present Value Factor: 6.63% (8)						
36. Present Value Debt Free Net Cash Flow						
37. Present Value Factor: 7.99% (9)						
38. Present Value Debt Free Net Cash Flow						
39. Present Value Factor: 4.63% (8)						
40. Present Value Debt Free Net Cash Flow						
41. Present Value Factor: 5.99% (9)						

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's 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 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
	2018	2019	2020	2021	2022	2023	2024
1. OPERATING REVENUES (1)							
2. Sewer Rental Fees	3,812,234	3,815,638	3,820,745	3,886,109	7,502,393	7,577,417	7,653,191
3. Tap Fees	0	0	0	0	0	0	0
4. Other (Rate Increase)	0	0	0	3,458,637	0	0	231,892
5. Total Operating Revenues	3,812,234	3,815,638	3,820,745	7,344,746	7,502,393	7,577,417	7,885,083
6.				Rate Increase			
				89%			3%
7. OPERATING EXPENSES (1)							
8. Current Operating Expenses	1,929,126	1,967,709	2,007,063	2,047,204	2,088,148	2,129,911	2,172,509
9. Remove Expense of Sale	(42,224)	(43,068)	(43,930)	(44,808)	(45,705)	(46,619)	(47,551)
10. LESS: EOS - Bank Fees, etc.	(4,641)	(4,734)	(4,828)	(4,925)	(5,024)	(5,124)	(5,227)
11. LESS: EOS - Wages & Benefits	(126,380)	(128,907)	(131,486)	(134,115)	(136,798)	(139,534)	(142,324)
12. LESS: EOS - Electric & Power	(36,139)	(36,861)	(37,599)	(38,351)	(39,118)	(39,900)	(40,698)
13. LESS: EOS - Lab & Testing	(13,464)	(13,733)	(14,008)	(14,288)	(14,574)	(14,865)	(15,163)
14. LESS: EOS - Insurance	(53,488)	(54,557)	(55,648)	(56,761)	(57,897)	(59,055)	(60,236)
15. LESS: EOS - Net Professional Services	(53,348)	(54,415)	(55,503)	(56,613)	(57,746)	(58,901)	(60,079)
16. LESS: EOS - Repairs & Maintenance	(23,119)	(23,581)	(24,052)	(24,534)	(25,024)	(25,525)	(26,035)
17. LESS: EOS - Uniforms	(820)	(837)	(854)	(871)	(888)	(906)	(924)
18. LESS: EOS - Postage	(12,420)	(12,669)	(12,922)	(13,180)	(13,444)	(13,713)	(13,987)
19. ADD: PURTA & Reg Assessment	94,352	85,468	84,108	83,402	103,453	104,350	104,776
20. Operating Expenses Before Depreciation	1,657,436	1,679,814	1,710,341	1,742,159	1,795,385	1,830,121	1,865,062
21. Depreciation (2)	1,111,445	1,114,362	1,119,370	1,131,533	1,148,364	1,165,446	1,182,781
22. Total Operating Expenses	2,768,881	2,794,176	2,829,711	2,873,692	2,943,749	2,995,567	3,047,844
23. Operating Income	1,043,353	1,021,462	991,034	4,471,054	4,558,644	4,581,850	4,837,239
24. Revenues (3)	3,812,234	3,815,638	3,820,745	7,344,746	7,502,393	7,577,417	7,885,083
25. EBITDA (4)	2,154,798	2,135,824	2,110,404	5,602,587	5,707,008	5,747,296	6,020,021
26. EBIT (5)	1,043,353	1,021,462	991,034	4,471,054	4,558,644	4,581,850	4,837,239
27. EBIT	1,043,353	1,021,462	991,034	4,471,054	4,558,644	4,581,850	4,837,239
28. (-) Income Taxes	375,607	367,726	356,772	1,609,579	1,641,112	1,649,466	1,741,406
29. Debt Free Net Income	667,746	653,736	634,262	2,861,475	2,917,532	2,932,384	3,095,833
30. (+) Depreciation & Amortization	1,111,445	1,114,362	1,119,370	1,131,533	1,148,364	1,165,446	1,182,781
31. (-) Capital Expenditures (6)	229,600	151,200	606,200	1,131,107	1,147,933	1,165,008	1,182,338
32. (-) Changes in Working Capital (7)	(762)	(763)	(764)	(1,469)	(1,500)	(1,515)	(1,577)
33. Debt Free Net Cash Flow	\$1,550,353	\$1,617,661	\$1,148,197	\$2,863,370	\$2,919,463	\$2,934,337	\$3,097,854
34. PV Time Period (mid-year)	0.5	1.5	2.5	3.5	4.5	5.5	6.5
35. Present Value Factor: 6.63% (8)	0.9684	0.9082	0.8517	0.7988	0.7491	0.7025	0.6588
36. Present Value Debt Free Net Cash Flow	\$1,501,362	\$1,469,160	\$977,919	\$2,287,260	\$2,186,970	\$2,061,372	\$2,040,866
37. Present Value Factor: 7.99% (9)	0.9623	0.8911	0.8252	0.7641	0.7076	0.6552	0.6067
38. Present Value Debt Free Net Cash Flow	\$1,491,905	\$1,441,498	\$947,492	\$2,187,901	\$2,065,812	\$1,922,578	\$1,879,468
39. Present Value Factor: 4.63% (8)	0.9776	0.9344	0.8930	0.8535	0.8157	0.7796	0.7451
40. Present Value Debt Free Net Cash Flow	\$1,515,626	\$1,511,543	\$1,025,340	\$2,443,886	\$2,381,406	\$2,287,609	\$2,308,211
41. Present Value Factor: 5.99% (9)	0.9713	0.9164	0.8646	0.8158	0.7697	0.7262	0.6851

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's Assets
Pro Forma and Estimated Operations With IOU Ownership
DCF With Capitalization of Terminal Value Model and
DCF With EBIT & EBITDA Terminal Value Model

	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
	2025	2026	2027	2028	2029	2030
1. OPERATING REVENUES (1)						
2. Sewer Rental Fees	7,963,934	8,043,573	8,124,009	8,453,868	8,538,407	8,623,791
3. Tap Fees	0	0	0	0	0	0
4. Other (Rate Increase)	0	0	246,157	0	0	261,301
5. Total Operating Revenues	7,963,934	8,043,573	8,370,166	8,453,868	8,538,407	8,885,092
6. Rate Increase			3%			3%
7. OPERATING EXPENSES (1)						
8. Current Operating Expenses	2,215,959	2,260,279	2,305,484	2,351,594	2,398,626	2,446,598
9. Remove Expense of Sale	(48,502)	(49,472)	(50,461)	(51,471)	(52,500)	(53,550)
10. LESS: EOS - Bank Fees, etc.	(5,331)	(5,438)	(5,546)	(5,657)	(5,771)	(5,886)
11. LESS: EOS - Wages & Benefits	(145,171)	(148,074)	(151,036)	(154,056)	(157,137)	(160,280)
12. LESS: EOS - Electric & Power	(41,512)	(42,342)	(43,189)	(44,053)	(44,934)	(45,832)
13. LESS: EOS - Lab & Testing	(15,466)	(15,775)	(16,091)	(16,413)	(16,741)	(17,076)
14. LESS: EOS - Insurance	(61,440)	(62,669)	(63,923)	(65,201)	(66,505)	(67,835)
15. LESS: EOS - Net Professional Services	(61,280)	(62,506)	(63,756)	(65,031)	(66,332)	(67,658)
16. LESS: EOS - Repairs & Maintenance	(26,556)	(27,087)	(27,629)	(28,181)	(28,745)	(29,320)
17. LESS: EOS - Uniforms	(942)	(961)	(980)	(1,000)	(1,020)	(1,040)
18. LESS: EOS - Postage	(14,267)	(14,552)	(14,843)	(15,140)	(15,443)	(15,752)
19. ADD: PURTA & Reg Assessment	106,525	106,974	107,426	109,283	109,760	110,240
20. Operating Expenses Before Depreciation	1,902,017	1,938,376	1,975,456	2,014,674	2,053,259	2,092,608
21. Depreciation (2)	1,200,375	1,218,232	1,236,352	1,254,743	1,273,407	1,292,349
22. Total Operating Expenses	3,102,392	3,156,608	3,211,808	3,269,417	3,326,665	3,384,958
23. Operating Income	4,861,542	4,886,965	5,158,358	5,184,451	5,211,742	5,500,134
24. Revenues (3)	7,963,934	8,043,573	8,370,166	8,453,868	8,538,407	8,885,092
25. EBITDA (4)	6,061,917	6,105,197	6,394,710	6,439,194	6,485,148	6,792,484
26. EBIT (5)	4,861,542	4,886,965	5,158,358	5,184,451	5,211,742	5,500,134
27. EBIT	4,861,542	4,886,965	5,158,358	5,184,451	5,211,742	5,500,134
28. (-) Income Taxes	1,750,155	1,759,308	1,857,009	1,866,402	1,876,227	1,980,048
29. Debt Free Net Income	3,111,387	3,127,657	3,301,349	3,318,049	3,335,515	3,520,086
30. (+) Depreciation & Amortization	1,200,375	1,218,232	1,236,352	1,254,743	1,273,407	1,292,349
31. (-) Capital Expenditures (6)	1,199,925	1,217,774	1,235,888	1,254,272	1,272,929	1,291,864
32. (-) Changes in Working Capital (7)	(1,593)	(1,609)	(1,674)	(1,691)	(1,708)	(1,777)
33. Debt Free Net Cash Flow	\$3,113,430	\$3,129,724	\$3,303,487	\$3,320,211	\$3,337,700	\$3,522,349
34. PV Time Period (mid-year)	7.5	8.5	9.5	10.5	11.5	12.5
35. Present Value Factor: 6.63% (8)	0.6179	0.5795	0.5434	0.5096	0.4780	0.4482
36. Present Value Debt Free Net Cash Flow	\$1,923,788	\$1,813,675	\$1,795,115	\$1,691,980	\$1,595,421	\$1,578,717
37. Present Value Factor: 7.99% (9)	0.5619	0.5203	0.4818	0.4461	0.4131	0.3826
38. Present Value Debt Free Net Cash Flow	\$1,749,436	\$1,628,395	\$1,591,620	\$1,481,146	\$1,378,804	\$1,347,651
39. Present Value Factor: 4.63% (8)	0.7122	0.6806	0.6505	0.6217	0.5942	0.5679
40. Present Value Debt Free Net Cash Flow	\$2,217,385	\$2,130,090	\$2,148,918	\$2,064,175	\$1,983,261	\$2,000,342
41. Present Value Factor: 5.99% (9)	0.6464	0.6099	0.5754	0.5429	0.5122	0.4833

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Income Approach
Limerick Township Wastewater System's 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 @ 6.63%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,522,349
Divided by Capitalization Factor (8)	<u>6.63%</u>
13th Year Terminal Value	53,127,429
13th Year Present Value Factor (11)	<u>0.4482</u>
Present Value of Terminal Value	23,811,714
Present Value Debt Free Net	
Cash Flow for 13 Years	<u>22,923,604</u>
Indicated Value	<u>\$46,735,317</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 6.63%			
		Multiples (13)	Terminal Value
Projected EBIT	\$5,500,134	24.7	\$135,853,319
Projected EBITDA	6,792,484	15.8	<u>107,321,240</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			116,736,826
13th Year Present Value Factor (11)			<u>0.4482</u>
Present Value of Terminal Value			52,321,445
Present Value Debt Free Net			
Cash Flow for 13 Years			<u>22,923,604</u>
Indicated Value			<u>\$75,245,049</u>

DCF With Capitalization of Terminal Value Model @ 7.99%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,522,349
Divided by Capitalization Factor (9)	<u>7.99%</u>
13th Year Terminal Value	44,084,462
13th Year Present Value Factor (12)	<u>0.3826</u>
Present Value of Terminal Value	16,866,715
Present Value Debt Free Net	
Cash Flow for 13 Years	<u>21,113,705</u>
Indicated Value	<u>\$37,980,421</u>

DCF With EBIT & EBITDA Terminal Value Model - Discount Rate of 7.99%			
		Multiples (13)	Terminal Value
Projected EBIT	\$5,500,134	24.7	\$135,853,319
Projected EBITDA	6,792,484	15.8	<u>107,321,240</u>
Weighted (1/3 EBIT 2/3 EBITDA) Terminal Value			116,736,826
13th Year Present Value Factor (12)			<u>0.3826</u>
Present Value of Terminal Value			44,663,510
Present Value Debt Free Net			
Cash Flow for 13 Years			<u>21,113,705</u>
Indicated Value			<u>\$65,777,215</u>

DCF With Capitalization of Terminal Value Model @ 4.63%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,522,349
Divided by Capitalization Factor (8)	<u>4.63%</u>
13th Year Terminal Value	76,076,642
13th Year Present Value Factor (11)	<u>0.4482</u>
Present Value of Terminal Value	34,097,551
Present Value Debt Free Net	
Cash Flow for 13 Years	<u>22,923,604</u>
Indicated Value	<u>\$57,021,155</u>

DCF With Capitalization of Terminal Value Model @ 5.99%	
	Terminal Value
Projected Debt Free Net Cash Flow (10)	\$3,522,349
Divided by Capitalization Factor (9)	<u>5.99%</u>
13th Year Terminal Value	58,803,815
13th Year Present Value Factor (12)	<u>0.3826</u>
Present Value of Terminal Value	22,498,340
Present Value Debt Free Net	
Cash Flow for 13 Years	<u>21,113,705</u>
Indicated Value	<u>\$43,612,045</u>

See last page of this EXHIBIT for notes and assumptions.

Income Approach
Limerick Township Wastewater System's 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:

- Sewer Rental Fees - Pre-2016 are actuals. Post-2015 based on customer growth (population growth) and average revenue per customer. Rate increases (Other rate increase line item) are added year after they occur.
- Tap Fees - Pre-2017 are actuals. Post-2016 based on Engineers Assessment, 2017 - 2021. No tap fees post-2017 with assumed purchase by IOU in 2017.
- Other (Rate Increase) - Assumed purchase by IOU in 2017. 2021 assumed 89% rate increase so EBIT is 10.5% of investor's capital (similar to IOU water industry). Purchase includes pledge not to increase rates for 3 years (i.e., 2021). Post-2021 assumes 3.03% rate increase every three years to account for expense increases (2%) less growth in customers (-1.0%). Rate increases are added into Sewer Rental Fees year after they occur.
- OPERATING EXPENSES - increase at 2% annually after 2017 unless noted elsewhere. Assumed economies of scale are shown on lines below.
- Remove Expense of Sale - 2016 and 2017 normalization of legal and engineering fees. Increase at 2% afterwards.
- Bank Fees, etc. - 2018 assumed eliminated due to economies of scale.
- Wages & Benefits - 2018 assumed 15% savings due to economies of scale. Increase at 2% afterwards.
- Electric & Power - 2018 assumed 10% savings due to economies of scale. Increase at 2% afterwards.
- Lab & Testing - 2018 assumed 25% savings due to economies of scale. Increase at 2% afterwards.
- Insurance - 2018 assumed at industry average of 0.02% of Gross Property Plant & Equipment due to economies of scale. Increase at 2% afterwards.
- Net Professional Services - 2018 assumed 50% savings due to economies of scale. Increase at 2% afterwards.
- Repairs & Maintenance - 2018 assumed 10% savings due to economies of scale. Increase at 2% afterwards.
- Uniforms - 2018 assumed at industry average of \$0.40 per customer due to economies of scale. Increase at 2% afterwards.
- Postage - 2018 assumed at industry average of \$0.15 per customer due to economies of scale. Increase at 2% afterwards.
- PURTA & Reg Assessment - 2018 assumed due to IOU purchase in 2017.
- (2) Depreciation - 2016 based on 2015 depreciation rate plus same rate on half of CAPX. Post-2016 based on OCNLD depreciation rate plus same rate on half of CAPX.
- (3) Line 5.
- (4) Line 23 + line 21.
- (5) Line 23.
- (6) Capital Expenditures - Year 2016 are from Engineers Assessment inventory post-2015 additions. Years 2017 - 2020 are from Engineers Assessment CIP @ 30% reduction in cost due to the fact governmental agencies must pay prevailing wages while private companies do not. Post-2020 years are estimates at 1.75% of prior year-end GROSS Property, plant and equipment.
- (7) Changes in Working Capital - 2011 - 2017 based on TWP's actual average of 0.96% of revenues. Subsequent years based on water industry -0.02% of revenues.
- (8) Discount rate is the current lower end of the IOU discount rate. Capitalization rate, "K", at 12/31/2016 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 12/31/2016 adjusted for stated growth, "g", where capitalization rate = K - g.
- (10) Final year shown, line 33.
- (11) Final year shown, line 35.
- (12) Final year shown, line 37.
- (13) Developed on Market Multiples EXHIBIT 10.

Terms:

CAPX - Capital Expenditures
CIP - Capital improvement plan
Dep - Depreciation expense
GROSS PPE - GROSS Property, plant and equipment
IOU - Investot owned utility
MUNI - Large regional municipally owned utility
NET PPE - NET Property, plant and equipment
TWP - Township

Market Multiples Method
Limerick Township Wastewater System's Assets
2016 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 12/31/2016	Limerick's Growth & Risk Adjustment	Limerick's Risk Adjusted Valuation Multiples 12/31/2016	Limerick's Market Multiples Valuation	
Risk Adjusted Multiple						
1. <u>Limerick Township Wastewater System's Assets</u>						
2.	Investor Provided Capital	\$53,541,921	1.84	95.00%	1.75	\$93,698,362
3.	Gross PP&E	\$63,480,402	1.08	127.00%	1.37	86,968,151
4.	Net PP&E	\$46,153,867	1.47	127.00%	1.87	86,307,731
5.	Revenues	\$4,418,775	5.99	101.00%	6.05	26,733,589
6.	EBITDA	\$2,487,775	14.28	111.00%	15.85	39,431,234
7.	EBIT	\$893,600	20.63	120.00%	24.76	22,125,546
8.	Customers	5,433	\$6,791	200.00%	\$13,582	73,791,006
9.	Population	19,009	\$2,062	200.00%	\$4,124	78,393,116
10.						
11.	Average					<u>\$63,431,092</u>

Conclusion of Market Multiple Method Valuation

		<u>Low</u>	<u>High</u>	<u>Conclusion</u>
12.	Capital Items	\$86,307,731	\$93,698,362	\$90,003,047
13.	(Items 2 -4)			
14.	Income Statement Items	22,125,546	39,431,234	-
15.	(Items 5 -7)			
16.	Demographics Items	73,791,006	78,393,116	76,092,061
17.	(Items 8 -9)			
			Conclusion	<u>\$83,047,554</u>

Market Multiples Method
Limerick Township Wastewater System's Assets
Development of Market Multiples Method for the Market Multiples Method

	Latest Quarter End			Latest 12 Months			2015		12/31/2016
	Gross PP&E (\$ Mill)	Net PP&E (\$ Mill)	Invest. Perm. Capital (\$ Mill)	12 Mos. Rev. (\$ Mill)	12 Mos. EBITDA (\$ Mill)	12 Mos. EBIT (\$ Mill)	Customers	Population	Enterprise Value (\$ Mill)
American States Water Co	\$1,686.038	\$1,128.588	\$811.696	\$439.402	\$153.823	\$114.508	283,997	1,000,000	\$2,061.567
American Water Works Company Inc	\$18,178.000	\$13,361.000	\$11,091.000	\$3,282.595	\$1,526.359	\$1,063.855	3,252,691	12,100,000	\$19,668.297
Aqua America Inc	\$6,386.441	\$4,901.484	\$3,558.693	\$820.143	\$457.643	\$328.238	920,381	2,890,800	\$7,182.382
Artesian Resources Corp	\$533.749	\$423.849	\$238.476	\$78.422	\$34.876	\$25.801	81,400	301,000	\$398.911
California Water Service Group	\$2,667.634	\$1,817.751	\$1,207.548	\$596.866	\$155.671	\$92.533	508,404	1,600,000	\$2,223.530
Connecticut Water Service Inc	\$793.070	\$583.789	\$438.547	\$98.027	\$43.294	\$29.742	123,633	400,000	\$839.621
Middlesex Water Co	\$640.260	\$506.967	\$351.510	\$132.023	\$53.897	\$41.247	108,720	390,000	\$851.030
SJW Corp.	\$1,693.498	\$1,176.184	\$775.837	\$348.013	\$152.092	\$108.412	241,000	1,089,000	\$1,567.147
York Water Company (The)	\$334.837	\$266.166	\$198.203	\$47.316	\$29.171	\$22.815	66,000	194,000	\$568.965
Average	\$3,657.059	\$2,685.086	\$2,074.612	\$649.201	\$289.647	\$203.017	620,692	2,218,311	\$3,929.050
Max	\$18,178.000	\$13,361.000	\$11,091.000	\$3,282.595	\$1,526.359	\$1,063.855	3,252,691	12,100,000	\$19,668.297
Min	\$334.837	\$266.166	\$198.203	\$47.316	\$29.171	\$22.815	66,000	194,000	\$398.911
Median	\$1,686.038	\$1,128.588	\$775.837	\$348.013	\$152.092	\$92.533	241,000	1,000,000	\$1,567.147

	Enterprise Value as a Multiple of								Population Per Customer
	Invest. Capital (x)	Gross PP&E (x)	Net PP&E (x)	Rev. (x)	EBITDA (x)	EBIT (x)	Customers (\$)	Population (\$)	
American States Water Co	2.32	1.22	1.83	4.69	13.40	18.00	\$7,259	\$2,062	3.52
American Water Works Company Inc	1.63	1.08	1.47	5.99	12.89	18.49	\$6,047	\$1,625	3.72
Aqua America Inc	1.95	1.12	1.47	8.76	15.69	21.88	\$7,804	\$2,485	3.14
Artesian Resources Corp	1.63	0.75	0.94	5.09	11.44	15.46	\$4,901	\$1,325	3.70
California Water Service Group	1.75	0.83	1.22	3.73	14.28	24.03	\$4,374	\$1,390	3.15
Connecticut Water Service Inc	1.81	1.06	1.44	8.57	19.39	28.23	\$6,791	\$2,099	3.24
Middlesex Water Co	2.29	1.33	1.68	6.45	15.79	20.63	\$7,828	\$2,182	3.59
SJW Corp.	1.84	0.93	1.33	4.50	10.30	14.46	\$6,503	\$1,439	4.52
York Water Company (The)	2.87	1.70	2.14	12.02	19.50	24.94	\$8,621	\$2,933	2.94
Average	2.01	1.11	1.50	6.64	14.74	20.68	\$6,681	\$1,949	3.50
Max	2.87	1.70	2.14	12.02	19.50	28.23	\$8,621	\$2,933	4.52
Min	1.63	0.75	0.94	3.73	10.30	14.46	\$4,374	\$1,325	2.94
Median	1.84	1.08	1.47	5.99	14.28	20.63	\$6,791	\$2,062	3.52

Market Multiples Method
Limerick Township Wastewater System's Assets
Quantification of the Effective Risk/Growth Adjustments

	Net PP&E	Gross PP&E	Invest. Capital
Comparable Group Multiple	1.47	1.08	1.84
Implied Capitalization Rate (1÷Multiple)	68.03%	92.59%	54.35%
Ratio of Net PP&E Mult. to Invest. Capital Mult.	125.2%		
Less 1	- 1.00		
Difference in Capital Source due to Contributions	25.17%		
Assumed Investor Financed (1-Difference in Capital Source)	74.83%	74.83%	
Implied Capitalization Rate (1÷Multiple)	X 68.03%	92.59%	
Not Contributed Cap. Rate	50.90%	69.29%	
Not Contributed Multiple (1÷Cap. Rate)	1.96	1.44	
Base Risk Factor	X 95%	95%	
Subject Company Adjusted Multiple	1.87	1.37	
Subject Company Adjusted Multiple	1.87	1.37	
Comparable Group Multiple	÷ 1.47	1.08	
Effective Risk/Growth Adjustment	127%	127%	

	Rev.	EBITDA	EBIT
Comparable Group Multiple	5.99	14.28	20.63
Implied Capitalization Rate (1÷Multiple)	16.69%	7.00%	4.85%
(-) Growth Adjustment	- 1.00%	1.00%	1.00%
Adjusted Capitalization Rate (k-G)	15.69%	6.00%	3.85%
Adjusted Multiple (1÷Adj. Cap. Rate))	6.37	16.66	25.99
Base Risk Factor	X 95%	95%	95%
Subject Company Adjusted Multiple	6.05	15.83	24.69
Subject Company Adjusted Multiple	6.05	15.83	24.69
Comparable Group Multiple	÷ 5.99	14.28	20.63
Effective Risk/Growth Adjustment	101%	111%	120%

Selected Transactions Method
For Limerick Township Wastewater System's Assets
Based on 2016 Acquisitions of Assets of Water or Sewer System, Without Discount for Customer Contributions:
Municipal Authority of the City of Mckeesport and the New Garden Township and Authority's Sewage Collection and Treatment System

Municipal Authority of the City of Mckeesport

Purchase Price was: \$156,000,000

	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>
1. Investor Provided Capital	\$83,903,219	1.86
2. Gross PP&E	\$91,435,797	1.71
3. Net PP&E	\$73,813,794	2.11
4. Revenues	\$13,047,844	11.96
5. EBITDA	\$6,180,616	25.24
6. EBIT	\$3,811,679	40.93
7. Customers	20,320	\$7,677
8. Population	61,752	\$2,526
9.		
10. Average		

Limerick Township Wastewater System's Assets

	<u>Limerick Township Wastewater System's Assets's Company Statistics</u>	<u>Selected Transactions Multiples Valuation</u>
Investor Provided Capital	\$53,541,921	99,549,693
Gross PP&E	\$63,480,402	108,304,877
Net PP&E	\$46,153,867	97,542,788
Revenues	\$4,418,775	52,830,866
EBITDA	\$2,487,775	62,791,945
EBIT	\$893,600	36,572,245
Customers	5,433	41,710,039
Population	19,009	48,021,182
		<u>\$68,415,454</u>

New Garden Township and Authority's Sewage
Collection and Treatment System

Purchase Price was: \$29,500,000

	<u>Subject Company Statistics</u>	<u>Transaction Multiple</u>
11. Investor Provided Capital	\$23,001,140	1.28
12. Gross PP&E	\$25,988,330	1.14
13. Net PP&E	\$17,967,319	1.64
14. Revenues	\$2,261,294	13.05
15. EBITDA	\$907,386	32.51
16. EBIT	\$499,638	59.04
17. Customers	1,796	\$16,425
18. Population	12,085	\$2,441
19.		
20. Average		

Limerick Township Wastewater System's Assets

	<u>Limerick Township Wastewater System's Assets's Company Statistics</u>	<u>Selected Transactions Multiples Valuation</u>
Investor Provided Capital	\$53,541,921	68,669,930
Gross PP&E	\$63,480,402	72,058,184
Net PP&E	\$46,153,867	75,778,644
Revenues	\$4,418,775	57,645,694
EBITDA	\$2,487,775	80,879,981
EBIT	\$893,600	52,760,621
Customers	5,433	89,239,143
Population	19,009	46,401,779
		<u>\$67,929,247</u>

Conclusion of Selected Transactions Method Valuation

	<u>Low</u>	<u>High</u>	<u>Conclusion</u>
21. Capital Items	68,669,929.82	108,304,876.61	\$88,487,403
22. (Items 1 - 3; 11 - 13)			
23. Income Statement Items	36,572,245.47	80,879,981.07	-
24. (Items 4 - 6; 14 - 16)			
25. Demographics Items	41,710,039.37	89,239,142.54	65,474,591
26. (Items 7 - 8; 17 - 18)			
		Conclusion	<u>\$76,980,997</u>

Source of Information: Subject Company's Audited Financials

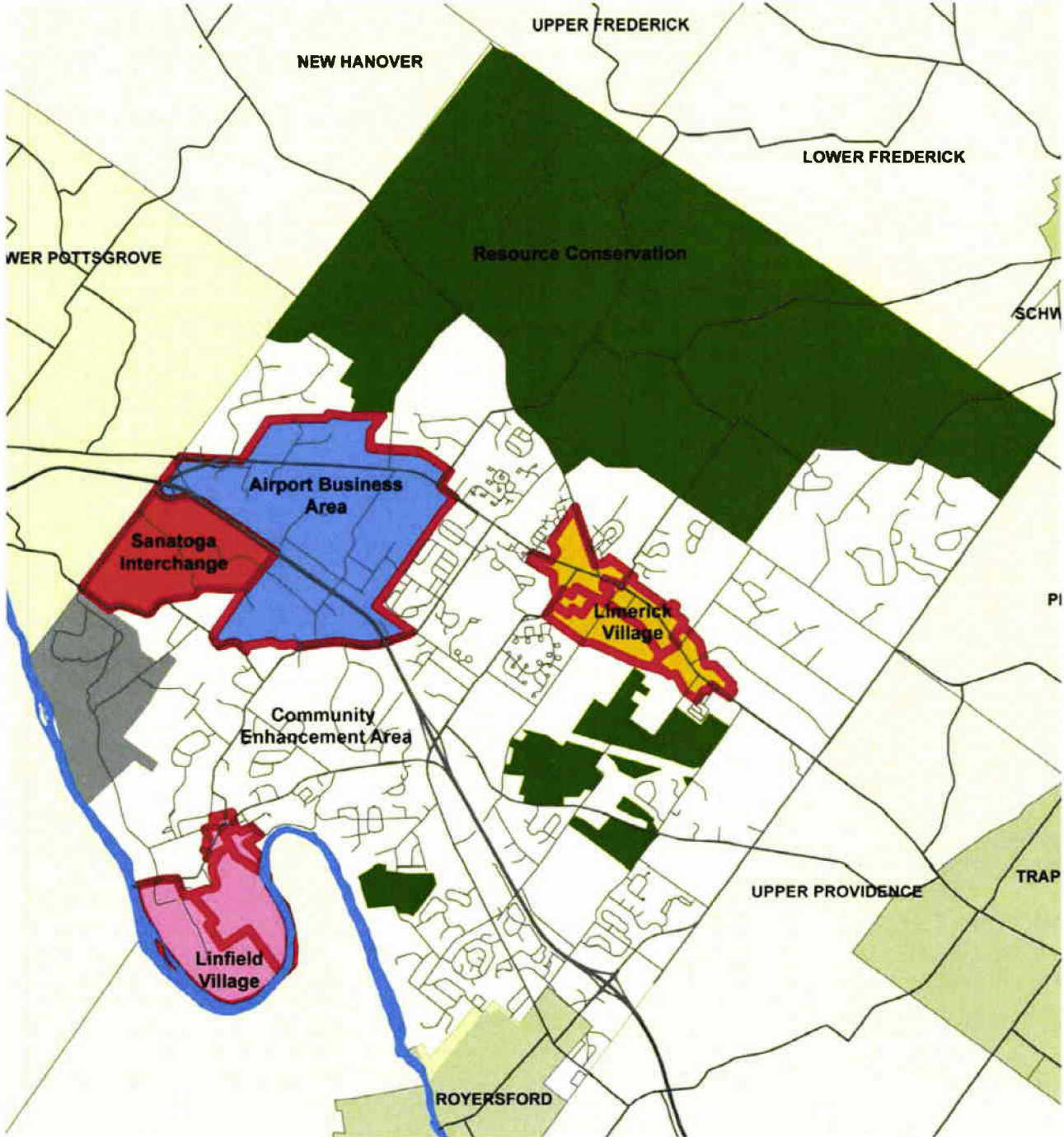
**Limerick Township Wastewater System's Assets
Summary of Approach Results and
Fair Market Value Conclusion at Appraisal Date**

<u>Valuation Approach</u>	<u>Indicated Value</u>	<u>Weight</u>	<u>Weighted Value</u>	<u>Conclusion</u>
Cost Approach	\$86,086,756	33%	\$28,692,716	
Income Approach	75,204,407	33%	25,065,629	
Market Approach	79,002,980	<u>33%</u>	<u>26,339,594</u>	
		<u>100%</u>	<u>\$80,097,939</u>	Conclusion \$80,098,000

WORKPAPERS

4. Growth Management Recommendations

Figure 4.1 Future Land Use



Legend

- Growth Areas**
- Airport Business Area
 - Limerick Village
 - Linfield Village
 - Sanatoga Interchange
 - Community Enhancement Area
 - Resource Conservation
 - Utility

LIMERICK TOWNSHIP
STATEMENT OF NET ASSETS
PROPRIETARY FUND
December 31, 2011

	<u>Sewer Fund</u>
ASSETS	
Cash and cash equivalents	\$ 3,820,324
Accounts receivable, net of allowance of \$54,000	867,621
Other assets	<u>3,843</u>
TOTAL CURRENT ASSETS	<u>4,691,788</u>
PROPERTY AND EQUIPMENT, net	<u>40,021,525</u>
OTHER ASSETS, unamortized bond issue costs, net of accumulated amortization of \$43,237	<u>113,066</u>
TOTAL ASSETS	\$ <u>44,826,379</u>
LIABILITIES AND NET ASSETS	
CURRENT LIABILITIES	
Accounts payable	\$ 77,821
Accrued salaries and benefits	21,258
Accrued interest	11,066
Developer escrows and deposits	8,251
Bonds and notes payable	<u>824,000</u>
TOTAL CURRENT LIABILITIES	<u>942,396</u>
NONCURRENT LIABILITIES	
Bonds and notes payable	<u>9,479,022</u>
TOTAL LIABILITIES	<u>10,421,418</u>
NET ASSETS	
Invested in capital assets, net of related debt	29,831,569
Unrestricted	<u>4,573,392</u>
TOTAL NET ASSETS	<u>34,404,961</u>
TOTAL LIABILITIES AND NET ASSETS	\$ <u>44,826,379</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND
CHANGES IN NET ASSETS
PROPRIETARY FUND
Year Ended December 31, 2011

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services	\$ <u>3,571,770</u>
OPERATING EXPENSES	
King Road Plant	600,346
Possum Hollow Plant	125,900
General and administrative	186,156
General operating	634,599
Contractual and professional services	94,270
Depreciation	1,577,810
Amortization	8,883
TOTAL OPERATING EXPENSES	<u>3,227,964</u>
OPERATING INCOME	<u>343,806</u>
NONOPERATING REVENUES (EXPENSES)	
Interest and investment revenue	41,076
Miscellaneous	22,569
Interest expense	(259,130)
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(195,485)</u>
INCOME BEFORE CAPITAL CONTRIBUTIONS AND TRANSFERS	<u>148,321</u>
CONTRIBUTIONS AND TRANSFERS	
Capital contributions	445,678
Transfers in	307,964
Transfers out	(560,002)
TOTAL CONTRIBUTIONS AND TRANSFERS	<u>193,640</u>
CHANGE IN NET ASSETS	341,961
NET ASSETS AT BEGINNING OF YEAR	<u>34,063,000</u>
NET ASSETS AT END OF YEAR	<u>\$ <u>34,404,961</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUND
Year Ended December 31, 2011

	<u>Sewer Fund</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	\$ 3,588,114
Cash payments to suppliers for goods and services	(1,217,893)
Cash payments to employees for services	(557,786)
Other operating cash receipts	22,569
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>1,835,004</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of property and equipment	(110,002)
Principal paid on revenue bonds	(796,000)
Interest paid on revenue bonds	(255,879)
Transfers to other funds	(560,002)
Transfers from other funds	307,964
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	<u>(1,413,919)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Decrease in restricted cash	189
Interest received on investments	41,076
NET CASH PROVIDED BY INVESTING ACTIVITIES	<u>41,265</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS	462,350
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>3,357,974</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 3,820,324</u>

LIMERICK TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUND
December 31, 2012

	<u>Sewer Fund</u>
ASSETS	
Cash and cash equivalents	\$ 4,702,884
Accounts receivable, net of allowance of \$54,000	949,662
Other assets	<u>3,958</u>
TOTAL CURRENT ASSETS	5,656,504
PROPERTY AND EQUIPMENT, net	<u>38,663,437</u>
TOTAL ASSETS	<u>44,319,941</u>
DEFERRED OUTFLOWS OF RESOURCES	
Deferred charges on refunding, net	<u>77,563</u>
CURRENT LIABILITIES	
Accounts payable	33,869
Accrued salaries and benefits	2,247
Accrued interest	11,066
Developer escrows and deposits	8,251
Due to other funds	560,000
Bonds and notes payable	<u>858,000</u>
TOTAL CURRENT LIABILITIES	1,473,433
NONCURRENT LIABILITIES	
Bonds and notes payable	<u>8,701,836</u>
TOTAL LIABILITIES	<u>10,175,269</u>
NET POSITION	
Net investment in capital assets	29,103,601
Unrestricted	<u>5,118,634</u>
TOTAL NET POSITION	\$ <u><u>34,222,235</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND
CHANGES IN NET POSITION
PROPRIETARY FUND
Year Ended December 31, 2012

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services	\$ 3,667,260
Federal grants	<u>23,292</u>
TOTAL OPERATING REVENUES	<u>3,690,552</u>
OPERATING EXPENSES	
King Road Plant	548,257
Possum Hollow Plant	124,514
General and administrative	146,585
General operating	650,193
Contractual and professional services	111,249
Depreciation	<u>1,585,365</u>
TOTAL OPERATING EXPENSES	<u>3,166,163</u>
OPERATING INCOME	<u>524,389</u>
NONOPERATING REVENUES (EXPENSES)	
Interest and investment revenue	22,983
Miscellaneous	30,206
Interest expense	<u>(253,114)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(199,925)</u>
INCOME BEFORE CONTRIBUTIONS AND TRANSFERS	<u>324,464</u>
CONTRIBUTIONS AND TRANSFERS	
Capital contributions	165,876
Transfers out	<u>(560,000)</u>
TOTAL CONTRIBUTIONS AND TRANSFERS	<u>(394,124)</u>
CHANGE IN NET POSITION	<u>(69,660)</u>
NET POSITION AT BEGINNING OF YEAR, as restated	<u>34,291,895</u>
NET POSITION AT END OF YEAR	<u>\$ 34,222,235</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUND
Year Ended December 31, 2012

	<u>Sewer Fund</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	\$ 3,585,219
Cash payments to suppliers for goods and services	(940,845)
Cash payments to employees for services	(703,031)
Other operating cash receipts	53,498
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>1,994,841</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of property and equipment	(61,401)
Principal paid on revenue bonds	(824,000)
Interest paid on revenue bonds	(249,863)
Transfers to other funds	(560,000)
Due to other funds	560,000
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	<u>(1,135,264)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Interest received on investments	<u>22,983</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS	882,560
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>3,820,324</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 4,702,884</u>
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	\$ 524,389
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	1,585,365
Miscellaneous income	30,206
Increase in	
Accounts receivable	(82,041)
Other assets	(115)
Decrease in accounts payable and accrued expenses	<u>(62,963)</u>
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>\$ 1,994,841</u>
SUPPLEMENTAL DISCLOSURES	
Noncash capital activities	
Contribution of capital assets from developers	\$ 165,876

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUND
December 31, 2013

	<u>Sewer Fund</u>
ASSETS	
Cash and cash equivalents	\$ 4,675,895
Accounts receivable, net of allowance of \$54,000	937,521
Other assets	<u>3,963</u>
TOTAL CURRENT ASSETS	5,617,379
PROPERTY AND EQUIPMENT, net	<u>37,195,290</u>
TOTAL ASSETS	<u>42,812,669</u>
DEFERRED OUTFLOWS OF RESOURCES	
Deferred charges on refunding, net	<u>71,519</u>
CURRENT LIABILITIES	
Accounts payable	79,365
Accrued salaries and benefits	4,179
Accrued interest	11,066
Developer escrows and deposits	8,251
Bonds and notes payable	<u>900,000</u>
TOTAL CURRENT LIABILITIES	1,002,861
NONCURRENT LIABILITIES	
Bonds and notes payable	<u>7,799,043</u>
TOTAL LIABILITIES	<u>8,801,904</u>
NET POSITION	
Net investment in capital assets	28,496,247
Unrestricted	<u>5,586,037</u>
TOTAL NET POSITION	\$ <u><u>34,082,284</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND
CHANGES IN NET POSITION
PROPRIETARY FUND
Year Ended December 31, 2013

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services	\$ <u>3,810,008</u>
OPERATING EXPENSES	
King Road Plant	644,278
Possum Hollow Plant	134,225
General and administrative	151,808
General operating	682,252
Contractual and professional services	78,170
Depreciation	1,580,675
TOTAL OPERATING EXPENSES	<u>3,271,408</u>
OPERATING INCOME	<u>538,600</u>
NONOPERATING REVENUES (EXPENSES)	
Interest and investment revenue	17,560
Gain on sale of capital asset	600
Miscellaneous	28,335
Interest expense	(225,046)
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(178,551)</u>
INCOME BEFORE CONTRIBUTIONS AND TRANSFERS	360,049
CONTRIBUTIONS AND TRANSFERS	
Transfers out	<u>(500,000)</u>
CHANGE IN NET POSITION	(139,951)
NET POSITION AT BEGINNING OF YEAR	<u>34,222,235</u>
NET POSITION AT END OF YEAR	<u>\$ <u>34,082,284</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUND
Year Ended December 31, 2013

	<u>Sewer Fund</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	\$ 3,822,149
Cash payments to suppliers for goods and services	(1,440,972)
Cash payments to employees for services	(762,338)
Other operating cash receipts	28,335
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>1,647,174</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of property and equipment	(112,528)
Principal paid on revenue bonds	(858,000)
Interest paid on revenue bonds	(221,795)
Proceeds from the sale of assets	600
Transfers to other funds	(500,000)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	<u>(1,691,723)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Interest received on investments	<u>17,560</u>
NET DECREASE IN CASH AND CASH EQUIVALENTS	(26,989)
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>4,702,884</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 4,675,895</u>
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	\$ 538,600
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	1,580,675
Miscellaneous income	28,335
(Increase) decrease in	
Accounts receivable	12,141
Other assets	(5)
Increase (decrease) in	
Accounts payable and accrued expenses	47,428
Due to other funds	(560,000)
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>\$ 1,647,174</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUND
DECEMBER 31, 2014

Schedule 13, 12 of 154

	<u>Sewer Fund</u>
ASSETS	
Cash and cash equivalents	\$ 5,939,003
Accounts receivable, net of allowance of \$54,000	929,245
Other assets	<u>3,963</u>
TOTAL CURRENT ASSETS	6,872,211
PROPERTY AND EQUIPMENT, net	<u>36,017,704</u>
TOTAL ASSETS	<u>42,889,915</u>
DEFERRED OUTFLOWS OF RESOURCES	
Deferred charges on refunding, net	<u>65,475</u>
CURRENT LIABILITIES	
Accounts payable	78,184
Accrued salaries and benefits	6,277
Accrued interest	11,066
Developer escrows and deposits	8,251
Bonds and notes payable	<u>550,000</u>
TOTAL CURRENT LIABILITIES	653,778
NONCURRENT LIABILITIES	
Bonds and notes payable	<u>7,246,250</u>
TOTAL LIABILITIES	<u>7,900,028</u>
NET POSITION	
Net investment in capital assets	28,221,454
Unrestricted	<u>6,833,908</u>
TOTAL NET POSITION	<u>\$ 35,055,362</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND
CHANGES IN NET POSITION
PROPRIETARY FUND
YEAR ENDED DECEMBER 31, 2014

Schedule 13, 13 of 154

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services	\$ <u>4,951,845</u>
OPERATING EXPENSES	
King Road Plant	582,420
Possum Hollow Plant	145,475
General and administrative	158,293
General operating	705,375
Contractual and professional services	75,066
Depreciation	<u>1,571,181</u>
TOTAL OPERATING EXPENSES	<u>3,237,810</u>
OPERATING INCOME	<u>1,714,035</u>
NONOPERATING REVENUES (EXPENSES)	
Interest and investment revenue	17,311
Miscellaneous	38,781
Interest expense	<u>(197,049)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(140,957)</u>
INCOME BEFORE TRANSFERS	1,573,078
TRANSFERS	
Transfers out	<u>(600,000)</u>
CHANGE IN NET POSITION	973,078
NET POSITION AT BEGINNING OF YEAR	<u>34,082,284</u>
NET POSITION AT END OF YEAR	<u>\$ <u>35,055,362</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUND
YEAR ENDED DECEMBER 31, 2014

Schedule 13, 14 of 154

	<u>Sewer Fund</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	\$ 4,960,121
Cash payments to suppliers for goods and services	(880,624)
Cash payments to employees for services	(785,088)
Other operating cash receipts	38,781
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>3,333,190</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of property and equipment	(393,595)
Principal paid on revenue bonds	(900,000)
Interest paid on revenue bonds	(193,798)
Transfers to other funds	(600,000)
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	<u>(2,087,393)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Interest received on investments	17,311
NET INCREASE IN CASH AND CASH EQUIVALENTS	1,263,108
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>4,675,895</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 5,939,003</u>
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	\$ 1,714,035
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	1,571,181
Miscellaneous income	38,781
Decrease in accounts receivable	8,276
Increase in accounts payable and accrued expenses	917
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>\$ 3,333,190</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF NET POSITION
PROPRIETARY FUND
DECEMBER 31, 2015

	<u>Sewer Fund</u>
ASSETS	
Cash and cash equivalents	\$ 6,454,108
Accounts receivable, net of allowance of \$54,000	984,864
Other assets	<u>4,083</u>
TOTAL CURRENT ASSETS	7,443,055
PROPERTY AND EQUIPMENT, net	<u>36,113,701</u>
TOTAL ASSETS	<u>43,556,756</u>
DEFERRED OUTFLOWS OF RESOURCES	
Deferred charges on refunding, net	<u>89,015</u>
CURRENT LIABILITIES	
Accounts payable	115,084
Accrued salaries and benefits	9,615
Accrued interest	11,066
Developer escrows and deposits	8,251
Bonds and notes payable	<u>495,000</u>
TOTAL CURRENT LIABILITIES	639,016
NONCURRENT LIABILITIES	
Bonds and notes payable	<u>6,850,152</u>
TOTAL LIABILITIES	<u>7,489,168</u>
NET POSITION	
Net investment in capital assets	28,768,549
Unrestricted	<u>7,388,054</u>
TOTAL NET POSITION	<u>\$ 36,156,603</u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF REVENUES, EXPENSES AND
CHANGES IN NET POSITION
PROPRIETARY FUND
YEAR ENDED DECEMBER 31, 2015

	<u>Sewer Fund</u>
OPERATING REVENUES	
Charges for services	\$ <u>3,899,063</u>
OPERATING EXPENSES	
King Road Plant	618,105
Possum Hollow Plant	145,155
General and administrative	175,195
General operating	781,509
Contractual and professional services	82,142
Depreciation	<u>1,586,579</u>
TOTAL OPERATING EXPENSES	<u>3,388,685</u>
OPERATING INCOME	<u>510,378</u>
NONOPERATING REVENUES (EXPENSES)	
Interest and investment revenue	20,675
Miscellaneous	29,100
Interest expense	<u>(215,370)</u>
TOTAL NONOPERATING REVENUES (EXPENSES)	<u>(165,595)</u>
INCOME BEFORE TRANSFERS	344,783
TRANSFERS	
Capital contributions	1,381,458
Transfers in	751,118
Transfers out	<u>(1,376,118)</u>
CHANGE IN NET POSITION	1,101,241
NET POSITION AT BEGINNING OF YEAR	<u>35,055,362</u>
NET POSITION AT END OF YEAR	<u>\$ <u>36,156,603</u></u>

See accompanying notes to the basic financial statements.

LIMERICK TOWNSHIP
STATEMENT OF CASH FLOWS
PROPRIETARY FUND
YEAR ENDED DECEMBER 31, 2015

	<u>Sewer Fund</u>
CASH FLOWS FROM OPERATING ACTIVITIES	
Cash received from customers	\$ 3,843,444
Cash payments to suppliers for goods and services	(883,139)
Cash payments to employees for services	(878,849)
Other operating cash receipts	29,100
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>2,110,556</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Acquisition and construction of property and equipment	(301,118)
Principal paid on revenue bonds	(4,510,000)
Interest paid on revenue bonds	(256,305)
Proceeds from issuance of bonds	4,076,297
Transfers to other funds	(1,376,118)
Transfers from other funds	751,118
NET CASH USED BY CAPITAL AND RELATED FINANCING ACTIVITIES	<u>(1,616,126)</u>
CASH FLOWS FROM INVESTING ACTIVITIES	
Interest received on investments	<u>20,675</u>
NET INCREASE IN CASH AND CASH EQUIVALENTS	515,105
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>5,939,003</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 6,454,108</u>
RECONCILIATION OF OPERATING INCOME TO NET CASH PROVIDED BY OPERATING ACTIVITIES	
Operating income	\$ 510,378
Adjustments to reconcile operating income to net cash provided by operating activities	
Depreciation	1,586,579
Miscellaneous income	29,100
Increase in	
Accounts receivable	(55,619)
Other assets	(120)
Increase in accounts payable and accrued expenses	40,238
NET CASH PROVIDED BY OPERATING ACTIVITIES	<u>\$ 2,110,556</u>

See accompanying notes to the basic financial statements.

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
Sewer Operating Fund					
Interest Income					
08-341-100	Int - Sewer Revenue Savings	215	361	500	400
08-341-120	Int - Revenue Fund	7,586	6,372	4,200	4,500
08-341-150	Int - Uninvest	.00	.00	.00	.00
Total Interest Income:		7,800	6,733	4,700	4,900
Federal Grants					
08-351-010	Federal Grants	.00	.00	.00	.00
Total Federal Grants:		.00	.00	.00	.00
Sewer Rental Fees					
08-364-121	Sewer Rental - King Road	2,829,289	2,880,253	2,950,000	2,980,000
08-364-122	Penalty & Interest - King Road	49,232	68,822	40,000	41,000
08-364-123	Sewer Rental - Possum Hollow	770,070	720,677	760,000	770,000
08-364-124	Penalty & Int - Possum Hossum	21,868	10,951	13,500	14,000
08-364-125	Royersford Treatment Charges	30,750-	40,570-	(40,689) (45,000)
08-364-127	Lien Fees	18,278	14,248	.00	.00
Total Sewer Rental Fees:		3,657,987	3,654,382	3,722,811	3,760,000
Other Operating Revenue					
08-380-110	Certification Fees	9,590	8,685	8,800	9,000
08-380-120	Inspection Fees	5,500	8,690	8,000	7,500
08-380-130	Adminstration Fees	.00	.00	.00	.00
08-380-140	Miscellaneous Revenue	.00	.00	.00	.00
08-380-150	EnerNoc Demand Response Pymt	13,245	21,406	12,055	12,000
Total Other Operating Revenue:		28,335	38,781	28,855	28,500
General & Admin Costs					
08-401-120	Wages - Staff	85,422	92,853	95,500	98,200
08-401-154	Life/Disability Insurance	593	701	800	800
08-401-156	Health Insurance	27,044	24,665	28,300	29,700

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
08-401-160	LTMA Retirement	.00	.00	11,547	.00
08-401-161	Employer's Liab (FICA/SUTA)	7,611	8,200	8,000	7,900
08-401-174	Education Reimbursement	.00	.00	.00	.00
08-401-210	Office Supplies	3,620	463	4,600	2,000
08-401-211	Bank Fees	120-	131-	100	100
08-401-310	Trustee	245	245	750	750
08-401-316	One Call	426	641	900	1,000
08-401-321	Telephone Services - Monthly	805	.00	.00	.00
08-401-325	Postage	9,946	9,929	11,400	12,000
08-401-352	Public Officials & Gen Liab.	12,424	13,666	12,004	12,400
08-401-354	Workers' Comp. Insurance	192	240	250	252
08-401-384	Rental of Machinery/Equipment	2,977	2,848	3,000	3,000
08-401-420	Dues/Subscriptions/Memberships	240	466	300	.00
08-401-460	Education & Training	221	135	500	200
08-401-750	Non-depreciable Equipment	162	3,373	500	500
Total General & Admin Costs:		151,808	158,293	178,451	168,802
Legal					
08-404-110	Legal	29,760	50,738	42,000	42,000
Total Legal:		29,760	50,738	42,000	42,000
Engineer					
08-408-313	Engineering	48,410	24,328	50,000	55,000
Total Engineer:		48,410	24,328	50,000	55,000
General Gov't Buildings/Plant					
08-409-250	Repairs/Maintenance	2,752	2,606	3,000	3,000
08-409-316	Janitorial Services	2,070	2,145	2,600	2,600
Total General Gov't Buildings/Plant:		4,822	4,751	5,600	5,600

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
08-427-120	Wages - Superintendent	76,727	79,796	81,900	84,350
08-427-130	Wages - Operators	326,841	345,027	400,000	442,200
08-427-154	Life/Disability Insurance	2,579	2,670	3,650	3,900
08-427-156	Health Insurance	157,818	149,325	168,000	182,100
08-427-161	Employer's Liab (FICA/SUTA)	37,438	38,417	42,900	45,000
08-427-183	Overtime	27,706	30,655	26,000	30,000
08-427-184	On Call Pay	10,627	10,681	10,658	11,000
08-427-191	Uniform Rental	2,855	2,795	3,000	3,000
08-427-192	Personal Safety Equipment	.00	.00	.00	4,000
08-427-231	Gas & Oil	.00	56	8,000	8,000
08-427-244	Water Reads	3,169	4,113	3,672	3,700
08-427-331	Mileage Costs	.00	.00	.00	.00
08-427-351	Vehicle Insurance	7,227	6,732	9,041	9,350
08-427-354	Workers' Comp. Insurance	19,152	22,492	24,600	28,700
08-427-374	Vehicle Maintenance	4,159	6,575	4,000	5,000
08-427-420	Dues/Subscriptions/Memberships	178	300	500	500
08-427-460	Training	955	990	1,200	1,200
Total Operating Expenses:		677,430	700,623	787,121	862,000
King Road Expenditures					
08-428-221	Water	9,636	10,378	7,200	7,200
08-428-222	Sludge Removal	73,194	69,375	80,000	80,000
08-428-223	Refuse/Trash	1,158	1,456	1,200	1,200
08-428-224	Grit Removal	6,320	5,199	10,000	5,500
08-428-225	Lab Supplies	1,048	2,540	4,200	4,200
08-428-226	Outside Lab Analysis	14,060	11,713	22,000	22,000
08-428-227	I & I	648	5,786	9,000	9,000
08-428-228	Odor Control	38,973	23,881	36,000	40,000

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
08-428-229	Other Chemicals	10,585	6,448	10,000	10,000
08-428-321	Telephone Services - Monthly	13,884	14,694	15,000	15,000
08-428-351	Bldg & Plant Insurance	8,077	8,352	12,455	9,200
08-428-361	Electric - Plant	257,088	243,877	250,000	250,000
08-428-362	Electric - Pump Station 2	2,627	2,756	3,000	3,000
08-428-363	Electric - Pump Station 3	7,541	6,649	10,000	10,000
08-428-364	Electric - Pump Station 4	2,230	2,468	3,000	3,000
08-428-365	Electric - Pump Station 5	18,096	20,275	21,500	20,000
08-428-366	Electric - Merion PS # 8	1,017	1,058	1,000	1,000
08-428-367	Electric - Pump Station # 7	2,179	2,602	3,000	3,000
08-428-368	Electric - SE Pump Station 6A	18,849	21,030	21,000	21,000
08-428-369	Electric - Ridge Pike Pump #10	2,587	2,742	3,500	3,500
08-428-370	Electric - Wayside Pump #11	3,198	3,528	2,500	.00
08-428-371	Electric - Neiffer Pump St #9	552	555	700	700
08-428-372	Electric - Bradford Woods #12	5,083	5,896	6,000	6,000
08-428-373	Electric - Bradford Woods # 13	1,445	1,569	2,000	2,000
08-428-374	Electric - Bradford Woods # 14	3,183	3,711	4,000	4,000
08-428-375	Electric - Landis Brooke # 15	1,142	1,187	2,000	2,000
08-428-376	Electric - Country Club Estate	3,380	3,315	4,000	4,000
08-428-377	Electric - Graterford Rd #20	.00	.00	2,000	6,000
08-428-452	Permits	2,975	1,071	5,000	5,000
08-428-480	Plant/Bldg Maintenance	15,613	37,624	20,000	20,000
08-428-481	Collection System Maintenance	40,346	36,416	60,000	90,000
08-428-482	Equipment Maintenance	1,077	.00	1,700	1,700
08-428-483	Materials & Small Tools	3,337	1,813	4,000	4,000
08-428-484	Equipment Rental	1,043	617	1,000	1,000
08-428-485	Major Maintenance	17,118	10,273	27,000	25,000

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
08-428-486	Other Contractor Services	4,164	7,122	12,000	12,000
08-428-487	Well Meters, Install & Repair	1,370	3,253	5,000	5,000
08-428-488	Private Meter Supplies	.00	1,022	1,500	1,500
08-428-489	Deduct Meters	1,555-	171	1,000	1,000
Total King Road Expenditures:		593,268	582,422	684,455	708,700
Possum Hollow Expenditures					
08-429-221	Water	646	463	500	500
08-429-222	Sludge Removal	15,913	18,425	20,000	20,000
08-429-224	Grit Removal	3,271	3,582	2,000	2,000
08-429-225	Lab Supplies	440	930	1,500	1,500
08-429-226	Outside Lab Analysis	6,599	11,571	17,300	17,300
08-429-227	I & I	.00	.00	.00	.00
08-429-228	Odor Control	.00	.00	2,000	2,000
08-429-229	Other Chemicals	.00	105	500	500
08-429-321	Telephone Services - Monthly	2,973	3,203	3,200	3,200
08-429-351	Bldg & Plant Insurance	5,385	5,803	.00	.00
08-429-361	Electric - Plant	72,875	70,177	75,000	75,000
08-429-363	Electric - Possum Hollow PS	4,073	4,496	4,200	5,400
08-429-364	Electric - Pump Station # 1	3,121	3,319	4,200	4,200
08-429-365	Electric - Heritage Hills	5,188	5,832	6,700	6,700
08-429-480	Plant/Bldg Maintenance	2,446	2,154	3,500	3,500
08-429-481	Collection System Maintenance	428	149	3,000	4,000
08-429-482	Equipment Maintenance	1,254	1,344	3,000	3,000
08-429-483	Materials & Small Tools	1,472	1,044	1,750	1,750
08-429-484	Equipment Rental	.00	.00	.00	.00
08-429-485	Major Maintenance	7,335	7,683	12,000	12,000
08-429-486	Other Contractor Services	806	3,675	4,500	4,500

Limerick Township

2016 Adopted Budget
Period: 12/15

Account Number	Account Title	2013 Actual	2014 Actual	2015 Projected budget	2016 Budget
08-429-487	Well Meters, Install & Repair	.00	.00	2,000	2,000
08-429-488	Private Meter Supplies	.00	.00	1,000	1,000
08-429-489	Deduct Meters	.00	1,523	1,000	1,000
Total Possum Hollow Expenditures:		134,223	145,479	168,850	171,050
Debt Service					
08-471-400	Principal - Del Val 2001	438,000	460,000	80,000	.00
08-471-600	2010 Bond - Principal	420,000	440,000	.00	.00
08-471-700	2015 Bond - Principal	.00	.00	445,000	495,000
Total Debt Service:		858,000	900,000	525,000	495,000
Debt Service - Interest					
08-472-400	Interest - Del Val 2001	61,946	49,049	38,000	113,086
08-472-600	2010 Bond - Interest	159,849	144,749	.00	.00
08-472-700	2015 Bond - Interest	.00	.00	128,421	128,625
Total Debt Service - Interest:		221,794	193,797	166,421	241,711
Interfund Transfers					
08-492-001	Transfer to General Fund	500,000	600,000	625,000	625,000
08-492-031	Transfer to Sewer Capital Fd	150,000	250,000	450,000	400,000
Total Interfund Transfers:		650,000	850,000	1,075,000	1,025,000
Sewer Operating Fund Revenue Total:		3,694,122	3,699,895	3,756,366	3,793,400
Sewer Operating Fund Expenditure Total:		3,369,516	3,610,431	3,682,898	3,774,863
Net Total Sewer Operating Fund:		324,606	89,464	73,468	18,537

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
Sewer Operating Fund					
Interest Income					
08-341-100	Int - Sewer Revenue Savings	361	495	400	400
08-341-120	Int - Revenue Fund	6,372	4,302	4,700	4,700
Total Interest Income:		6,733	4,797	5,100	5,100
Sewer Rental Fees					
08-364-121	Sewer Rental - King Road	2,880,253	2,974,776	2,980,000	2,990,000
08-364-122	Penalty & Interest - King Road	68,822	41,413	41,000	41,000
08-364-123	Sewer Rental - Possum Hollow	720,677	770,821	775,000	780,000
08-364-124	Penalty & Int - Possum Hossum	10,951	14,446	15,000	15,000
08-364-125	Royersford Treatment Charges	40,570-	51,140-	45,000-	45,000-
08-364-127	Lien Fees	14,248	14,926	.00	.00
Total Sewer Rental Fees:		3,654,382	3,765,242	3,766,000	3,781,000
Other Operating Revenue					
08-380-110	Certification Fees	8,685	9,235	10,500	10,500
08-380-120	Inspection Fees	8,690	7,810	7,000	7,500
08-380-140	Miscellaneous Revenue	.00	.00	21	.00
08-380-150	EnerNoc Demand Response Pymt	21,406	12,055	13,500	13,500
Total Other Operating Revenue:		38,781	29,100	31,021	31,500
General & Admin Costs					
08-401-120	Wages - Staff	92,853	95,886	97,000	101,100
08-401-154	Life/Disability Insurance	701	756	800	870
08-401-156	Health Insurance	24,665	27,642	29,700	31,200
08-401-160	LTMA Retirement	.00	11,547	.00	.00
08-401-161	Employer's Liab (FICA/SUTA)	8,200	8,419	7,900	8,112
08-401-210	Office Supplies	463	4,116	5,000	3,000
08-401-211	Bank Fees	131-	270-	100	100
08-401-310	Trustee	245	245	750	750
08-401-316	One Call	641	761	1,000	1,000
08-401-325	Postage	9,929	10,238	12,000	13,000
08-401-352	Public Officials & Gen Liab.	13,666	12,004	14,109	14,391
08-401-354	Workers' Comp. Insurance	240	236	252	125
08-401-384	Rental of Machinery/Equipment	2,848	2,837	3,000	3,000
08-401-460	Education & Training	135	18	.00	200
08-401-750	Non-depreciable Equipment	3,373	189	341	500
Total General & Admin Costs:		157,827	174,625	171,952	177,348
Legal					
08-404-110	Legal	50,738	37,103	610,000	50,000
Total Legal:		50,738	37,103	610,000	50,000
Engineer					
08-408-313	Engineering	24,328	45,039	65,000	70,000
Total Engineer:		24,328	45,039	65,000	70,000

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
General Gov't Buildings/Plant					
08-409-250	Repairs/Maintenance	2,606	3,020	3,000	3,000
08-409-316	Janitorial Services	2,145	2,110	2,600	2,652
Total General Gov't Buildings/Plant:		4,751	5,130	5,600	5,652
Operating Expenses					
08-427-120	Wages - Superintendent	79,796	82,190	.00	.00
08-427-130	Wages - Operators	345,027	396,996	495,000	441,300
08-427-154	Life/Disability Insurance	2,670	3,533	3,900	3,600
08-427-156	Health Insurance	149,325	170,215	160,000	165,000
08-427-161	Employer's Liab (FICA/SUTA)	38,417	41,115	38,000	38,300
08-427-183	Overtime	30,655	26,691	28,000	30,000
08-427-184	On Call Pay	10,681	10,521	11,000	11,000
08-427-191	Uniform Rental	2,795	2,829	3,000	3,000
08-427-192	Personal Safety Equipment	.00	.00	4,000	4,000
08-427-231	Gas & Oil	56	.00	8,000	8,000
08-427-244	Water Reads	4,113	3,345	3,700	3,700
08-427-331	Mileage Costs	.00	.00	.00	.00
08-427-351	Vehicle Insurance	6,732	6,707	8,916	9,000
08-427-354	Workers' Comp. Insurance	22,492	23,338	28,700	23,000
08-427-374	Vehicle Maintenance	6,575	7,604	7,000	6,000
08-427-420	Dues/Subscriptions/Memberships	300	501	500	500
08-427-460	Training	990	794	2,000	6,000
Total Operating Expenses:		700,623	776,379	801,716	752,400
King Road Expenditures					
08-428-221	Water	10,378	9,508	9,000	10,000
08-428-222	Sludge Removal	69,375	63,181	70,000	70,000
08-428-223	Refuse/Trash	1,456	1,027	1,200	1,200
08-428-224	Grit Removal	5,199	9,487	10,000	10,000
08-428-225	Lab Supplies	2,540	1,505	3,000	4,000
08-428-226	Outside Lab Analysis	11,713	13,125	32,000	30,000
08-428-227	I & I	5,786	2,229	9,000	9,000
08-428-228	Odor Control	23,881	34,598	30,000	10,000
08-428-229	Other Chemicals	6,448	8,282	10,000	10,000
08-428-321	Telephone Services - Monthly	14,694	16,253	15,000	13,000
08-428-351	Bldg & Plant Insurance	8,352	12,455	13,478	14,000
08-428-361	Electric - Plant	243,877	246,877	225,000	170,000
08-428-362	Electric - PS #2, N. Limerick	2,756	2,498	3,000	3,000
08-428-363	Electric - PS #3, S. Limerick	6,649	6,883	8,000	8,000
08-428-364	Electric - PS #4, Benner Rd	2,468	2,387	2,500	2,500
08-428-365	Electric - PS #5, Trinley Rd	20,275	21,242	21,000	21,000
08-428-366	Electric - PS # 8, Merion	1,058	938	1,000	1,000
08-428-367	ELECTRIC - PS #7, King Rd	2,602	2,316	2,500	2,500
08-428-368	Electric - PS #6, SE	21,030	20,006	23,000	23,000
08-428-369	Electric - PS #10, Ridge Pike	2,742	2,699	3,000	3,000
08-428-370	Electric - PS #11, Wayside	3,528	2,459	.00	.00
08-428-371	Electric - PS #9, Neiffer Rd	555	574	700	700
08-428-372	Electric - PS #12, Bradford Wo	5,896	4,811	5,500	5,500
08-428-373	Electric -PS # 13, Bradford Wo	1,569	1,599	2,000	2,000
08-428-374	Electric - PS # 14, Bradford W	3,711	3,722	4,000	4,000
08-428-375	Electric PS#15, Landis Brooke	1,187	1,114	1,200	1,200
08-428-376	Electric - Country Club Estate	3,315	3,565	3,200	3,200

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
08-428-377	Electric - PS #20, Graterford	.00	1,299	4,000	4,000
08-428-451	Lawn Maintenance	.00	.00	11,700	15,000
08-428-452	Permits	1,071	2,305	3,500	3,500
08-428-480	Plant/Bldg Maintenance	37,624	16,381	31,550	25,000
08-428-481	Collection System Maintenance	36,416	62,732	80,000	90,000
08-428-482	Equipment Maintenance	.00	1,027	5,000	50,000
08-428-483	Materials & Small Tools	1,813	3,136	5,000	6,000
08-428-484	Equipment Rental	617	436	1,000	1,000
08-428-485	Major Maintenance	10,273	20,379	25,000	.00
08-428-486	Other Contractor Services	7,122	9,046	12,000	20,000
08-428-487	Well Meters, Install & Repair	3,253	3,589	10,000	12,000
08-428-488	Private Meter Supplies	1,022	1,297	.00	.00
08-428-489	Deduct Meters	171	1,138	.00	.00
Total King Road Expenditures:		582,422	618,108	697,028	658,300
Possum Hollow Expenditures					
08-429-221	Water	463	436	600	600
08-429-222	Sludge Removal	18,425	15,075	20,000	20,000
08-429-223	Refuse/Trash	.00	.00	.00	.00
08-429-224	Grit Removal	3,582	4,089	3,000	3,000
08-429-225	Lab Supplies	930	2,314	1,500	1,500
08-429-226	Outside Lab Analysis	11,571	17,368	17,300	17,300
08-429-227	I & I	.00	.00	.00	.00
08-429-228	Odor Control	.00	.00	5,000	5,000
08-429-229	Other Chemicals	105	52	500	500
08-429-321	Telephone Services - Monthly	3,203	3,326	5,000	5,000
08-429-351	Bldg & Plant Insurance	5,803	.00	.00	.00
08-429-361	Electric - Plant	70,177	74,434	75,000	75,000
08-429-363	Electric - PS #17, Poss Holl	4,496	4,265	5,000	5,000
08-429-364	ELECTRIC - PS #1, Airport Rd	3,319	3,665	5,000	5,000
08-429-365	Electric - PS # Heritage Hills	5,832	6,001	6,700	6,700
08-429-451	Lawn Maintenance	.00	.00	.00	.00
08-429-480	Plant/Bldg Maintenance	2,154	1,554	3,500	6,000
08-429-481	Collection System Maintenance	149	3,163	5,000	6,000
08-429-482	Equipment Maintenance	1,344	2,019	3,000	6,000
08-429-483	Materials & Small Tools	1,044	200	2,000	4,000
08-429-484	Equipment Rental	.00	.00	.00	.00
08-429-485	Major Maintenance	7,683	7,194	12,000	5,000
08-429-486	Other Contractor Services	3,675	.00	6,000	6,000
08-429-487	Well Meters, Install & Repair	.00	.00	.00	.00
08-429-488	Private Meter Supplies	.00	.00	.00	.00
08-429-489	Deduct Meters	1,523	.00	.00	.00
Total Possum Hollow Expenditures:		145,479	145,155	176,100	177,600
Debt Service					
08-471-400	Principal - Del Val 2001	460,000	80,000	.00	.00
08-471-600	2010 Bond - Principal	440,000	.00	.00	.00
08-471-700	2015 Bond - Principal	.00	445,000	495,000	525,000
Total Debt Service:		900,000	525,000	495,000	525,000
Debt Service - Interest					
08-472-400	Interest - Del Val 2001	49,049	36,587	45,000	75,000

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
08-472-600	2010 Bond - Interest	144,749	.00	.00	.00
08-472-700	2015 Bond - Interest	.00	128,421	128,625	110,700
Total Debt Service - Interest:		193,797	165,008	173,625	185,700
Interfund Transfers					
08-492-001	Transfer to General Fund	600,000	625,000	625,000	625,000
08-492-031	Transfer to Sewer Capital Fd	250,000	450,000	400,000	400,000
Total Interfund Transfers:		850,000	1,075,000	1,025,000	1,025,000
Sewer Operating Fund Revenue Total:		3,699,895	3,799,139	3,802,121	3,817,600
Sewer Operating Fund Expenditure Total:		3,609,965	3,566,546	4,221,021	3,627,000
Net Total Sewer Operating Fund:		89,930	232,593	418,900-	190,600

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
SEWER CAPITAL FUND					
Interest Income					
31-341-140	Interest - Sewer Capital Fund	10,578	15,878	12,000	12,000
Total Interest Income:		10,578	15,878	12,000	12,000
Federal Grants					
31-351-010	Federal Grants	.00	.00	.00	.00
Total Federal Grants:		.00	.00	.00	.00
Tapping Fees					
31-364-111	Tapping Fees - King Road	1,107,561	132,613	652,775	1,370,584
31-364-112	Tapping Fees - Possum Hollow	189,259	1,500-	.00	.00
Total Tapping Fees:		1,296,820	131,113	652,775	1,370,584
Interfund Transfers					
31-392-008	Transfer from Sewer Fund	250,000	450,000	400,000	400,000
Total Interfund Transfers:		250,000	450,000	400,000	400,000
Cash Balance Forward					
31-399-100	Budgetary Reserve	.00	.00	.00	.00
Total Cash Balance Forward:		.00	.00	.00	.00
King Road - Capital Projects					
31-428-620	Sewer System Construction	92,278	52,332	16,798	30,000
31-428-630	Pump Station Upgrades	277,123	157,790	907,158	1,412,000
31-428-640	I/I Program Equipment	12,097	9,401	.00	.00
31-428-680	Miscellaneous	.00	18,426	.00	25,000
31-428-740	Vehicles	.00	3,499	74,635	55,000
31-428-750	Equipment	.00	52,518	49,512	.00
Total King Road - Capital Projects:		381,497	293,966	1,048,103	1,522,000
Possum Hollow Capital Projects					
31-429-620	Sewer System Construction	.00	.00	.00	.00
31-429-630	Pump Station Upgrades	.00	.00	4,900	40,000
31-429-680	Miscellaneous	12,097	.00	.00	20,000
31-429-750	Equipment	.00	7,152	.00	80,000
Total Possum Hollow Capital Projects:		12,097	7,152	4,900	140,000
Reserved Funds					
31-493-100	Unencumbered Reserve	.00	.00	11,772	120,584
Total Reserved Funds:		.00	.00	11,772	120,584
SEWER CAPITAL FUND Revenue Total:		1,557,397	596,990	1,064,775	1,782,584
SEWER CAPITAL FUND Expenditure Total:		393,594	301,118	1,064,775	1,782,584

Account Number	Account Title	2014 Actual	2015 Actual	2016 Projected	2017 Budget
Net Total SEWER CAPITAL FUND:		1,163,803	295,872	.00	.00

Account # Account Title	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual
General Operating:					
8427120 Wages - Superintendent	74,132	76,727	79,796	82,190	-
8427130 Wages - Operators	315,604	326,841	345,027	396,996	488,015
8427154 Life/Disability Insurance	2,163	2,579	2,670	3,533	3,545
8427156 Health Insurance	146,623	157,818	149,325	170,215	167,035
8427161 Employer's Liab (FICA/SUTA)	34,477	37,438	38,417	41,115	42,171
8427183 Overtime	23,742	27,706	30,655	26,691	26,521
8427184 On Call Pay	9,850	10,627	10,681	10,521	10,177
8427191 Uniform Rental	2,844	2,855	2,795	2,829	3,207
8427192 Personal Safety Equipment	-	-	-	-	3,313
8427231 Gas & Oil	3,641	-	56	-	2,646
8427244 Water Reads	3,325	3,169	4,113	3,345	3,537
8427331 Mileage Costs	-	-	-	-	-
8427351 Vehicle Insurance	8,384	7,227	6,732	6,707	8,916
8427354 Workers' Comp. Insurance	17,077	19,152	22,492	23,338	25,846
8427374 Vehicle Maintenance	3,511	4,159	6,575	7,604	5,091
8427420 Dues/Subscriptions/Membership	393	178	300	501	453
8427460 Training	352	955	990	794	1,416
Total - General Operating	<u>646,118</u>	<u>677,430</u>	<u>700,623</u>	<u>776,379</u>	<u>791,889</u>
King Road:					
8428221 Water	8,323	9,636	10,378	9,508	8,715
8428222 Sludge Removal	60,014	73,194	69,375	63,181	59,725
8428223 Refuse/Trash	1,084	1,158	1,456	1,027	1,102
8428224 Grit Removal	3,828	6,320	5,199	9,487	8,070
8428225 Lab Supplies	2,200	1,048	2,540	1,505	3,108
8428226 Outside Lab Analysis	6,790	14,060	11,713	13,125	26,637
8428227 I & I	12,381	648	5,786	2,229	8,969
8428228 Odor Control	27,877	38,973	23,881	34,598	18,468
8428229 Other Chemicals	7,083	10,585	6,448	8,282	10,476
8428321 Telephone Services - Monthly	13,005	13,884	14,694	16,253	15,651
8428351 Bldg & Plant Insurance	6,709	8,077	8,352	12,455	13,478
8428361 Electric - Plant	224,217	257,088	243,877	246,877	217,970
8428362 Electric - PS #2, N. Limerick	2,378	2,627	2,756	2,498	2,271
8428363 Electric - PS #3, S. Limerick	7,344	7,541	6,649	6,883	6,493
8428364 Electric - PS #4, Benner Rd	2,029	2,230	2,468	2,387	2,370
8428365 Electric - PS #5, Trinley Rd	18,375	18,096	20,275	21,242	18,433
8428366 Electric - PS # 8, Merion	897	1,017	1,058	938	633
8428367 ELECTRIC - PS #7, King Rd	2,125	2,179	2,602	2,316	2,080
8428368 Electric - PS #6, SE	20,090	18,849	21,030	20,006	21,795
8428369 Electric - PS #10, Ridge Pike	2,827	2,587	2,742	2,699	2,455
8428370 Electric - PS #11, Wayside	3,584	3,198	3,528	2,459	-
8428371 Electric - PS #9, Neiffer Rd	506	552	555	574	642
8428372 Electric - PS #12, Bradford Wo	5,312	5,083	5,896	4,811	4,527
8428373 Electric -PS # 13, Bradford Wo	1,345	1,445	1,569	1,599	1,415
8428374 Electric - PS # 14, Bradford W	3,596	3,183	3,711	3,722	3,568
8428375 Electric PS#15, Landis Brooke	1,151	1,142	1,187	1,114	1,036
8428376 Electric - Country Club Estate	2,954	3,380	3,315	3,565	3,003
8428377 Electric - PS #20, Graterford	-	-	-	1,299	2,973
8428451 Lawn Maintenance	-	-	-	-	-
8428452 Permits	3,369	2,975	1,071	2,305	2,361
8428480 Plant/Bldg Maintenance	16,274	15,613	37,624	16,381	29,362
8428481 Collection System Maintenance	39,375	40,346	36,416	62,732	77,589
8428482 Equipment Maintenance	863	1,077	-	1,027	1,358
8428483 Materials & Small Tools	4,739	3,337	1,813	3,136	3,884
8428484 Equipment Rental	907	1,043	617	436	117
8428485 Major Maintenance	20,390	17,118	10,273	20,379	14,687
8428486 Other Contractor Services	7,989	4,164	7,122	9,046	7,692
8428487 Well Meters, Install & Repair	4,199	1,370	3,253	3,589	7,868
8428488 Private Meter Supplies	749	-	1,022	1,297	-
8428489 Deduct Meters	824	(1,555)	171	1,138	(2,558)
Total - King Road	<u>547,704</u>	<u>593,268</u>	<u>582,422</u>	<u>618,108</u>	<u>608,423</u>

Account # Account Title	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual
Possum Hollow:					
8429221 Water	507	646	463	436	446
8429222 Sludge Removal	16,586	15,913	18,425	15,075	14,872
8429223 Refuse/Trash	-	-	-	-	-
8429224 Grit Removal	1,469	3,271	3,582	4,089	4,519
8429225 Lab Supplies	896	440	930	2,314	772
8429226 Outside Lab Analysis	6,916	6,599	11,571	17,368	11,346
8429227 I & I	-	-	-	-	-
8429228 Odor Control	-	-	-	-	4,506
8429229 Other Chemicals	-	-	105	52	310
8429321 Telephone Services - Monthly	2,808	2,973	3,203	3,326	4,605
8429351 Bldg & Plant Insurance	4,272	5,385	5,803	-	-
8429361 Electric - Plant	63,137	72,875	70,177	74,434	74,320
8429363 Electric - PS #17, Poss Holl	3,749	4,073	4,496	4,265	4,340
8429364 ELECTRIC - PS #1, Airport Rd	3,216	3,121	3,319	3,665	4,057
8429365 Electric - PS # Heritage Hills	4,915	5,188	5,832	6,001	6,339
8429451 Lawn Maintenance	-	-	-	-	-
8429480 Plant/Bldg Maintenance	2,842	2,446	2,154	1,554	6,221
8429481 Collection System Maintenance	2,635	428	149	3,163	4,188
8429482 Equipment Maintenance	-	1,254	1,344	2,019	2,242
8429483 Materials & Small Tools	370	1,472	1,044	200	1,682
8429484 Equipment Rental	-	-	-	-	-
8429485 Major Maintenance	9,196	7,335	7,683	7,194	7,491
8429486 Other Contractor Services	-	806	3,675	-	5,833
8429487 Well Meters, Install & Repair	-	-	-	-	-
8429488 Private Meter Supplies	-	-	-	-	-
8429489 Deduct Meters	1,000	-	1,523	-	-
	<u>124,513</u>	<u>134,223</u>	<u>145,479</u>	<u>145,155</u>	<u>158,091</u>

CAPX

2016
proj 1,053,003.00
YTD 422,863.00 use this one

	2016	2017	2018	2019	2020
K		213,000	273,000	116,000	823,000
P		158,000	55,000	100,000	43,000
		371,000	328,000	216,000	866,000

2016 OC adds 832322

832322 371,000 328,000 216,000 866,000

Residential Projects Pipeline:		Year	Resolution	EDUs	Tapping Fee	King Rd	Possum Hollow	2016	2017	2018	2019	2020	2021	Beyond
05-21	Ely Subdivision (fruitville & smith)			6	28,956		PS 18				28,956			
07-03 B	Sankey Residential (91)	2017	P/F 12-1-2015	91	439,166	PS 3				439,166				
07-21	28 Brownback Road (4)		RF 7-20-2010	4	19,304	PS 5						19,304		
08-06	Tomaselli (5?)			5	24,130	X								24,130
14-04	Country Club Views (84)	2016	F 4-7-2015	84	405,384	x		405,384						
	Sankey Tract - Mark Quigley's portion Towns only			186	897,636	PS 3							897,636	
	Moscarello (292 W. Ridge) 74 Towns	2017	TPD Ltr	74	284,734	X			284,734					
Commercial Projects Pipeline:														
00-06	10th Ave 3620 retail pad (CR-4)			2	9,652						9,652			
04-19	Evan's Industrial 394 W. Linfield Road, 125,000 SF		F 06/21/2005	14	67,564									67,564
04-24	Sams Club/Walmart		F 10/18/2005	34	164,084									164,084
08-04	Micro Coax - 206 Jones Blvd (on hold)		F 9/25/2008	3	14,478									14,478
08-15	1310 Main St. 6676 Pub/tavern			9	43,434									43,434
09-03	Carr- Penn Road 5000 SF Warehouse		F 04-20-2010	1	4,826		PS 18							4,826
09-08	Crouse Building 826 N. Lewis Road		F 5/24/11	4	19,304						19,304			
10-01	Hampton Inn - 4,380 SF Restraunt Pad		F 7-5-11	10	48,260									48,260
10-06	Linfield Corp. Ctr Lot 59 & 60		F 10-19-2010	3	14,478									14,478
10-08	Pottstown Honda 672 SF addition		F 5-24-11	1	4,826						4,826			
11-07	Redgo - Phase 1		F 1 1/6/2014	26	125,476	PS 5								125,476
11-07	Redgo - Phase 2 AQC		F 2 1/6/2014	193	931,418	PS 5								931,418
11-07	Redgo - Phase 2 Commercial			11	53,086	PS 5								53,086
12-02	Grass Sports		F 9/18/2012	5	24,130		X						24,130	
12-04	Sanatoga Springs Lot 2 Ph 2 & 3	2016		35	168,910		X	168,910						
13-02	15 D & L Drive (detail center)		F 3/4/2014	4	19,304	X					19,304			
14-05	J&D Thomas 2576 SF Office		P/F 2-3-2015											
16-06	West Mont Soccer													
	Sankey Tract - Mark Quigley's Senior			225	1,085,850	PS 3			1,085,850					
	Sankey Tract - Mark Quigley's MS Commercial	2017		50	241,300	PS 3						241,300		
	Total			1,080	5,139,690			574,294	1,370,584	439,166	82,042	260,604	921,766	1,491,234

ers = estimated; not updated
 en taken from from resolutions

	2016	2017	2018	2019	2020	2021	Beyond
4826				6			
4826			91				
4826					4		
4826							5
4826	84						186
4826							
3847.756757		74					
-4826				2			
4826							14
4826							34
-4826							3
4826							9
4826							1
4826				4			
4826							10
4826							3
-4826				1			
4826							26
4826							193
4826							11
-4826	35					5	
-4826				4			
#DIV/0!							
#DIV/0!							
4826		225					
4826							50
EDUs	119	299	91	17	54	191	309
Residential	84	74	91	6	4	186	5
Commercial	1	1	0	4	1	1	10
Total Accounts	85	75	91	10	5	187	15

Consensus Forecasts Of U.S. Interest Rates And Key Assumptions¹

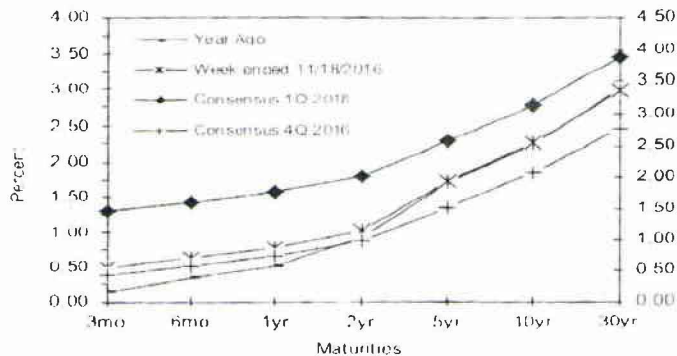
Interest Rates	History								Consensus Forecasts-Quarterly Avg.						
	Average For Week Ending				Average For Month				Latest Qtr	4Q	1Q	2Q	3Q	4Q	1Q
	Nov. 18	Nov. 11	Nov. 4	Oct. 28	Oct	Sep	Aug	3Q 2016	2016	2017	2017	2017	2017	2017	2018
Federal Funds Rate	0.41	0.41	0.40	0.41	0.39	0.40	0.40	0.40	0.5	0.7	0.8	1.0	1.1	1.3	
Prime Rate	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.6	3.8	3.9	4.1	4.2	4.4	
LIBOR, 3-mo.	0.91	0.89	0.88	0.89	0.88	0.85	0.81	0.79	0.9	1.1	1.2	1.4	1.5	1.7	
Commercial Paper, 1-mo.	0.43	0.42	0.42	0.40	0.43	0.40	0.37	0.37	0.5	0.7	0.9	1.1	1.3	1.4	
Treasury bill, 3-mo.	0.48	0.44	0.36	0.32	0.33	0.29	0.30	0.30	0.4	0.6	0.8	1.0	1.1	1.3	
Treasury bill, 6-mo.	0.62	0.56	0.51	0.48	0.47	0.47	0.45	0.44	0.6	0.8	0.9	1.1	1.3	1.4	
Treasury bill, 1 yr.	0.77	0.70	0.64	0.67	0.66	0.59	0.57	0.56	0.7	0.9	1.1	1.3	1.4	1.6	
Treasury note, 2 yr.	1.03	0.88	0.82	0.86	0.84	0.77	0.74	0.73	1.0	1.1	1.3	1.5	1.6	1.8	
Treasury note, 5 yr.	1.71	1.42	1.27	1.30	1.27	1.18	1.13	1.13	1.5	1.7	1.9	2.0	2.2	2.3	
Treasury note, 10 yr.	2.26	1.98	1.82	1.81	1.76	1.63	1.56	1.56	2.1	2.3	2.4	2.6	2.7	2.8	
Treasury note, 30 yr.	2.98	2.76	2.58	2.55	2.50	2.35	2.26	2.28	2.8	3.0	3.1	3.2	3.3	3.4	
Corporate Aaa bond	4.10	3.95	3.79	3.73	3.69	3.41	3.32	3.34	3.8	4.0	4.1	4.2	4.4	4.5	
Corporate Baa bond	4.77	4.61	4.44	4.37	4.34	4.31	4.24	4.26	4.7	4.9	5.1	5.2	5.3	5.5	
State & Local bonds	3.59	3.40	3.36	3.37	3.35	2.93	2.85	2.87	3.4	3.6	3.7	3.8	3.9	4.0	
Home mortgage rate	3.94	3.57	3.54	3.47	3.47	3.46	3.44	3.45	3.8	4.0	4.2	4.3	4.4	4.6	

Key Assumptions	History								Consensus Forecasts-Quarterly					
	4Q		1Q		2Q		3Q		4Q	1Q	2Q	3Q	4Q	1Q
	2014	2015	2015	2015	2015	2016	2016	2016	2016	2017	2017	2017	2017	2018
Major Currency Index	82.6	89.4	89.9	91.8	93.1	93.3	89.6	90.0	92.8	93.9	94.3	94.2	94.2	93.8
Real GDP	2.3	2.0	2.6	2.0	0.9	0.8	1.4	2.9	2.3	2.2	2.2	2.3	2.2	2.3
GDP Price Index	0.5	-0.1	2.3	1.3	0.8	0.5	2.3	1.5	2.1	1.9	2.1	2.1	2.1	2.2
Consumer Price Index	-0.3	-2.9	2.4	1.4	0.8	-0.3	2.5	1.6	2.8	2.1	2.4	2.3	2.5	2.3

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H-15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A rated, yield to maturity. Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data is sourced from Haver Analytics. Historical data for Fed's Major Currency Index is from FRSR H-10. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS).

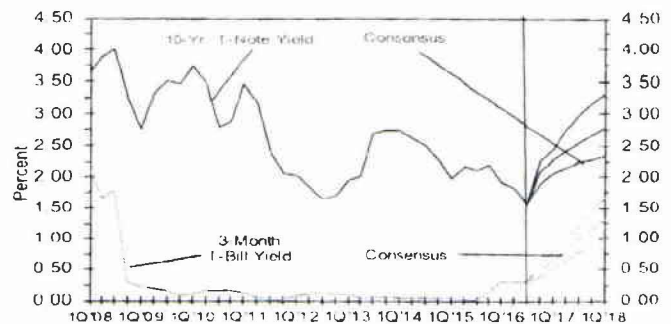
U.S. Treasury Yield Curve

Week ended November 18, 2016 and Year Ago vs 4Q 2016 and 1Q 2018 Consensus Forecasts



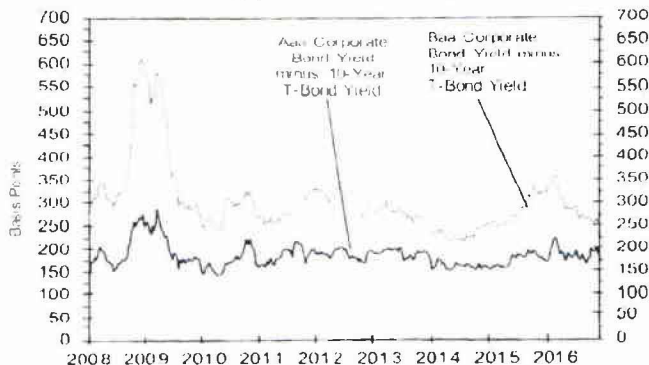
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield

(Quarterly Average) Forecast



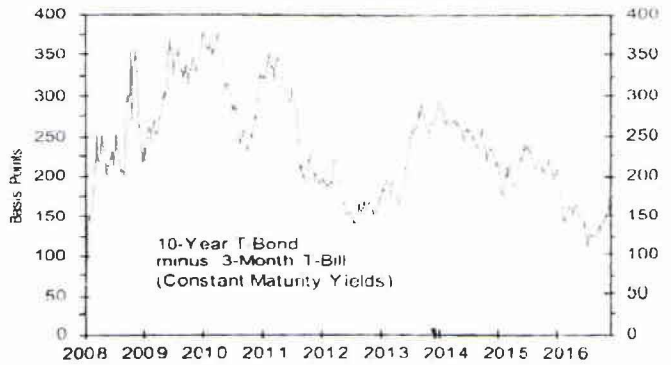
Corporate Bond Spreads

As of week ended November 18, 2016



U.S. Treasury Yield Curve

As of week November 18, 2016



AMER. STATES WATER NYSE-AWR

RECENT PRICE **38.62** P/E RATIO **22.7** (Trailing: 24.1 Median: 20.0) RELATIVE P/E RATIO **1.23** DIV YLD **2.4%** VALUE LINE **1781**

TIMELINESS 3 Raised 8/19/16	High: 17.3 21.9 23.1 21.0 19.4 19.8 18.2 24.1 33.1 38.7 44.1 47.2	LEGENDS 1.25 x Dividends p sh divided by Interest Rate Relative Price Strength 2-for-1 split '913 Options: Yes Shaded area indicates recession	Target Price Range 2019 2020 2021 80 60 50 40 30 25 20 15 10 7.5
SAFETY 2 Raised 7/20/12	Low: 12.2 15.1 16.8 13.5 14.9 15.6 15.3 17.0 24.0 27.0 35.8 37.3		
TECHNICAL 2 Raised 10/14/16			
BETA 70 (1.00 = Market)	2019-21 PROJECTIONS Ann'l Total High Price Gain Return Low 50 (+30%) 9% 40 (+5%) 4%		
Insider Decisions D J F M A M J J A to Buy 0 0 0 0 0 0 0 0 Options 211 110 1 8 4 1 1 to Sell 1 2 1 2 2 2 3 2		Institutional Decisions 4Q2015 1Q2016 2Q2016 to Buy 88 100 95 to Sell 88 96 90 M's \$000 23016 22935 23585 Percent shares traded 24 16 8	

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	VALUE LINE PUB. LLC	19-21
6.08	6.53	6.89	6.99	6.81	7.03	7.88	8.75	9.21	9.74	10.71	11.12	12.12	12.19	12.17	12.56	12.35	12.90	Revenues per sh	15.50
1.10	1.26	1.27	1.04	1.11	1.32	1.45	1.65	1.69	1.70	2.11	2.13	2.48	2.65	2.67	2.81	2.75	2.90	"Cash Flow" per sh	3.80
64	67	67	39	53	66	67	81	78	81	1.11	1.12	1.41	1.61	1.57	1.60	1.65	1.75	Earnings per sh A	2.25
43	43	44	44	44	45	46	48	50	51	52	55	64	76	83	87	.91	.96	Div'd Decl'd per sh B	1.25
1.51	1.59	1.34	1.88	2.51	2.12	1.95	1.45	2.23	2.09	2.12	2.13	1.77	2.52	1.89	2.39	2.45	2.45	Cap'l Spending per sh	2.75
6.37	6.61	7.02	6.98	7.51	7.86	8.32	8.77	8.97	9.70	10.13	10.84	11.80	12.72	13.24	12.77	13.70	14.50	Book Value per sh	16.45
30.24	30.24	30.36	30.42	33.50	33.60	34.10	34.46	34.60	37.06	37.26	37.70	38.53	38.72	38.29	36.50	36.50	36.50	Common Shs Outst'g C	37.00
15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	22.6	21.2	15.7	15.4	14.3	17.2	20.1	24.6	24.6	24.6	Avg Ann'l P/E Ratio	21.0
1.03	86	1.00	1.82	1.23	1.17	1.50	1.27	1.36	1.41	1.00	97	91	97	1.06	1.25	1.25	1.25	Relative P/E Ratio	1.30
4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	2.9%	2.9%	3.0%	3.2%	3.1%	2.7%	2.6%	2.2%	2.2%	2.2%	Avg Ann'l Div'd Yield	2.6%

CAPITAL STRUCTURE as of 6/30/16		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Debt	\$384.7 mill	268.6	301.4	318.7	361.0	396.9	419.3	466.9	472.1	465.8	458.6	450	470	470	470	470	470	470	470
Due in 5 Yrs	\$41.6 mill	23.1	28.0	26.8	29.5	41.4	42.0	54.1	62.7	61.1	60.5	60.0	64.0	64.0	64.0	64.0	64.0	64.0	64.0
LT Debt	\$320.9 mill	40.5%	42.6%	37.8%	38.9%	43.2%	41.7%	39.9%	36.3%	38.4%	38.4%	33.0%	36.0%	36.0%	33.0%	36.0%	36.0%	36.0%	36.0%
Leases, Uncapitalized:	Annual rentals \$2.5 mill	12.2%	8.5%	6.9%	3.2%	5.8%	2.0%	2.5%	--	2.5%	5%	1.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Pension Assets-12/15	\$142.2 mill	48.6%	46.9%	46.2%	45.9%	44.3%	45.4%	42.2%	39.8%	39.1%	41.1%	41.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%
Obliq.	\$168.9 mill	51.4%	53.1%	53.8%	54.1%	55.7%	54.6%	57.8%	60.2%	60.9%	58.9%	58.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%	57.5%
Pfd Stock	None	551.6	569.4	577.0	665.0	677.4	749.1	787.0	818.4	832.6	791.5	855	920	855	920	855	920	855	920
Common Stock	36,558,468 shs. as of 8/1/16	750.6	776.4	825.3	866.4	855.0	895.5	917.8	981.5	1003.5	1060.8	1110	1150	1110	1150	1110	1150	1110	1150
MARKET CAP:	\$1.4 billion (Mid Cap)	6.0%	6.7%	6.4%	5.9%	7.6%	7.1%	8.3%	8.9%	8.6%	9.0%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%
CURRENT POSITION (MILL)		8.1%	9.3%	8.6%	8.2%	11.0%	10.3%	11.9%	12.7%	12.0%	13.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
Cash Assets	76.0	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Accts Receivable	18.8	18.9	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
Other	114.7	109.4	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9	107.9
Current Assets	209.5	132.7	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8	132.8
Accts Payable	41.9	50.6	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0	54.0
Debt Due	.3	28.3	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
Other	57.1	44.6	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4	42.4
Current Liab.	99.3	123.5	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2	160.2

Business: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden States Water Company, it supplies water to 260,151 customers in 75 cities and 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to 23,846 customers in the city of Big Bear Lake and in areas of San Bernardino County. Sold Chaparral City Water of Arizona (6/11). Has 707 employees. Blackrock Inc. owns 9.9% of out. shares, Vanguard, 9.4%; off. & dir. 1.4% (4/16 Proxy). Chairman: Lloyd Ross. President & Chief Executive Officer: Robert J. Sprowls. Inc. CA. Address: 630 East Foothill Boulevard, San Dimas, CA 91773. Tel: 909-394-3600. Internet: www.aswater.com

Annual Rates of change (per sh)
 Past 10 Yrs. Past 5 Yrs. Est'd '13-'15 to '19-21
 Revenues: 6.0%, 4.5%, 4.0%
 "Cash Flow": 9.0%, 8.0%, 6.0%
 Earnings: 12.0%, 12.0%, 6.0%
 Dividends: 6.5%, 10.0%, 7.0%
 Book Value: 5.5%, 6.0%, 4.0%

Quarterly Revenues (\$ mill.)
 Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year
 2013 110.6 120.7 130.9 109.9 472.1
 2014 102.0 115.6 138.3 109.9 465.8
 2015 100.9 114.6 133.0 110.1 458.6
 2016 93.5 112.0 134.5 115 450
 2017 98.0 117 143 117 475

Earnings per Share A
 Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year
 2013 .35 43 .53 .30 1.61
 2014 .28 39 .54 36 1.57
 2015 .32 41 .56 31 1.60
 2016 .28 45 .58 34 1.65
 2017 .33 47 .62 33 1.75

Quarterly Dividends Paid B
 Cal-ender Mar.31 Jun.30 Sep.30 Dec.31 Full Year
 2012 .14 .14 .1775 .1775 64
 2013 .1775 .1775 .2025 .2025 76
 2014 .2025 .2025 .213 .213 83
 2015 .213 .213 .224 .224 87
 2016 .224 .224 .224 .224 87

American States Water did not raise the dividend at the last board meeting. Over the past four years, the company has increased the payout annually, but chose not to do so in August. We do not think that investors should be too concerned as management is probably awaiting a decision on a pending rate case and it also kept the dividend the same for five straight quarters in 2011-2012. **The long-awaited outcome of an important rate case should be revealed in the coming months.** We have been anticipating this for quite some time now. Through its Golden State Water Company (GSWC), the company filed a petition for rate relief for the years 2016 to 2018. The original filing was made in 2014, but the drought in California led to complications as consumers were ordered to reduce water usage. In any case, California regulators have acted constructively with water utilities in the recent past. **Earnings will probably be flat this year.** By the time any rate hike is implemented, it will be too late to have a major impact on 2016's bottom line. (We are assuming that the utility doesn't take the gain all at once or restate 2016 financials.) So, for now, we are sticking with our share-net estimate of \$1.65. **Next year should be better.** No matter how American States chooses to recognize the 2016 rate relief, higher tariffs for two years should be in effect for 2017. As a result, share earnings could rise 6% to \$1.75. **The nonregulated sector of the business should continue to grow.** The ASUS subsidiary was established to use the company's expertise in the private segment of the economy where it can earn higher returns on equity. The focus here has been the privatization of the water systems at U.S. Army facilities. Thus far, ASUS has won 10 contracts, and many more bases are in the process of placing contracts out in a formal bidding process. American States seems to be holding its own as it recently won a 50-year contract with the Elgin Air Force Base. **These shares do not stand out for either short- or long-term potential performance.** The Timeliness rank is 3 (Average), and return prospects to 2019-2021 are subpar.

AMERICAN WATER NYSE-AWK

RECENT PRICE **71.91** P/E RATIO **24.9** (Training: 26.1 Median: NMF) RELATIVE P/E RATIO **1.35** DIV'D YLD **2.2%** VALUE LINE **1782**

TIMELINESS 4 Lowered 9/30/16
SAFETY 3 New 7/25/08
TECHNICAL 3 Lowered 9/30/16
BETA 65 (1.00 = Market)

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

2019-21 PROJECTIONS

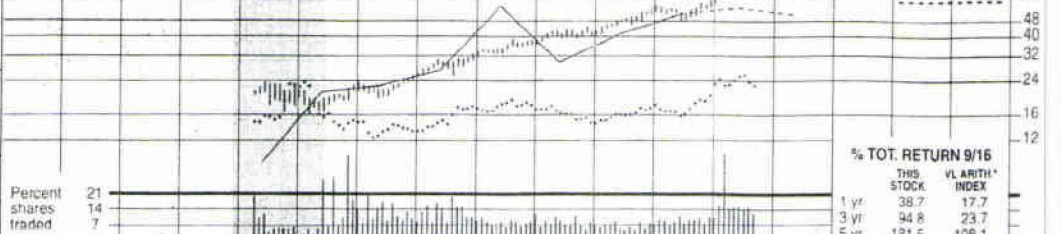
	Price	Gain	Ann'l Total Return
High	90	(+25%)	8%
Low	60	(-15%)	-1%

Insider Decisions

	D	J	F	M	A	M	J	J	A
To Buy	0	0	0	0	0	0	0	0	0
Options	0	0	10	6	0	10	0	0	2
To Sell	0	0	0	6	0	3	0	0	2

Institutional Decisions

	4Q2015	1Q2016	2Q2016	Percent shares traded
To Buy	241	313	290	21
To Sell	227	232	254	14
Net Buy/Sell	147408	158654	150627	7



	2000	2001	2002	2003	2004	2005	2006	2007 ^e	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.75	19.30	19.30	19.30	19.30	19.30	19.30	19.30
Low	6.5	6.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.45	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Div	0.97	0.214	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.85	3.05	3.05	3.05	3.05	3.05	3.05	3.05
Cap	4.31	4.74	6.31	4.50	4.38	5.27	5.50	5.50	5.33	6.51	7.25	7.10	7.25	7.25	7.25	7.25	7.25	7.25
Book	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.05	30.95	30.95	30.95	30.95	30.95	30.95	30.95
Common	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.50	180.00	180.00	180.00	180.00	180.00	180.00	180.00
Avg Ann'l P/E	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Relative P/E	1.14	1.04	0.93	1.05	1.06	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Avg Ann'l Div'd Yield	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%

	2000	2001	2002	2003	2004	2005	2006	2007 ^e	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Revenues per sh	13.08	13.84	14.61	13.98	15.49	15.18	16.25	16.28	16.78	17.72	18.75	19.30	19.30	19.30	19.30	19.30	19.30	19.30
Cash Flow per sh	6.5	6.47	2.87	2.89	3.56	3.73	4.27	4.36	4.75	5.13	5.45	5.75	5.75	5.75	5.75	5.75	5.75	5.75
Earnings per sh ^A	0.97	0.214	1.10	1.25	1.53	1.72	2.11	2.06	2.39	2.64	2.85	3.05	3.05	3.05	3.05	3.05	3.05	3.05
Div'd Decl'd per sh ^B	4.31	4.74	6.31	4.50	4.38	5.27	5.50	5.50	5.33	6.51	7.25	7.10	7.25	7.25	7.25	7.25	7.25	7.25
Cap'l Spending per sh	23.86	28.39	25.64	22.91	23.59	24.11	25.11	26.52	27.39	28.25	29.05	30.95	30.95	30.95	30.95	30.95	30.95	30.95
Book Value per sh ^D	160.00	160.00	160.00	174.63	175.00	175.66	176.99	178.25	179.46	178.28	178.50	180.00	180.00	180.00	180.00	180.00	180.00	180.00
Common Shs Outst g ^C	18.9	15.6	14.6	16.8	16.7	19.9	20.0	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Avg Ann'l P/E Ratio	1.14	1.04	0.93	1.05	1.06	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
Relative P/E Ratio	1.9%	4.2%	3.8%	3.1%	3.4%	2.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Avg Ann'l Div'd Yield	1.14	1.04	0.93	1.05	1.06	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12

CAPITAL STRUCTURE as of 6/30/16
 Total Debt \$685.4 0 mil. Due in 5 Yrs \$127.0 mil.
 LT Debt \$585.0 0 mil. LT Interest \$297.0 mil.
 (53% of Cap'l)

Leases, Uncapitalized: Annual rentals \$14.0 mil.
Pension Assets: 12/15 \$1376.0 mil.
 Oblig. \$1584.0 mil.
Pfd Stock: \$11.0 mil. Pfd Div'd \$2.2 mil

Common Stock: 177,902,408 shs as of 7/28/16

MARKET CAP: \$12.8 billion (Large Cap)

CURRENT POSITION 2014 2015 6/30/16 (\$MILL.)

Cash Assets	23.1	45.0	75.0
Accts Receivable	267.1	255.0	240.0
Other	638.3	357.0	376.0
Current Assets	661.4	657.0	691.0
Accts Payable	285.8	126.0	148.0
Debt Due	511.1	682.0	1004.0
Other	444.1	725.0	588.0
Current Liab	1241.0	1533.0	1740.0

ANNUAL RATES Past 10 Yrs Past 5 Yrs Est'd '13-'15 to '19-'21

Revenues	3.0%	4.5%	4.5%
Cash Flow	9.0%	5.5%	5.5%
Earnings	13.0%	8.0%	8.0%
Dividends	10.0%	10.5%	10.5%
Book Value	2.5%	4.0%	4.0%

QUARTERLY REVENUES (\$ mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	636.1	724.3	829.2	712.3	2901.9
2014	679.0	754.8	848.1	731.4	3011.3
2015	698.0	782.0	896.0	783.0	3159.0
2016	743.0	827.0	945.0	830.0	3345.0
2017	760.0	870.0	990.0	855.0	3475.0

EARNINGS PER SHARE^A

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	32	57	84	33	2.06
2014	39	62	86	52	2.39
2015	44	68	96	56	2.64
2016	46	77	1.00	62	2.85
2017	50	82	1.08	65	3.05

QUARTERLY DIVIDENDS PAID^B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	23	23	25	50	1.21
2013	28	28	28	84	1.21
2014	28	31	31	31	1.21
2015	31	34	34	34	1.33
2016	34	375	375		

BUSINESS: American Water Works Company Inc is the largest investor-owned water and wastewater utility in the U.S., providing services to over 15 million people in over 47 states and Canada (Regulated presence in 16 states.) Nonregulated business assists municipalities and military bases with the maintenance and upkeep as well. Regulated operations made up 86.6% of 2015 revenues.

Acquisitions and cost controls remain key earnings drivers for American Water Works. The domestic water industry in the U.S. is dominated by small municipally-run authorities. Many of these water districts do not have the financial wherewithal to replace aging pipeline infrastructures and to make costly adjustments to be in compliance with EPA regulations. This is a major advantage for American Water, by far the largest of investor-owned water utilities in the U.S., as it buys small (and lately mid sized) water authorities on a continual basis, which gradually increases the company customer base. Also, because there are such redundancies in the water industry, the purchased utility can be absorbed and run substantially more efficiently.

American Water Works should post another solid bottom-line gain in 2016. Management uses an internal "operational and maintenance expense-to-operating revenues" ratio as a measure of how it's performing on the cost front. The ratio has declined from 44.2% in 2010 to 35.9% at year-end 2015. At June 30th, the percentage improved 70 basis points to 35.2%. All

New Jersey is its largest market accounting for 25.7% of regulated revenues. Has 6,700 employees. BlackRock, Inc. owns 10.2% of outstanding shares, Vanguard, 7.2%, officers & directors, less than 1.0% (4/16 Proxy). President & CEO: Susan Story. Chairman: George Mackenzie. Address: 1025 Laurel Oak Road, Voorhees, NJ 08043. Tel: 856-346-8200. Internet: www.amwater.com.

told, we now think the company's share net can rise 8%, to \$2.85 this year. **We expect 2017 to be strong, too.** Through its many subsidiaries, the company is currently seeking \$100 million in higher rates in five different states. With all of this in effect for the full year, some subject to refund, we think American Water's share earnings can climb another 7%, to \$3.05.

The capital budget is large, but manageable. Over the five-year period from 2016 to 2020, the company projects that \$5.5 billion will be required for upgrading its infrastructure along with another \$600 million more needed for acquisitions. Internal funds will be able to finance a majority of these expenditures, but the rest will probably mostly come from the debt markets, as the company is not prone to issue new equity. (Since 2009, shares outstanding have increased by less than 2%.)

These shares are ranked to not keep pace with the broader market averages in the year ahead. Moreover, the stock's prospects to 2019-2021 are subpar. *James A. Flood* October 14, 2016

(A) Diluted earnings. Excludes nonrecurring losses: '06, \$4.62; '09, \$2.63; '11, \$0.07. Discontinued operations: '06, (\$0.04), '11, \$0.03; '12, (\$0.10); '13, (\$0.01). GAAP used as of 2014. Next earnings report due early November. Quarterly earnings may not sum due to rounding. (B) Dividends paid in March, June, September, and December. (C) Div. reinvest-ment available. Two payments made in 4th quarter of 2012. (D) In millions. (E) Includes intangibles. In 6/16 \$1.31 billion \$738/share. (E) Pro forma numbers for '06 & '07.

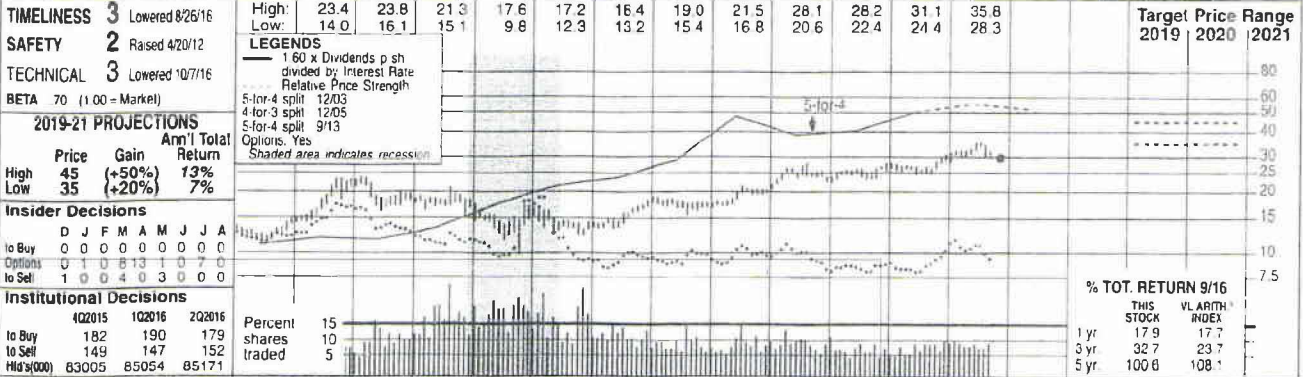
Company's Financial Strength

Stock's Price Stability	B+
Price Growth Persistence	100
Earnings Predictability	90
	95

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AQUA AMERICA NYSE-WTR

RECENT PRICE **29.73** P/E RATIO **21.7** (Trailing: 25.4 Median: 22.0) RELATIVE P/E RATIO **1.17** DIV'D YLD **2.6%** VALUE LINE **1783**



TIMELINESS 3 Lowered 8/26/16
SAFETY 2 Raised 4/20/12
TECHNICAL 3 Lowered 10/7/16
BETA 70 (1.00 = Market)

2019-21 PROJECTIONS

Price	Gain	Ann'l Total Return
High 45	(+50%)	13%
Low 35	(+20%)	7%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	0	0	8	13	1	0	0
to Sell	1	0	0	4	0	3	0	0	0

Institutional Decisions

	4Q2015	1Q2016	2Q2016
to Buy	182	190	179
to Sell	149	147	152
Hld's(000)	83005	85054	85171

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	VALUE LINE PUB. LLC	19-21
1.97	2.16	2.28	2.38	2.78	3.08	3.23	3.61	3.71	3.93	4.21	4.10	4.32	4.32	4.37	4.61	4.70	4.95	Revenues per sh	5.85
61	69	76	77	87	97	101	1.10	1.14	1.29	1.42	1.45	1.51	1.82	1.89	1.87	2.10	2.25	"Cash Flow" per sh	2.65
37	41	43	46	51	57	56	57	58	62	72	83	87	116	1.20	1.14	1.35	1.45	Earnings per sh ^A	1.75
23	24	26	28	29	32	35	38	41	44	47	50	54	58	63	69	74	80	Div'd Decl'd per sh ^B	1.05
93	87	96	106	123	147	164	143	158	166	189	190	198	173	184	207	200	200	Cap'l Spending per sh	2.10
3.08	3.32	3.49	4.27	4.71	5.04	5.57	5.85	6.26	6.50	6.81	7.21	7.90	8.63	9.27	9.78	10.45	11.10	Book Value per sh	13.75
139.78	142.47	141.49	154.31	158.97	161.21	165.41	166.75	169.21	170.61	172.46	173.60	175.43	177.93	178.59	176.54	177.50	178.00	Common Shs Outst'g ^C	180.00
18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	24.9	23.1	21.1	21.3	21.9	21.2	20.8	23.5	23.5	23.5	Avg Ann'l P/E Ratio	22.5
1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	1.50	1.54	1.34	1.34	1.39	1.19	1.09	1.19	1.19	1.19	Relative P/E Ratio	1.40
3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	2.8%	3.1%	3.1%	2.8%	2.8%	2.4%	2.5%	2.6%	2.6%	2.6%	Avg Ann'l Div'd Yield	2.7%

CAPITAL STRUCTURE as of 6/30/16

Total Debt \$1840.4 mill. Due in 5 Yrs \$441.5 mill.
 LT Debt \$1775.9 mill. LT Interest \$78.6 mill.
 (50% of Cap'l)

Pension Assets-12/15 \$238.6 mill. Oblig. \$306.5 mill.

Pfd Stock None
 Common Stock 177,329,959 shares as of 7/20/16

MARKET CAP: \$5.3 billion (Large Cap)

CURRENT POSITION	2014	2015	6/30/16
Cash Assets	4.1	3.2	4.9
Receivables	97.0	99.1	99.7
Inventory (AvgCst)	12.8	12.4	11.7
Other	38.6	13.7	16.1
Current Assets	152.5	128.4	132.4
Debits Payable	60.0	56.5	40.7
Debt Due	70.0	52.3	64.5
Other	95.3	84.4	74.0
Current Liab	225.3	193.2	179.2

ANNUAL RATES of change (per sh)

	Past 10 Yrs.	Past 5 Yrs.	Est'd '13-'15 to '19-'21
Revenues	5.0%	2.5%	4.5%
"Cash Flow"	8.0%	8.0%	6.0%
Earnings	8.5%	13.0%	7.0%
Dividends	8.0%	7.5%	9.0%
Book Value	7.0%	7.0%	7.0%

Cal-endar	QUARTERLY REVENUES (\$ mill.)				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	180.0	195.7	204.3	188.6	768.6
2014	182.7	195.3	210.5	191.4	779.9
2015	190.3	205.8	221.0	197.1	814.2
2016	192.6	208.4	227	202	830
2017	205	220	240	210	875

Cal-endar	EARNINGS PER SHARE ^A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.26	.30	.36	.24	1.16
2014	.24	.31	.38	.27	1.20
2015	.27	.32	.38	.17	1.14
2016	.29	.33	.42	.31	1.35
2017	.31	.37	.45	.32	1.45

Cal-endar	QUARTERLY DIVIDENDS PAID ^B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2012	.132	.132	.132	.14	.54
2013	.14	.14	.152	.152	.58
2014	.152	.152	.165	.165	.63
2015	.165	.165	.178	.178	.69
2016	.178	.178	.1913		

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately three million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Has 1,617 employees. Acquired AquaSource, 7/13; North Maine Utilities, 7/15; and others. Water supply revenues '2015: residential, 69%; commercial, 18%; industrial & other, 13%. Officers and directors own less than 1% of the common stock; Vanguard Group, 7.7%; Blackrock Inc., 7.3%; State Street Capital, 5.5% (3/16 Proxy) President & Chief Executive Officer Christopher Franklin Incorporated Pennsylvania Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Tel.: 610-525-1400. Internet: www.aquaamerica.com

Aqua America should maintain its solid dividend growth rate, in our opinion. Last quarter, the company raised the interim payout to \$0.1913 a share, a healthy 7.5% increase. This hike was in line with Aqua's historical dividend policy over the past 10-year period. We project the annual advance will be in the 7.5%-9.0% range through 2019-2021.

Earnings are on track for a solid comeback in 2016. We expect the positive earnings momentum from the first two quarters to pick up steam in the second half of the year. The utility, through its various subsidiaries, has received permission to charge higher fees in five separate states this year. With all of these increases in effect for the second half and an easy final-quarter comparison, Aqua's share net will likely climb 18%, compared to 2015's depressed level.

Additional rate relief should make 2017 a good year, too. Large rate cases are currently pending in New Jersey and Ohio. While we don't believe state regulators will grant the utility its full revenue requests, Aqua's constructive relationship with state authorities ought to help. All

told, for the full year, we think the increased tariffs from these two states, together with the increases from 2016, should enable the company's share net to rise 7%-8%, to \$1.35.

Shares of Aqua have performed poorly of late. The price of WTR (like others in the water utility group) spiked in the first half of the year due in part to strong demand for higher-yielding stocks with solid dividend growth prospects resulting from, in part, low interest rates on U.S. Treasuries. As a result of institutional investors recently reducing their positions in this sector significantly, the prices of water stocks have tumbled. Indeed, WTR has declined about 20% in value since our July report. By comparison, the S&P 500 Index has risen roughly 3%.

This equity is ranked to mirror the market in the coming year. Over the next 3- to 5-year period, conservative, income-oriented investors may want to take a look here, however. Capital appreciation is a tad below the Value Line median, but the stock has a 2 (Above Average) rank for Safety and a solid balance sheet.

James A. Flood October 14, 2016

(A) Diluted eqs. Excl. nonrec. gains: '00, 2c; '01, 2c; '02, 4c; '03, 3c; '12, 18c. Excl. gain from disc. operations: '12, 7c; '13, 9c; '14, 11c. May not sum due to rounding. Next earnings report due early November.
 (B) Dividends historically paid in early March, June, Sept & Dec. Div'd reinvestment plan available (5% discount).
 (C) In millions, adjusted for stock splits.
 Company's Financial Strength A
 Stock's Price Stability 95
 Price Growth Persistence 70
 Earnings Predictability 90

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CALIFORNIA WATER NYSE-CWT

RECENT PRICE **30.96** P/E RATIO **28.9** (Trailing: 33.7 Median: 20.0) RELATIVE P/E RATIO **1.56** DIV/D YLD **2.2%** VALUE LINE **1784**

TIMELINESS 1 Raised 8/13/16
SAFETY 3 Lowered 7/27/07
TECHNICAL 2 Lowered 9/30/16
BETA 75 (1.00 = Market)



2019-21 PROJECTIONS

High	Price	Gain	Ann'l Total Return
45	(+45%)		12%
30	(-5%)		2%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	1	1	1	1	1	1	1	1	1
Options	0	0	0	25	0	0	0	0	0
to Sell	0	0	0	0	2	0	2	1	0

Institutional Decisions

	4Q2015	1Q2016	2Q2016	Percent
to Buy	69	100	87	18
to Sell	75	72	78	12
Hold (000)	30579	34783	35876	6

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	VALUE LINE PUB. LLC	19-21
8.08	8.13	8.67	8.18	8.59	8.72	8.10	8.88	9.90	10.82	11.05	12.00	13.34	12.23	12.50	12.29	12.60	13.00	Revenues per sh	14.70
1.26	1.10	1.32	1.26	1.42	1.52	1.36	1.56	1.86	1.93	1.93	2.07	2.32	2.21	2.47	2.22	2.30	2.65	"Cash Flow" per sh	3.25
.66	.47	.63	.61	.73	.74	.67	.75	.95	.98	.91	.86	1.02	1.02	1.19	.94	1.00	1.35	Earnings per sh A	1.60
.55	.56	.56	.56	.57	.57	.58	.58	.59	.59	.60	.62	.63	.64	.65	.67	.69	.71	Div'd Decl'd per sh B	.99
2.23	2.04	2.91	2.19	1.87	2.01	2.14	1.84	2.41	2.66	2.97	2.83	3.04	2.58	2.76	3.69	3.65	3.55	Cap'l Spending per sh	3.30
6.45	6.48	6.56	7.22	7.83	7.90	9.07	9.25	9.72	10.13	10.45	10.76	11.28	12.54	13.11	13.41	13.55	14.25	Book Value per sh C	16.00
30.29	30.36	30.36	33.86	36.73	36.78	41.31	41.33	41.45	41.53	41.67	41.82	41.98	47.74	47.81	47.88	48.00	48.00	Common Shs Outst'g D	50.00
19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	19.6	19.7	20.3	21.3	17.9	20.1	19.7	24.8	Bold figures are Value Line estimates		Avg Ann'l P/E Ratio	23.0
1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.39	1.19	1.31	1.29	1.34	1.14	1.13	1.04	1.26			Relative P/E Ratio	1.45
4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	3.1%	3.1%	3.2%	3.4%	3.5%	3.1%	2.8%	2.9%			Avg Ann'l Div'd Yield	2.6%

CAPITAL STRUCTURE as of 6/30/16
Total Debt \$637.0 mill Due in 5 Yrs \$175.3 mill
LT Debt \$555.8 mill **LT Interest** \$27.2 mill (47% of Cap'l)

Pension Assets-12/15 \$328.6 mill
Oblig. \$501.9 mill

Std Stock None

Common Stock 47,971,000 shs

MARKET CAP: \$1.5 billion (Mid Cap)

CURRENT POSITION 2014 2015 6/30/16 (\$MILL.)

	2014	2015	6/30/16
Cash Assets	19.6	8.8	30.8
Other	134.5	118.0	128.2
Current Assets	154.1	127.6	159.0
Accs Payable	59.4	66.4	77.6
Debt Due	85.7	40.2	81.2
Other	72.6	41.9	43.2
Current Liab.	217.7	148.5	202.0

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
334.7	367.1	410.3	449.4	460.4	501.8	560.0	584.1	597.5	588.3	605	625	Revenues (\$mill) E	735						
25.6	31.2	39.8	40.6	37.7	36.1	42.6	47.3	56.7	45.0	48.0	65.0	Net Profit (\$mill)	80.0						
37.4%	39.9%	37.7%	40.3%	39.5%	40.5%	37.5%	30.3%	33.0%	35.3%	32.0%	32.0%	Income Tax Rate	35.0%						
10.6%	8.3%	8.6%	7.6%	4.2%	7.6%	8.0%	4.3%	2.7%	4.2%	5.0%	5.0%	AFUDC % to Net Profit	5.0%						
43.5%	42.9%	41.6%	47.1%	52.4%	51.7%	47.8%	41.6%	40.1%	44.4%	46.0%	45.0%	Long-Term Debt Ratio	42.0%						
55.9%	56.6%	58.4%	52.9%	47.6%	48.3%	52.2%	58.4%	59.9%	55.6%	54.0%	55.0%	Common Equity Ratio	58.0%						
670.1	674.9	690.4	794.9	914.7	931.5	908.2	1024.9	1045.9	1154.5	1200	1250	Total Capital (\$mill)	1375						
941.5	1010.2	1112.4	1198.1	1294.3	1381.1	1457.1	1515.8	1590.4	1701.8	1775	1815	Net Plant (\$mill)	1900						
5.2%	5.9%	7.1%	6.5%	5.5%	5.5%	6.3%	6.0%	6.3%	5.1%	5.0%	6.5%	Return on Total Cap'l	7.0%						
6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.5%	9.5%	Return on Shr. Equity	10.0%						
6.8%	8.1%	9.9%	9.6%	8.6%	8.0%	9.0%	7.9%	9.1%	7.0%	7.5%	9.5%	Return on Com Equity	10.0%						
1.0%	1.8%	3.8%	3.8%	3.0%	2.3%	3.4%	3.4%	4.1%	2.0%	2.5%	4.5%	Retained to Com Eq	4.0%						
86%	77%	61%	60%	66%	71%	62%	56%	55%	71%	69%	52%	All Div'ds to Net Prof	62%						

ANNUAL RATES Past Past Est'd '13-'15 of change (per sh) 10 Yrs. 5 Yrs. to '19-'21

	10 Yrs.	5 Yrs.	to '19-'21
Revenues	4.0%	5.0%	3.0%
"Cash Flow"	6.0%	5.5%	6.0%
Earnings	5.0%	4.0%	7.5%
Dividends	1.5%	2.0%	7.0%
Book Value	5.5%	5.0%	3.5%

BUSINESS: California Water Service Group provides regulated and nonregulated water service to 477,900 customers in 85 communities in the state of California. Accounts for over 94% of total customers. Also operates in Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired Rio Grande Corp. West Hawaii Utilities (9/08). Revenue breakdown, '15: residential, 70%; business, 20%; industrial, 5%; public authorities, 4%; other 1%. '15 reported depreciation rate: 4.0%. Has 1,155 employees. President, Chairman, and CEO: Peter C. Nelson, Inc. DE. Address: 1720 North First St., San Jose, CA 95112-4598. Tel: 408-367-8200. Internet: www.cawatergroup.com.

California Water Service Group shares have dipped about 10% in price since our July review. Similar to a handful of other equities in the utility industry, CWT stock recently etched an all-time high in 2016, and investors unsurprisingly took this opportune time to take some profits off the table. However, California posted better-than-anticipated financial results in the second quarter, leading us to believe the selloff may be short-lived.

Revenues and earnings improved nicely compared to prior-year figures. California Water generated \$152 million in sales during the second quarter (a 6% annual increase), largely due to higher accrued unbilled revenues. Moreover, we are lifting our full-year revenue call by \$5 million, to \$605 million, supported by continued collections on drought expenses (conditions that have yet to improve), as well as potentially positive rate activity on the horizon for 2017. On the earnings front, second-quarter net income was \$0.02 better than we expected, at \$0.24 a share, marking a healthy double-digit improvement over the year-earlier tally. Thinner

operating and maintenance expenses, namely pension costs, gave the bottom line a boost. Though, at this time, our 2016 share net estimate remains unchanged, at \$1.00.

Capital investment will likely be the main theme in California's long-term story. Over the 3- to 5-year stretch, it is probable that CWT will spend more than \$3.00 per share annually to revitalize aging infrastructure, water tanks, and water supply. The company has already spent more in the first half of 2016 than it has in past years, and we think this trend ought to continue further out. In addition, acquisitions are likely to be an supplemental growth avenue. The balance sheet is in good shape, with a decent amount of cash on hand and less than 50% of its total capital comprised of debt.

These favorably ranked shares are best suited for near-term accounts. Meanwhile, those looking to add a security to the buy-and-hold portion of their portfolio should exercise patience, as the stock is already trading inside of our 3- to 5-year Target Price Range.

Nicholas P. Patrikis October 14, 2016

Cal-ender	QUARTERLY REVENUES (\$ mill) F				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	111.4	154.6	184.4	133.7	584.1
2014	110.5	158.4	191.2	137.4	597.5
2015	122.0	144.4	183.5	138.4	588.3
2016	121.7	152.4	190	140.9	605
2017	130	155	195	145	625

Cal-ender	EARNINGS PER SHARE A				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2013	.01	.28	.61	.12	1.02
2014	d.11	.36	.70	.24	1.19
2015	.03	.21	.52	.18	.94
2016	d.02	.24	.58	.20	1.00
2017	.05	.35	.65	.30	1.35

Cal-ender	QUARTERLY DIVIDENDS PAID B				Full Year
	Mar.31	Jun.30	Sep.30	Dec.31	
2012	.1575	.1575	.1575	.1575	.63
2013	.16	.16	.16	.16	.64
2014	.1625	.1625	.1625	.1625	.65
2015	.1675	.1675	.1675	.1675	.67
2016	.1725	.1725	.1725		

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (4c); '01, 2c; '02, 4c; '11, 4c. Next earnings report due late November.
 (B) Dividends historically paid in late Feb., May, Aug., and Nov. Div'd reinvestment plan available.
 (C) Incl. intangible assets. In '15: \$7.5 mill, \$0.16/sh.
 (D) In millions, adjusted for splits.
 (E) Excludes non-reg. rev.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	35
Earnings Predictability	75

CONNECTICUT WATER NDOQ-CTWS

RECENT PRICE **49.21** P/E RATIO **22.2** (Trading: 22.8 Median: 20.0) RELATIVE P/E RATIO **1.20** DIV'D YLD **2.3%** VALUE LINE **1785**

TIMELINESS 3 Lowered 9/2/16	High: 28.2 27.7 25.6 20.0 26.4 27.9 29.1 32.8 36.4 37.5 39.9 56.6	Target Price Range 2019 2020 2021
SAFETY 3 New 1/18/13	Low: 21.9 20.3 22.4 19.3 17.3 20.0 23.3 26.2 27.8 31.0 33.2 37.5	
TECHNICAL 3 Lowered 10/7/16		
BETA .60 (1.00 = Market)		



2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	VALUE LINE PUB. LLC 19-21	
5.70	5.93	5.77	5.91	6.04	5.81	5.66	7.05	7.24	6.93	7.65	7.93	9.47	8.29	8.45	8.58	8.70	9.20	Revenues per sh	13.35
1.73	1.78	1.78	1.89	1.91	1.62	1.52	1.90	1.95	1.93	2.04	2.11	2.64	2.63	2.97	3.18	3.35	3.45	"Cash Flow" per sh	3.75
1.09	1.13	1.12	1.15	1.16	.88	.81	1.05	1.11	1.19	1.13	1.13	1.53	1.66	1.92	2.04	2.20	2.25	Earnings per sh A	2.50
.79	.80	.81	.83	.84	.85	.86	.87	.88	.90	.92	.94	.96	.98	1.01	1.05	1.12	1.20	Div'd Decl'd per sh B	1.35
1.43	1.86	1.98	1.49	1.58	1.96	1.96	2.24	2.44	3.28	3.06	2.61	2.79	3.02	4.11	4.29	5.80	4.35	Cap'l Spending per sh	3.35
8.92	9.25	10.06	10.46	10.94	11.52	11.60	11.95	12.23	12.67	13.05	13.50	20.95	17.92	18.83	20.02	20.70	21.75	Book Value per sh D	22.90
7.28	7.65	7.94	7.97	8.04	8.17	8.27	8.38	8.46	8.57	8.68	8.76	8.85	11.04	11.12	11.19	11.35	11.50	Common Shs Outst'g C	12.00
18.2	21.5	24.3	23.5	22.9	28.6	29.0	23.0	22.2	18.4	20.7	23.0	19.4	18.4	17.5	17.6	17.6	17.6	Avg Ann'l P/E Ratio	19.0
1.18	1.10	1.33	1.34	1.21	1.52	1.57	1.22	1.34	1.23	1.32	1.44	1.23	1.03	.92	.89	.89	.89	Relative P/E Ratio	1.20
4.0%	3.3%	3.0%	3.0%	3.1%	3.4%	3.6%	3.6%	3.6%	4.1%	3.9%	3.6%	3.2%	3.2%	3.0%	2.9%	2.9%	2.9%	Avg Ann'l Div'd Yield	2.8%

CAPITAL STRUCTURE as of 6/30/16																		
Total Debt \$203.8 mill. Due in 5 Yrs \$19.3 mill.																		
LT Debt \$200.9 mill. LT Interest \$8.0 mill. (47% of Cap'l)																		
Leases, Uncapitalized: Annual rentals \$ 3 mill.																		
Pension Assets-12/15 \$56.6 mill. Oblig. \$75.8 mill.																		
Pfd Stock \$0.8 mill. Pfd Divd NMF																		
Common Stock 11,231,037 shs.																		
MARKET CAP: \$550 million (Small Cap)																		

CURRENT POSITION 2014 2015 6/30/16 (\$MILL.)																		
Cash Assets 2.5 7 1.1																		
Accounts Receivable 12.0 11.0 11.6																		
Other 21.7 15.3 18.2																		
Current Assets 36.2 27.0 30.9																		
Accts Payable 10.0 11.9 11.6																		
Debt Due 4.4 2.8 2.9																		
Other 9.2 22.2 15.8																		
Current Liab. 23.6 36.9 30.3																		

BUSINESS: Connecticut Water Service, Inc. is a non-operating holding company, whose income is derived from earnings of its wholly-owned subsidiary companies (regulated water utilities). In 2015, 92% of net income was derived from these activities. Provides water services to 400,000 people in 77 municipalities throughout Connecticut and Maine. Acquired The Maine Water Company, January 2012; Biddeford and Saco Water, December, 2012. Incorporated: Connecticut. Has 266 employees. Chairman/President/Chief Executive Officer: Eric W. Thornburg. Officers and directors own 2.6% of the common stock; BlackRock, Inc. 7.0%; (4/16 proxy). Address: 93 West Main Street, Clinton, CT 06413. Telephone (860) 669-8636. Internet: www.ctwater.com.

ANNUAL RATES of change (per sh)				
Past 10 Yrs.	Past 5 Yrs.	Est'd '13-'15 to '19-'21		
Revenues 4.0%	4.5%	8.0%		
"Cash Flow" 4.0%	7.5%	4.0%		
Earnings 4.0%	9.0%	5.0%		
Dividends 2.0%	2.0%	5.0%		
Book Value 6.5%	9.5%	3.0%		

QUARTERLY REVENUES (\$ mill.)					
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	19.7	22.6	27.6	21.6	91.5
2014	20.3	25.4	27.6	20.7	94.0
2015	20.0	26.6	28.4	21.0	96.0
2016	21.6	26.1	29.0	22.3	99.0
2017	23.0	28.0	32.0	23.0	106

EARNINGS PER SHARE A					
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	24	.39	86	17	1.66
2014	27	.67	76	22	1.92
2015	28	.77	79	20	2.04
2016	28	.89	.83	20	2.20
2017	30	.79	.88	28	2.25

QUARTERLY DIVIDENDS PAID B					
Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	238	238	2425	2425	962
2013	2425	2425	2475	2475	98
2014	2475	2475	2575	2575	1.01
2015	2575	2575	2675	2675	1.05
2016	2675	2825	2825		

(A) Diluted earnings. Next earnings report due late November.
 (B) Dividends historically paid in mid-March, June, September, and December. ■ Div'd reinvestment plan available.
 (C) In millions, adjusted for split.
 (D) Includes intangibles. In 2015: \$30.4 million/\$2.72 a share.

Company's Financial Strength B+
 Stock's Price Stability 90
 Price Growth Persistence 50
 Earnings Predictability 85

MIDDLESEX WATER NDAQ-MSEX

RECENT PRICE **34.04** P/E RATIO **23.8** (Trailing: 25.4 Median: 20.0) RELATIVE P/E RATIO **1.29** DIV'D YLD **2.4%** VALUE LINE **1787**

TIMELINESS 3 Lowered 10/14/16	High: 23.5 20.5 20.2 19.8 17.9 19.3 19.4 19.6 22.5 23.7 28.0 44.1	Low: 17.1 16.5 16.9 12.0 11.6 14.7 16.5 17.5 18.6 19.1 21.2 25.0	Target Price Range 2019 2020 2021
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SAFETY 2 New 10/21/11
TECHNICAL 2 Lowered 9/30/16
BETA 73 (1.00 = Market)

LEGENDS
 1.20 x Dividends p sh divided by Interest Rate
 Relative Price Strength
 4-In-3 split: 11/03
 Options: Yes
 Shaded area indicates recession

2019-21 PROJECTIONS

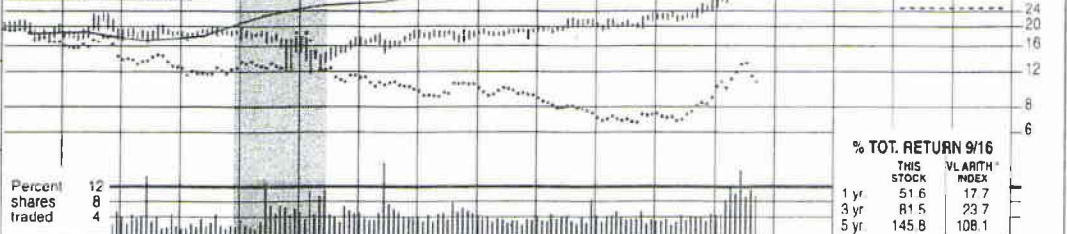
Price	Gain	Ann'l Total Return
High 35 (+5%)		3%
Low 25 (-25%)		-4%

Insider Decisions

	D	J	F	M	A	M	J	J	A
to Buy	0	0	0	1	0	0	0	0	0
Options	0	0	0	1	0	0	0	0	0
to Sell	1	0	0	1	2	0	0	0	0

Institutional Decisions

	4Q2015	1Q2016	2Q2016
to Buy	41	62	59
to Sell	50	45	52
Hold(000)	6584	6822	7208



2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	19-21	
5.39	5.87	5.98	5.12	6.25	6.44	6.16	6.50	6.79	6.75	6.60	6.50	6.98	7.19	7.26	7.77	8.05	8.05	Revenues per sh	9.40
99	118	120	1.15	1.28	1.33	1.33	1.49	1.53	1.40	1.55	1.46	1.56	1.72	1.84	1.97	2.20	2.30	"Cash Flow" per sh	2.55
51	66	73	.61	.73	.71	.82	.87	.89	.72	.96	.84	.90	1.03	1.13	1.22	1.40	1.45	Earnings per sh ^	1.50
61	62	.63	.65	.66	.67	.68	.69	.70	.71	.72	.73	.74	.75	.76	.78	.81	.84	Div'd Decl'd per sh ^	.91
1.32	1.25	1.59	1.87	2.54	2.18	2.31	1.66	2.12	1.49	1.90	1.50	1.36	1.26	1.40	1.59	1.75	1.80	Cap'l Spending per sh	2.05
6.98	7.11	7.39	7.60	8.02	8.26	9.52	10.05	10.03	10.33	11.13	11.27	11.48	11.82	12.24	12.74	13.15	13.35	Book Value per sh	15.60
10.11	10.17	10.36	10.48	11.36	11.58	13.17	13.25	13.40	13.52	15.57	15.70	15.82	15.96	16.12	16.23	16.30	16.50	Common Shs Outst'g ^	17.00
28.7	24.6	23.5	30.0	26.4	27.4	22.7	21.6	19.8	21.0	17.8	21.7	20.8	19.7	18.5	19.1	19.7	19.7	Avg Ann'l P/E Ratio	21.0
1.87	1.26	1.28	1.71	1.39	1.46	1.23	1.15	1.19	1.40	1.13	1.36	1.32	1.11	97	97	97	97	Relative P/E Ratio	1.30
4.2%	3.8%	3.7%	3.5%	3.4%	3.5%	3.7%	3.7%	4.0%	4.7%	4.2%	4.0%	4.0%	3.7%	3.7%	3.3%	3.7%	3.3%	Avg Ann'l Div'd Yield	3.0%
CAPITAL STRUCTURE as of 6/30/16																			
Total Debt \$147.4 mill. Due in 5 Yrs \$30.8 mill.																			
LT Debt \$131.0 mill. LT Interest \$5.6 mill.																			
(Total interest coverage: 7.4x)																			
(39% of Cap'l)																			
Pension Assets-12/15 \$52.9 mill.																			
Oblig. \$72.5 mill.																			
Pfd Stock \$2.4 mill. Pfd Div'd: \$ 1 mill.																			
Common Stock 16,280,430 shs as of 7/31/16																			
MARKET CAP: \$550 million (Small Cap)																			
81.1 86.1 91.0 91.2 102.7 102.1 110.4 114.8 117.1 126.0 131 133 Revenues (\$mill)																			
10.0 11.8 12.2 10.0 14.3 13.4 14.4 16.6 18.4 20.0 23.0 24.0 Net Profit (\$mill)																			
33.4% 32.6% 33.2% 34.1% 32.1% 32.7% 33.9% 34.1% 35.0% 34.5% 35.0% 35.0% Income Tax Rate																			
-- -- -- -- 6.8% 6.1% 3.4% 1.9% 1.7% 1.9% 2.0% 2.0% AFUDC % to Net Profit																			
49.5% 49.0% 45.6% 46.6% 43.1% 42.3% 41.5% 40.4% 40.5% 39.4% 38.5% 38.5% Long-Term Debt Ratio																			
47.5% 49.6% 51.8% 52.1% 55.8% 56.6% 57.4% 58.7% 58.8% 59.8% 61.5% 61.5% Common Equity Ratio																			
264.0 268.8 259.4 267.9 310.5 312.5 316.5 321.4 335.8 345.4 350 360 Total Capital (\$mill)																			
317.1 333.9 366.3 376.5 405.9 422.2 435.2 446.5 465.4 481.9 495 515 Net Plant (\$mill)																			
5.1% 5.6% 5.8% 5.0% 5.7% 5.2% 5.4% 5.9% 6.3% 6.6% 7.5% 7.5% Return on Total Cap'l																			
7.5% 8.6% 8.6% 7.0% 8.1% 7.5% 7.8% 8.7% 9.2% 9.6% 10.5% 11.0% Return on Shr. Equity																			
7.8% 8.7% 8.9% 7.0% 8.2% 7.5% 7.8% 8.7% 9.3% 9.6% 10.5% 11.0% Return on Com Equity																			
1.3% 1.5% 2.0% 1% 2.1% 1.0% 1.4% 2.4% 3.1% 3.5% 4.5% 4.5% Return to Com Eq																			
84% 79% 76% 98% 75% 87% 83% 73% 67% 63% 58% 58% All Div'ds to Net Prof																			

CURRENT POSITION (SMILL.)

	2014	2015	6/30/16
Cash Assets	2.7	3.5	1.2
Other	20.2	20.9	27.1
Current Assets	22.9	24.4	28.3
Accts Payable	6.4	6.5	9.5
Debt Due	24.9	8.7	16.4
Other	12.6	13.1	13.2
Current Liab	43.9	28.3	39.1

ANNUAL RATES

	Past 10 Yrs	Past 5 Yrs	Est'd '13-'15
of change (per sh)			to '19-'21
Revenues	1.5%	2.0%	4.0%
"Cash Flow"	4.0%	4.5%	5.5%
Earnings	5.0%	5.5%	5.0%
Dividends	1.5%	1.5%	3.0%
Book Value	4.5%	3.0%	4.0%

QUARTERLY REVENUES (\$mill.)

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	27.0	29.1	31.3	27.4	114.8
2014	27.1	29.2	32.7	28.1	117.1
2015	28.8	31.7	34.7	30.8	126.0
2016	30.6	32.7	35.5	32.2	131
2017	31.0	33.0	36.0	33.0	133

EARNINGS PER SHARE ^

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2013	.20	.28	.36	.19	1.03
2014	.20	.29	.42	.22	1.13
2015	.22	.31	.41	.28	1.22
2016	.29	.36	.43	.32	1.40
2017	.32	.34	.46	.33	1.45

QUARTERLY DIVIDENDS PAID ^

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.185	.185	.185	.1875	.74
2013	.1875	.1875	.1875	.19	.75
2014	.19	.19	.19	.1925	.76
2015	.1925	.1925	.1925	.19875	.76
2016	.19875	.19875	.19875		

BUSINESS: Middlesex Water Company engages in the ownership and operation of regulated water utility systems in New Jersey, Delaware, and Pennsylvania. It also operates water and wastewater systems under contract on behalf of municipal and private clients in NJ and DE. Its Middlesex System provides water services to 60,000 retail customers, primarily in Middlesex County, New Jersey. In

Middlesex Water Company shares have taken a step back in price subsequent to registering strong gains over the past few quarters. Since our July review, MSEX stock shed nearly 15% in value. We think the selloff was somewhat warranted, given the equity's rich valuation (from a P/E standpoint). Nevertheless, the company delivered a slightly better-than-expected financial performance in the second quarter. Revenues of \$32.7 million came in modestly above our call. Middlesex's New Jersey operations experienced strong demand for regulated water and from contract customers. Moreover, the rate increase implemented in August of last year by the Board of Public Utilities continues to be a net positive. On the earnings front, the company reported net income of \$0.36 a share, \$0.03 better than we had expected.

We are adding two pennies to our 2016 bottom-line estimate. Profit margins are being helped along by lower operation and maintenance expenses, as well as lighter employee benefit costs. This has more than offset higher labor costs. Indeed, we think year-over-year quarterly

2015, the Middlesex System accounted for 59% of operating revenues. At 12/31/15, the company had 293 employees. Incorporated: NJ. President, CEO, and Chairman: Dennis W. Doll. Officers & directors own 3.5% of the common stock; BlackRock Institutional Trust Co., 6.4% (4/16 proxy). Add.: 1500 Ronson Road, Iselin, NJ 08830. Tel: 732-634-1500. Internet: www.middlesexwater.com

share-net comparables should be strong through the remainder of the year, resulting in earnings of \$1.40 a share for 2016. **The infrastructure replacement project in Edison and South Amboy, New Jersey is under way.** Eight miles and \$12 million worth of water mains, valves, and service lines are being upgraded to support the company's distribution system in the area.

This equity has been lowered two notches for Timeliness, to 3. Now pegged to mirror the broader market averages over the coming six to 12 months, investors may want to stay on the sidelines, at this juncture. That said, we think conservative, income-seeking accounts should keep MSEX on their radar. We anticipate an above-average dividend yield over the pull to late decade. What's more, water utilities, in general, can be a safe haven in times of turbulent market conditions. Thus, given Middlesex's low Beta (0.70) and relatively noncyclical business model, investors could find these shares appealing should broader market indices take a turn for the worse.

Nicholas P. Patrikis October 14, 2016

(A) Diluted earnings. May not sum due to rounding. Next earnings report due early November	May, Aug., and November. ^ Div'd reinvestment plan available.	Company's Financial Strength	B++
(B) Dividends historically paid in mid-Feb.	(C) In millions, adjusted for split.	Stock's Price Stability	90
		Price Growth Persistence	40
		Earnings Predictability	85

SJW CORP. NYSE-SJW

RECENT PRICE **42.19** P/E RATIO **21.2** (Trailing: 18.9 Median: 24.0) RELATIVE P/E RATIO **1.15** DIV'D YLD **1.9%** VALUE LINE **1788**

TIMELINESS 3 Lowered 5/6/16
SAFETY 3 New 4/22/11
TECHNICAL 2 Raised 10/14/16
BETA 70 (1.00 = Market)



2019-21 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+30%)	9%
Low	35	(-15%)	-2%

Insider Decisions

	D	J	F	M	A	M	J	J	A
To Buy	3	0	0	0	0	0	0	0	0
Options	0	9	0	5	0	0	0	0	0
To Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q2015	1Q2016	2Q2016
To Buy	43	64	64
To Sell	59	41	68
Hold's(1000)	8694	9256	9308

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Price	6.74	7.45	7.97	8.20	9.14	9.86	10.35	11.25	12.12	11.68	11.62	12.85	14.01	13.73	15.76	14.97	15.10	15.00	15.00	15.00	15.00	15.00	15.00
Gain	1.23	1.49	1.55	1.75	1.89	2.21	2.38	2.30	2.44	2.21	2.38	2.80	2.97	2.90	4.42	3.86	3.95	4.00	4.00	4.00	4.00	4.00	4.00
Ann'l Total Return	.58	.77	.78	.91	.87	1.12	1.19	1.04	1.08	.81	.84	1.11	1.18	1.12	2.54	1.85	1.90	1.95	1.95	1.95	1.95	1.95	1.95
Volume	41	43	46	49	51	53	57	61	65	66	68	69	71	73	75	78	.81	.81	.81	.81	.81	.81	.81
Div'd	1.89	2.63	2.06	3.41	2.31	2.83	3.67	6.62	3.79	3.17	5.65	3.75	5.67	4.68	5.02	5.24	5.35	5.50	5.50	5.50	5.50	5.50	5.50
P/E Ratio	7.90	8.17	8.40	9.11	10.11	10.72	12.48	12.90	13.99	13.66	13.75	14.20	14.71	15.92	17.75	18.83	19.00	19.75	19.75	19.75	19.75	19.75	19.75
Relative P/E	18.27	18.27	18.27	18.27	18.27	18.27	18.28	18.36	18.18	18.50	18.55	18.59	18.67	20.17	20.29	20.38	20.50	21.00	21.00	21.00	21.00	21.00	21.00
Common Shs Outst'g	33.1	18.5	17.3	15.4	19.6	19.7	23.5	33.4	26.2	28.7	29.1	21.2	20.4	24.3	11.2	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
Revenue per sh	2.15	.95	.94	.88	1.04	1.05	1.27	1.77	1.58	1.91	1.85	1.33	1.30	1.37	.59	.84	.84	.84	.84	.84	.84	.84	.84
"Cash Flow" per sh	2.1%	3.0%	3.4%	3.5%	3.0%	2.4%	2.0%	1.7%	2.3%	2.8%	2.8%	2.9%	3.0%	2.7%	2.6%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Earnings per sh	189.2	206.6	220.3	216.1	215.6	239.0	261.5	276.9	319.7	305.1	310	315	310	310	310	310	310	310	310	310	310	310	310
Div'd Decl'd per sh	22.2	19.3	20.2	15.2	15.8	20.9	22.3	23.5	51.8	37.9	39.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0
Cap'l Spending per sh	40.8%	39.4%	39.5%	40.4%	38.8%	41.1%	41.1%	38.7%	32.5%	36.1%	39.0%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%	39.5%
Book Value per sh	2.1%	2.7%	2.3%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Common Shs Outst'g	41.8%	47.7%	46.0%	49.4%	53.7%	56.6%	55.0%	51.1%	51.6%	49.8%	49.0%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%	50.5%
Avg Ann'l P/E Ratio	58.2%	52.3%	54.0%	50.6%	46.3%	43.4%	45.0%	48.9%	48.4%	50.2%	51.0%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%	49.5%
Relative P/E Ratio	39.8	453.2	470.9	489.6	550.7	607.9	610.2	656.2	744.5	764.6	765	840	840	840	840	840	840	840	840	840	840	840	840
Avg Ann'l Div'd Yield	54.7	645.5	684.2	718.5	785.5	756.2	831.6	898.7	963.0	1036.8	1100	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Income Tax Rate	7.0%	5.7%	5.8%	4.4%	4.3%	4.9%	5.0%	5.0%	8.3%	6.3%	6.5%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
AFUDC % to Net Profit	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Long-Term Debt Ratio	9.7%	8.2%	8.0%	6.0%	6.2%	7.9%	8.1%	7.3%	14.4%	9.9%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Common Equity Ratio	5.2%	3.5%	3.3%	1.2%	1.2%	3.1%	3.3%	2.8%	10.2%	5.7%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Total Capital (\$mill)	46%	57%	59%	80%	80%	61%	59%	62%	29%	42%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%	43%
Net Plant (\$mill)	BUSINESS: SJW Corporation engages in the production, purchase, storage, purification, distribution, and retail sale of water. It provides water service to approximately 229,000 connections with a total population of roughly one million people in the San Jose area and 12,000 connections that reaches about 36,000 residents in the region between San Antonio and Austin, Texas. The company also offers nonregulated water-related services and owns and operates commercial real estate investments. Has about 399 employees. Officers and directors (including Nancy O. Moss) own 28.3% of outstanding shares. Chairman Charles J. Toeniskoetter Incorporated: California. Address: 110 West Taylor Street, San Jose, CA 95110. Telephone: (408) 279-7800. Internet: www.sjwater.com.																						

CAPITAL STRUCTURE as of 6/30/16
 Total Debt \$431.7 mill Due in 5 Yrs \$21.2 mill
 LT Debt \$354.2 mill LT Interest \$21.0 mill
 (49% of Cap'l)

Leases, Uncapitalized: Annual rents \$6.6 mill

Pension Assets-12/15 \$105.0 mill.
 Oblig. \$164.3 mill

Pfd Stock None.

Common Stock 20,442,128 shs

MARKET CAP: \$850 million (Small Cap)

	2014	2015	6/30/16
CURRENT POSITION (\$MILL)			
Cash Assets	2.4	5.2	12.5
Accts Receivable	15.0	16.4	17.3
Other	50.7	51.8	62.9
Current Assets	68.1	73.4	92.7
Accts Payable	7.0	16.2	23.8
Debt Due	13.8	38.1	67.5
Other	23.9	25.3	28.8
Current Liab.	44.7	79.6	120.1

	10 Yrs.	Past 5 Yrs.	Est'd '13-'15
ANNUAL RATES of change (per sh)			
Revenues	5.0%	4.5%	4.0%
"Cash Flow"	6.5%	10.0%	1.0%
Earnings	6.5%	15.0%	1.5%
Dividends	4.0%	2.5%	5.5%
Book Value	6.0%	5.0%	4.0%

Shares of SJW Corp. are making up for their relatively lagging price performance over the first half of the year. The stock is up more than 10% in value since our July review, which compares favorably to the rest of the water utility industry that, on average, is down approximately 10% over the same time frame. To wit, SJW had not experienced as robust a price ascent as others in the early stages of 2016, but its most recent financial showing has undoubtedly given the stock support.

SJW Corp's second-quarter results were impressive. Revenues of about \$87 million during the period improved 20%, year over year, driven primarily by true-up revenue recognition stemming from its California general rate case application, as well as revenue built up in the Water Conservation Memorandum account (also a form of special recognition). Between the two, a positive of nearly \$8 million was recognized this quarter. Much of the quarter's revenue gains seemed to make their way to the bottom line, as operating and interest expenses remained relatively flat, on both a sequential and year-over-

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
QUARTERLY REVENUES (\$ mill.)					
2013	50.1	74.2	85.2	67.4	276.9
2014	54.6	70.4	125.4	69.3	319.7
2015	62.1	72.4	83.0	87.6	305.1
2016	61.1	86.9	87.0	75.0	310
2017	66.0	77.0	90.0	82.0	315
EARNINGS PER SHARE A					
2013	.07	.37	.44	.24	1.12
2014	.04	.34	1.88	.28	2.54
2015	.23	.36	.46	.80	1.85
2016	.16	.82	.45	.47	1.90
2017	.25	.45	.65	.60	1.95
QUARTERLY DIVIDENDS PAID B					
2012	1.775	1.775	1.775	1.775	71
2013	1.825	1.825	1.825	1.825	73
2014	1.875	1.875	1.875	1.875	75
2015	1.950	1.950	1.950	1.950	78
2016	2.025	2.025	2.025		

year basis. Net income of \$0.82 a share more than doubled from the like 2015 figure. All things considered, we are raising our 2016 top- and bottom-line estimates by \$5 million and \$0.15, to \$310 million and \$1.90 a share, respectively.

The company is moving full steam ahead with its capital expenditure program. With more than \$300 million earmarked for water system upgrades, just over \$30 million was spent in the second quarter for utility plant improvements (\$60 million year to date). A good portion of the funds will likely be allocated to new construction through the remainder of this year and next, which includes \$25 million for its Montevina Water Treatment Plant project. All in all, we expect capital spending to be one of the main growth drivers over the pull to late decade.

At the moment, SJW stock does not stand out for either the short or long haul. The equity is ranked to be a market performer in the year ahead. Also, capital appreciation potential three to five years out is below *The Value Line Investment Survey* median.

Nicholas P. Patrikis
 October 14, 2016

(A) Diluted earnings. Excludes nonrecurring losses '03, \$1.97; '04, \$3.78; '05, \$1.09; '06, \$16.36; '08, \$1.22; '10, \$0.46. GAAP accounting as of 2013. Next earnings report due late November. Quarterly earnings may not add due to rounding.

(B) Dividends historically paid in early March, June, September, and December. Div'd reinvestment plan available. (C) In millions, adjusted for stock splits.

YORK WATER NDQ-YORW

RECENT PRICE **28.76** P/E RATIO **28.8** (Trailing: 29.6 Median: 24.0) RELATIVE P/E RATIO **1.56** DIV YLD **2.2%** VALUE LINE **1789**

TIMELINESS 3 Lowered 10/14/16
SAFETY 3 Lowered 7/17/15
TECHNICAL 3 Lowered 9/30/16
BETA 70 (1.00 = Market)

LEGENDS
 1.10 x Dividends p sh divided by Interest Rate
 Relative Price Strength
 3-for-2 split: 5/10c
 Options: Yes
 Shaded area indicates recession

2019-21 PROJECTIONS

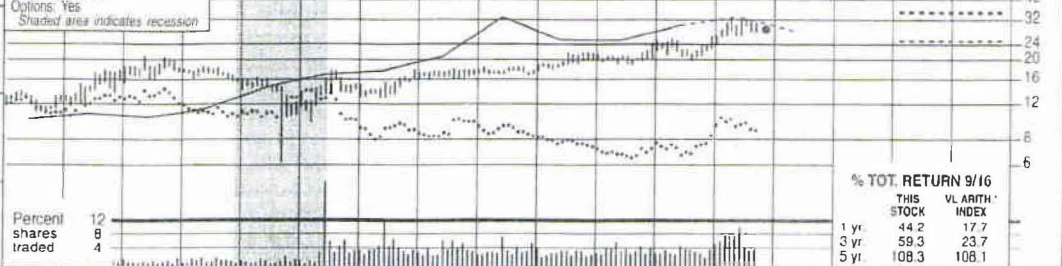
	Price	Gain	Ann'l Total Return
High	35	(+20%)	7%
Low	25	(-15%)	-1%

Insider Decisions

	D	J	F	M	A	M	J	J	A
To Buy	0	0	0	0	0	0	0	0	0
To Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q2015	1Q2016	2Q2016
To Buy	36	43	44
To Sell	24	30	36
Hld's(000)	3820	3860	4006



2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	VALUE LINE PUB. LLC	19-21
2.05	2.05	2.17	2.18	2.58	2.56	2.79	2.89	2.95	3.07	3.18	3.21	3.27	3.58	3.68	3.80	4.10	4.10	Revenues per sh	5.40
59	57	65	65	79	77	86	88	95	1.07	1.09	1.12	1.19	1.36	1.47	1.50	1.65	1.65	"Cash Flow" per sh	1.90
43	40	47	49	56	58	57	57	64	71	.71	.72	.75	89	97	.97	1.05	1.05	Earnings per sh A	1.25
34	35	37	39	42	45	48	49	51	52	.53	.54	.55	57	.60	.63	.66	.66	Div'd Decl'd per sh B	.85
75	66	1.07	2.50	1.69	1.85	1.89	2.17	1.18	.83	.74	.94	.76	1.10	1.08	1.60	1.70	1.70	Cap'l Spending per sh	.85
3.79	3.90	4.06	4.65	4.85	5.84	5.97	6.14	6.92	7.19	7.45	7.73	7.98	8.15	8.52	8.75	8.95	8.95	Book Value per sh	10.15
9.46	9.55	9.63	10.33	10.40	11.20	11.27	11.37	12.56	12.69	12.79	12.92	12.98	12.83	12.81	12.80	12.50	12.50	Common Shs Outst'g C	12.00
17.8	26.9	24.5	25.7	26.3	31.2	30.3	24.6	21.9	20.7	23.9	24.4	26.3	23.1	23.5	23.5	23.5	23.5	Avg Ann'l P/E Ratio	22.5
91	1.47	1.40	1.36	1.40	1.68	1.61	1.48	1.46	1.32	1.50	1.55	1.48	1.22	1.19	1.19	1.19	1.19	Relative P/E Ratio	1.40
4.4%	3.3%	3.2%	3.1%	2.9%	2.5%	2.8%	3.5%	3.6%	3.5%	3.1%	3.1%	2.8%	2.8%	2.6%	2.6%	2.6%	2.6%	Avg Ann'l Div'd Yield	3.4%

CAPITAL STRUCTURE as of 6/30/16
 Total Debt \$84.6 mill. Due in 5 Yrs \$30.5 mill.
 LT Debt \$84.6 mill. LT Interest \$5.1 mill.

Pension Assets 12/15 \$31.8 mill.
 Oblig. \$39.5 mill.

Pld Stock None

Common Stock 12,867,736 shs

MARKET CAP: \$375 million (Small Cap)

CURRENT POSITION

	2014	2015	6/30/16
Cash Assets	1.5	2.9	5.0
Accounts Receivable	4.0	3.5	3.8
Inventory (Avg Cost)	.8	.8	.8
Other	4.9	4.6	3.4
Current Assets	11.2	11.8	13.0
Accts Payable	1.6	1.8	1.6
Debt Due	-	-	-
Other	4.3	4.4	4.4
Current Liab.	5.9	6.2	6.0

ANNUAL RATES of change (per sh)

	Past 10 Yrs	Past 5 Yrs	Est'd '13-'15
Revenues	4.5%	3.0%	7.5%
"Cash Flow"	7.0%	6.5%	6.0%
Earnings	5.5%	6.0%	6.0%
Dividends	4.0%	2.5%	6.5%
Book Value	6.5%	4.5%	3.5%

QUARTERLY REVENUES (\$mill.)

Cal-endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2013	10.1	10.7	10.9	10.7	42.4
2014	10.6	11.8	12.0	11.5	45.9
2015	11.2	11.9	12.4	11.6	47.1
2016	11.3	11.6	12.5	12.9	48.3
2017	12.0	12.5	13.0	13.5	51.0

EARNINGS PER SHARE A

Cal-endar	Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2013	.17	.18	.19	.21	.75
2014	.16	.22	.23	.28	.89
2015	.20	.22	.28	.27	.97
2016	.19	.23	.28	.27	.97
2017	.22	.25	.30	.28	1.05

QUARTERLY DIVIDENDS PAID B

Cal-endar	Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2012	.134	.134	.134	.134	.535
2013	.138	.138	.138	.138	.552
2014	.1431	.1431	.1431	.1431	.572
2015	.1495	.1495	.1495	.1555	.604
2016	.1555	.1555	.1555		

BUSINESS: The York Water Company is the oldest investor-owned regulated water utility in the United States. It has operated continuously since 1816. As of December 31, 2015, the company's average daily availability was 35.4 million gallons and its service territory had an estimated population of 194,000. Has more than 66,000 customers. Residential customers accounted for 63% of 2015 revenues;

York Water's second-quarter financial results were little changed from the prior year. The Pennsylvania-based operator generated revenues of \$11.8 million, marginally lower than the comparable 2015 figure. There has been no movement on the rate hike front, and this, in conjunction with lower consumption, yielded a top-line contraction for the June period. In the same breath, earnings of \$0.23 a share during the period, while improving by a penny, year over year, missed our mark by \$0.03. Still, a higher tax rate continues to ail the bottom line, which more than outweighed benefits from lower operating expenses. This scenario of higher taxes and lackluster revenue growth ought to stay in place over the near term.

Therefore, we are reducing our full-year 2016 top- and bottom-line estimates accordingly. Earnings comparisons over the back half of the year ought to be flat, with revenues picking up slightly. We are trimming the latter by \$1.5 million, to \$48.5 million, representing modest growth, on an annual basis. Likewise, our 2016 earnings estimate is being lowered by \$0.03, to \$0.97 a share,

commercial and industrial (29%); other (8%). It also provides sewer billing services. Incorporated PA. York had 108 full-time employees at 12/31/15. President/CEO: Jeffrey R. Hines. Officers/directors own 1.1% of the common stock (4/16 proxy). Address: 130 East Market Street, York, Pennsylvania 17401. Telephone: (717) 845-3601. Internet: www.yorkwater.com.

in line with the prior year's profit figure. Looking further out, we think meaningful growth will likely come back into the picture in 2017.

Long-term growth will likely come from acquisitions and internal investments. York has spent about \$5 million in capex through the first half of the year. For the remainder of 2016, management has guided expenditures of approximately \$12 million. The use of these funds ought to oscillate between revamping its aging infrastructure, strengthening water treatment systems, and additional water mains if needed. Furthermore, acquisitions are likely in the cards over the pull to late decade. The company's balance sheet is in relatively good shape, and its cash reserves are abundant, when compared to normal levels.

This neutrally ranked issue lacks investment appeal at the moment. It is slated to be a market performer in the year ahead. Too, the stock is already trading inside of our 3- to 5-year Target Price Range, thereby discounting much of the growth we envision over that time frame.

Nicholas P. Patrikis October 14, 2016

(A) Diluted earnings. Next earnings report due late November.
 (B) Dividends historically paid in late-December, February, June, and September.

(C) In millions, adjusted for splits

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Company's Financial Strength	B+
Stock's Price Stability	85
Price Growth Persistence	60
Earnings Predictability	95

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WORKING NOTES						WORKING NOTES																																																					
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023																																																
						3rd																																																					
						2018	2019	2020	2021	2022	2023																																																
						Change	29.00%																																																				
						\$ 686.46	\$ 680.88	\$ 680.88	\$ 680.88	\$ 878.33	\$ 878.33																																																
								\$ -	\$ 197.45																																																		
						31,234	3,404	3,820,745	63,634	25,065	25,603																																																
						-	3,812,234	3,815,638	3,820,745	3,886,109	5,120,681																																																
						-	-	-	1,126,972	-	-																																																
						<table border="0"> <tr> <td>Prior yr</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NET PURTA</td> <td>0.1432%</td> <td></td> <td></td> <td></td> <td>66,092</td> <td>65,039</td> <td>63,916</td> <td>62,627</td> <td>62,258</td> <td>62,258</td> <td>62,257</td> </tr> <tr> <td>REV Reg Assessment</td> <td>0.5690%</td> <td></td> <td></td> <td></td> <td>25,143</td> <td>29,313</td> <td>24,190</td> <td>22,178</td> <td>23,223</td> <td>33,769</td> <td>31,608</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td style="border-top: 1px solid black;">91,235</td> <td style="border-top: 1px solid black;">94,352</td> <td style="border-top: 1px solid black;">88,106</td> <td style="border-top: 1px solid black;">84,805</td> <td style="border-top: 1px solid black;">85,481</td> <td style="border-top: 1px solid black;">96,027</td> <td style="border-top: 1px solid black;">93,865</td> </tr> </table>						Prior yr												NET PURTA	0.1432%				66,092	65,039	63,916	62,627	62,258	62,258	62,257	REV Reg Assessment	0.5690%				25,143	29,313	24,190	22,178	23,223	33,769	31,608						91,235	94,352	88,106	84,805	85,481	96,027	93,865
Prior yr																																																											
NET PURTA	0.1432%				66,092	65,039	63,916	62,627	62,258	62,258	62,257																																																
REV Reg Assessment	0.5690%				25,143	29,313	24,190	22,178	23,223	33,769	31,608																																																
					91,235	94,352	88,106	84,805	85,481	96,027	93,865																																																

Limerick Township Wastewater System's Assets

Investor Provide	53,541,921
Gross PP&E	63,480,402
Net PP&E	46,153,867
Revenues	4,418,775
EBITDA	2,487,775
EBIT	893,600
Customers	5,433
Population	19,009

G PPE	59,164,674	60,847,250	63,480,402	63,795,752
NPPE	36,017,704	36,113,701	46,153,867	45,418,048
Cust	5,323	5,416	5,433	5,508

2014 2015 2016 2017

LESS: EOS - Bank Fees, etc.	4,227	3,320	4,387	4,550	0	LESS: EOS - Ba Bank Fees, etc.
LESS: EOS - Wages & Benefits	779,619	871,223	868,519	826,012	0.15	LESS: EOS - Wi Wages & Benefits
LESS: EOS - Electric & Power	407,099	413,357	383,366	354,300	0.1	LESS: EOS - Elc Electric & Power
LESS: EOS - Lab & Testing	26,754	34,311	41,864	52,800	0.25	LESS: EOS - La Lab & Testing
LESS: EOS - Insurance	60,656	59,029	66,946	64,986	0.02% G PPE	LESS: EOS - Ins Insurance
LESS: EOS - Net Professional Services	85,863	91,188	92,130	104,604	0.5	LESS: EOS - Ne Net Professional Serv
LESS: EOS - Repairs & Maintenance	110,220	130,771	161,697	226,652	0.1	LESS: EOS - Re Repairs & Maintenance
LESS: EOS - Uniforms	2,795	2,829	3,207	3,000	0.40 per cust	LESS: EOS - Un Uniforms
LESS: EOS - Postage	9,929	10,238	12,000	13,000	0.15 per cust	LESS: EOS - Po Postage

	2024	2025	2026	2027	2028	2029	2030
GROSS Property, plant and equipment	68,948,555	69,974,165	71,015,031	72,071,380	73,143,442	74,231,450	75,335,642
Accumulated Depreciation	25,473,877	26,499,940	27,541,266	28,598,082	29,670,618	30,759,107	31,863,788
NET PPE	43,474,678	43,474,225	43,473,765	43,473,298	43,472,824	43,472,343	43,471,854

Total Debt
Net Equity
Investor Provided Capital

1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
1,188,915	1,206,600	1,224,548	1,242,763	1,261,249	1,280,010	1,299,050
1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%
0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
10,344	10,497	10,654	10,812	10,973	11,136	11,302
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
178,337	180,990	183,682	186,414	189,187	192,002	194,858
3,103	3,149	3,196	3,244	3,292	3,341	3,391
1,182,121	1,199,705	1,217,550	1,235,662	1,254,042	1,272,696	1,291,627
1,189,362	1,207,053	1,225,008	1,243,230	1,261,723	1,280,491	1,299,539

443,992.00	448,818.00	453,644.00	458,470.00	463,296.00	468,122.00	472,948.00
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Sewer Rental Charges
EDUs

9312	9405	9499	9594	9690	9787	9885
92	93	94	95	96	97	98

1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
367,189,292	370,861,185	374,569,797	378,315,495	382,098,650	385,919,636	389,778,833
5,977	6,037	6,097	6,158	6,219	6,282	6,344
5,381,882	5,435,701	5,490,058	5,712,970	5,770,100	5,827,801	6,064,427
103.03%						
900.47	900.47	900.47	927.75	927.75	927.75	955.86
61,436	61,436	61,436	61,436	61,436	61,436	61,436
577.95	577.96	577.96	595.47	595.47	595.46	613.50
39,432	39,432	39,433	39,433	39,432	39,432	39,431
5,197,747	5,408,791	5,462,880	5,517,508	5,741,535	5,798,951	5,856,940

2024 2025 2026 2027 2028 2029 2030

2024	2025	2026	2027	2028	2029	2030
3.03%			3.03%			3.03%
\$ 904.95	\$ 904.95	\$ 904.95	\$ 932.37	\$ 932.37	\$ 932.37	\$ 960.62
\$ 26.61	\$ -	\$ -	\$ 27.42	\$ -	\$ -	\$ 28.25
25,859	26,909	27,179	27,450	28,565	28,851	29,139
5,223,607	5,435,701	5,490,058	5,544,958	5,770,100	5,827,801	5,886,079
158,275	-	-	168,012	-	-	178,348

62,256	62,256	62,255	62,254	62,254	62,253	62,252
31,927	33,149	33,483	33,820	35,115	35,468	35,824
94,183	95,405	95,738	96,074	97,369	97,721	98,076

LESS: EOS - Bank Fees, etc.	eliminated	100%	0
LESS: EOS - Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Electric & Power	10% savings	10%	0.1
LESS: EOS - Lab & Testing	25% savings	25%	0.25
LESS: EOS - Insurance	% of G PPE	0.02%	0.02% G PPE
LESS: EOS - Net Professional Services	50% savings	50%	0.5
LESS: EOS - Repairs & Maintenance	10% savings	10%	0.1
LESS: EOS - Uniforms	\$ per CUST	\$0.40	0.40 per cust
LESS: EOS - Postage	\$ per CUST	\$0.15	0.15 per cust

(Company Name)

402. OPERATING REVENUES SUPPORTING SCHEDULE - CUSTOMER DATA

Customers should be reported on the basis of number of meters, (except where multiple customers have one meter) plus number of flat rate accounts. Where separate meter readings are added for billing purposes, one customer shall be counted for each group of meters so added.

Line No.	Customer Classes (a)	Customers End of Current Year (b)	Customers End of Previous Year (c)	Increase/ (Decrease) (d)
1	Unmetered Charges	XXX	XXX	XXX
2	Residential	5,312	5,509	(197)
3	Commercial	474	471	3
4	Industrial			
5	Public Authorities			
6	Multiple Family Dwellings*			
7	Availability			
8	Other			
9				
10	Total Unmetered Charges	5,786	5,980	(194)
11				
12	Measured Sales	XXX	XXX	XXX
13	Residential	12,935	12,845	90
14	Commercial	1,024	806	218
15	Industrial	1	1	-
16	Public Authority	38	37	1
17	Multiple Family Dwellings*			
18	Other			
19	Other Systems			
20	Interdepartmental			
21	Other Systems-Interdepartmental			
22				
23	Total Measured Sales	13,998	13,689	309

* Use number of Individual Dwelling Units

(Company Name)

**200. COMPARATIVE BALANCE SHEET
ASSETS AND OTHER DEBITS**

Balances at Beginning of Year must be consistent with balances at end of previous year

Line No.	Account Number and Title (a)	Schedule No. (b)	Balance Beginning of Year (c)	Balance End of Year (d)	Increase/Decrease (e)
1	UTILITY PLANT		XXX	XXX	XXX
2	101.0 Utility Plant in Service	201	83,707,285	101,860,179	18,152,894
3	102.0 Utility Plant Leased To Others	202			
4	103.0 Property Held for Future Use	203	3,213,292	3,213,292	-
5	104.0 Utility Plant Purchased or Sold		3,896,213	168,930	(3,727,283)
6	105.0 Construction Work in Progress	204	5,474,575	2,559,967	(2,914,608)
7	106.0 Completed Construction Not Classified				
8	Total Utility Plant		96,291,365	107,802,368	11,511,003
9	ACCUMULATED DEPRECIATION		XXX	XXX	XXX
10	108.1 Utility Plant in Service	205	23,507,841	27,886,000	4,378,159
11	108.2 Utility Plant Leased to Others	205			
12	108.3 Property Held for Future Use	205			
13	Total Accumulated Depreciation		23,507,841	27,886,000	4,378,159
14	ACCUMULATED AMORTIZATION		XXX	XXX	XXX
15	110.1 Utility Plant In Service	201			
16	110.2 Utility Plant Leased to Others	202			
17	Total Accumulated Amortization				
18	UTILITY PLANT ADJUSTMENTS		XXX	XXX	XXX
19	114.0 Utility Plant Acquisition Adjustments	206	(3,947,590)	(8,152,896)	(4,205,306)
20	115.0 Accumulated Amortization of Utility Plant Acquisition Adjustments		1,388,294	1,714,452	326,158
21	116.0 Other Utility Plant Adjustments				
22	Total Utility Plant Adjustments		(2,559,296)	(6,438,444)	(3,879,148)
23	117.0 Pending Reclass of Utility Plant	205			
24	TOTAL NET UTILITY PLANT		70,224,228	73,477,924	3,253,696
25	OTHER PROPERTY AND INVESTMENTS		XXX	XXX	XXX
26	OTHER PROPERTY		XXX	XXX	XXX
27	121.0 Non-Utility Property				
28	122.0 Accumulated Depreciation & Amortization of Non-Utility Property				
29	Total Other Property				
30	INVESTMENTS		XXX	XXX	XXX
31	123.0 Investments in Affiliated Companies	210			
32	124.0 Utility Investments	210			
33	125.0 Other Investments	210			
34	126.0 Sinking Funds	210			
35	127.0 Other Special Funds	210			
36	Total Investments				
37	TOTAL OTHER PROPERTY AND INVESTMENTS				

407. WASTEWATER OPERATION AND MAINTENANCE EXPENSE ACCOUNTS

Line No	Account Number and Title (a)	Schedule No. (b)	Amount of Operating Expenses		
			Current Year (c)	Previous Year (d)	Increase (Decrease) (e)
1	Salaries and Wages		XXX	XXX	XXX
2	701.0 Employees	409	897,185	1,016,446	(119,261)
3	703.0 Officers, Directors and Majority Stockholders	409	42,329	42,250	79
4	Total Salaries and Wages		939,514	1,058,696	(119,182)
5	704.0 Employee Pensions and Benefits	409-A	556,003	632,632	(76,629)
6	710.0 Purchased Wastewater Treatment		565,253	564,509	744
7	711.0 Sludge Removal Expense		939,890	1,076,148	(136,258)
8	715.0 Purchased Power		1,010,357	1,018,466	(8,109)
9	716.0 Fuel for Power Production		5,140	12,685	(7,545)
10	718.0 Chemicals		475,538	406,301	69,237
11	720.0 Materials and Supplies		92,553	83,496	9,057
12	Contractual Services		XXX	XXX	XXX
13	731.0 Engineering	411-A			
14	732.0 Accounting	411-A	15,921	16,451	(530)
15	733.0 Legal	411-A	-	473	(473)
16	734.0 Management Fees	411-B	628,900	731,678	(102,777)
17	735.0 Testing	411-B	168,448	160,532	7,916
18	736.0 Other - Maintenance	411-B	1,393,193	1,342,330	50,862
19	Total Contractual Services		2,206,463	2,251,464	(45,002)
20	741.0 Rental of Building/Real Property		94,980	96,545	(1,566)
21	742.0 Rental of Equipment				
22	750.0 Transportation Expenses		51,710	74,099	(22,388)
23	Insurance		XXX	XXX	XXX
24	756.0 Vehicle				
25	757.0 General Liability		48,518	36,036	12,482
26	758.0 Workman's Compensation		956	852	104
27	759.0 Other		(23,302)	26,620	(49,922)
28	Total Insurance		26,172	63,508	(37,336)
29	760.0 Advertising Expense - Other than Conservation	412	1,300	1,932	(632)
30	766.0 Regulatory Commission Expenses-Amort. of Rate Case Expense				
31	767.0 Regulatory Commission Expenses-Other				
32	770.0 Bad Debt Expense		143,136	125,271	17,865
33	Miscellaneous Expenses		XXX	XXX	XXX
34	775.0 Miscellaneous Other	413			
35	775.1 Membership Dues		1,300	4,540	(3,240)
36	775.2 Registration Fees for Conventions & Meetings of Industry	413-A			
37	775.3 Communication Services	413-B	106,512	93,750	12,762
38	775.4 Trustee Fees and Bank Charges				
39	775.5 Stockholders Expenses	413-C			
40	775.6 Office Expenses and Utilities	413-D	74,224	37,943	36,281
41	775.7 Uniforms		4,304	8,783	(4,480)
42	775.8 Director's Fees and Expenses	413-E			
43	775.9 Mailing		815	1,027	(211)
44	775.10 Subscriptions	413-F	13,726	17,694	(3,968)
45	775.11 Write off of expenditures for preliminary surveys, plans, investigations etc., included in Account 183.0 - Preliminary Survey and Investigation Charges, relative to abandoned projects.				
46					
47					
48	775.12 Travel	416	7,718	6,385	1,333
49	775.13 Education				
50	775.14 Charitable Contributions	413-G			
51	Total Miscellaneous Expenses		208,598	170,122	38,477
52	Total Wastewater Operation and Maintenance Expense Accounts		7,316,607	7,635,874	(319,266)

BUCKS COUNTY WATER AND SEWER AUTHORITY
STATEMENTS OF NET POSITION
DECEMBER 31, 2015 AND 2014

<u>ASSETS</u>	<u>2015</u>	<u>2014</u>
Current Assets		
Cash and Cash Equivalents	\$ 5,731,089	\$ 7,741,035
Investments	17,814,990	12,213,129
Accounts Receivable, Net of Allowance for Doubtful Accounts	10,570,311	10,346,130
Unbilled Revenue	7,935,326	7,836,048
Prepaid Expenses	<u>260,954</u>	<u>475,678</u>
Total Current Assets	<u>42,312,670</u>	<u>38,612,020</u>
Non-Current Assets		
Restricted Assets		
Cash and Cash Equivalents	3,161,760	2,203,150
Investments	135,009,814	121,172,038
Interest Receivable	<u>64,688</u>	<u>83,517</u>
Total Restricted Assets	<u>138,236,262</u>	<u>123,458,705</u>
Capital Assets		
Land, Rights-of-Way and CIP	74,796,483	73,591,020
Other Capital Assets, Net of Accumulated Depreciation	<u>335,450,721</u>	<u>318,224,639</u>
Total Capital Assets, Net	<u>410,247,204</u>	<u>391,815,659</u>
Total Non-Current Assets	<u>548,483,466</u>	<u>515,274,364</u>
Total Assets	<u>590,796,136</u>	<u>553,886,384</u>
Deferred Outflows of Resources		
Deferred Amount from Debt Refundings	3,396,951	2,961,278
Pension: Difference between expected and Actual Experience	173,432	-
Pension: Difference between projected and actual earnings on investments	181,362	-
Pension: Contributions made subsequent to measurement date	<u>1,714,497</u>	<u>-</u>
Total Deferred Outflows of Resources	<u>5,466,242</u>	<u>2,961,278</u>
<u>LIABILITIES AND NET POSITION</u>		
Current Liabilities		
Accounts Payable and Accrued Expenses	4,231,827	5,848,481
Current Portion of Bonds Payable	17,535,000	18,465,000
Interest Payable	<u>1,073,303</u>	<u>1,058,854</u>
Total Current Liabilities	<u>22,840,130</u>	<u>25,372,335</u>
Non-Current Liabilities		
Customer and Developer Deposits	3,161,756	2,203,146
Bonds Payable, Net of Unamortized Bond Discount and Premium	315,287,483	289,693,532
Net Pension Liability	<u>5,114,435</u>	<u>-</u>
Total Non-Current Liabilities	<u>323,563,674</u>	<u>291,896,678</u>
Total Liabilities	<u>346,403,804</u>	<u>317,269,013</u>
Deferred Inflows of Resources		
Proceeds from sale of future revenues	<u>5,206,301</u>	<u>5,400,135</u>
Net Position		
Net Investment in Capital Assets	171,371,418	172,428,232
Restricted for Capital Activity	20,752,536	17,640,885
Restricted for Debt Service	34,304,360	31,140,834
Unrestricted	<u>18,223,959</u>	<u>12,968,563</u>
Total Net Position	<u>\$ 244,652,273</u>	<u>\$ 234,178,514</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, 2015 AND 2014

	<u>2015</u>	<u>2014</u>
Operating Revenues		
Retail Sewer Service	\$ 40,074,901	\$ 39,741,582
Wholesale Sewer Service	15,357,443	17,054,415
Retail Water Service	8,704,536	8,563,187
Wholesale Water Service	11,633,096	10,933,242
Improvement and Tapping Fees	320,175	102,350
Other Revenues	<u>4,144,208</u>	<u>4,668,861</u>
Total Operating Revenues	<u>80,234,359</u>	<u>81,063,637</u>
Expenses		
Operating Expenses		
Sewage Treatment and Water Procurement		
Sewage Treatment	13,646,982	14,487,654
Water Procurement	<u>8,073,320</u>	<u>8,737,116</u>
Total Sewage Treatment and Water Procurement	<u>21,720,302</u>	<u>23,224,770</u>
Plant Operations		
Payroll and Related Costs	1,633,434	1,483,282
Repairs and Maintenance	984,929	1,037,192
Electricity	386,706	480,754
Water and Sewage Testing	<u>118,633</u>	<u>82,788</u>
Total Plant Operations	<u>3,123,702</u>	<u>3,084,016</u>
Collection, Transmission and Distribution Service		
Payroll and Related Costs	8,072,542	7,378,571
Repairs and Maintenance	1,540,762	1,331,421
Electricity	995,081	1,190,915
Other Related Costs	<u>257,882</u>	<u>307,579</u>
Total Collection, Transmission and Distribution Service	<u>10,866,267</u>	<u>10,208,486</u>
Total Operating Expenses	<u>35,710,271</u>	<u>36,517,272</u>
General and Administrative Expenses		
Payroll and Related Costs	3,444,298	3,550,569
Professional Fees	1,573,043	1,609,101
Insurance	518,425	498,135
Bad Debt	-	2,000,000
Other	<u>2,781,201</u>	<u>1,676,431</u>
Total General and Administrative Expense	<u>8,316,967</u>	<u>9,334,236</u>
Total Expenses	<u>44,027,238</u>	<u>45,851,508</u>
Income From Operations Before Depreciation	36,207,121	35,212,129
Depreciation	<u>(15,105,344)</u>	<u>(12,292,960)</u>
Operating Income	<u>21,101,777</u>	<u>22,919,169</u>
Non-Operating Revenue (Expense)		
Interest Expense,		
Net of Amounts Capitalized	(10,312,121)	(5,992,119)
Investment Income	903,993	1,166,033
Improvement and Tapping Fees	3,033,482	1,079,378
Amortization	<u>(1,174,018)</u>	<u>(326,223)</u>
Total Non-Operating Expense	<u>(7,548,664)</u>	<u>(4,072,931)</u>
Increase In Net Position, Before Contributed Capital	13,553,113	18,846,238
Contributed Capital	<u>192,833</u>	<u>192,833</u>
Increase in Net Position	13,745,946	19,039,071
Net Position - Beginning of Year	234,178,514	215,139,443
Cumulative Change	<u>(3,272,187)</u>	<u>-</u>
Net Position - Beginning of Year, Restated	<u>230,906,327</u>	<u>215,139,443</u>
Net Position - End of Year	<u>\$ 244,652,273</u>	<u>\$ 234,178,514</u>

See accompanying notes to the financial statements.

	Aqua PA - Sewer		PA-American - Sewer		
	<u>2014</u>	<u>2015</u>	<u>2014</u>	<u>2015</u>	
GROSS Property, plant and equipment	96,291,365	107,802,368	204,501,210	237,900,998	
Insurance	63,508	23,472	34,902	32,860	
Insurance/ G PPE	0.07%	0.02%	0.02%	0.01%	0.02%
Uniforms	8,783	4,304	7,956	6,817	
Mailings	1,027	815	4,167	4,997	
Customers	19,669	19,784	17,084	21,212	
<u>Per Customer</u>					
Uniforms	\$0.45	\$0.22	\$0.47	\$0.32	\$0.38
Mailings	\$0.05	\$0.04	\$0.24	\$0.24	\$0.14

	DELCORA		BCWSA		
	<u>2014</u>	<u>2015</u>	<u>2014</u>	<u>2015</u>	
NET Property, plant and equipment	163,200,336	182,422,188	391,815,659	410,247,204	
Operating Income	7,235,196	9,093,800	22,919,169	21,101,777	
ROR/N PPE	4.43%	4.99%	5.85%	5.14%	5.1%

**DELAWARE COUNTY REGIONAL WATER
QUALITY CONTROL AUTHORITY**
Statements of Net Position
December 31, 2015 and 2014

<u>ASSETS</u>	<u>2015</u>	<u>2014</u>	<u>LIABILITIES</u>	<u>2015</u>	<u>2014</u>
Current:			Current:		
Cash and Cash Equivalents	\$ 3,923,402	\$ 8,240,136	Accounts Payable and Accrued Expenses	\$ 4,314,291	\$ 4,749,366
Certificates of Deposit with Original Maturities Beyond Three Months	2,076,997	2,062,305	Payable to the City of Philadelphia	1,313,145	703,371
Investments	95,382,285	65,950,422	Current Portion of Long-Term Debt	3,569,381	5,073,632
Receivables:			Accrued Bond Interest Payable	823,158	577,547
Western Region:			Advances on Services:		
Residential, Net of Allowance for Doubtful Accounts			Central Delaware County Authority	9,098	130,165
of \$247,401 and \$150,819 in 2015 and 2014, Respectively	822,244	753,235	Muckinipales Authority	0	56,880
Municipal	1,325,712	1,581,531	Darby Creek Joint Authority	1,056,007	941,793
Major Industries	591,702	787,705	Municipal	379,282	77,073
Permit Industries	457,168	284,589	Major Industries	344,854	346,977
Eastern Region:			Permit Industries	91,428	98,152
Muckinipates Authority	89,169	0	Residential	27,382	20,002
Note Receivable, Current Portion	28,124	26,689	TOTAL CURRENT LIABILITIES	<u>11,928,026</u>	<u>12,774,958</u>
Other Receivables	1,231,298	1,034,229			
Prepaid Expenses	475,700	634,717	Noncurrent:		
TOTAL CURRENT ASSETS	<u>106,403,801</u>	<u>81,355,558</u>	Long-Term Debt	113,036,859	77,755,316
			Payable to the City of Philadelphia (2015 additions of \$2,556,436)	8,556,436	6,000,000
Noncurrent:			Net Pension Liability	5,530,165	3,912,118
Capital Assets, Net of Accumulated Depreciation	182,422,188	163,200,336	Deferred Revenue - Long-Term Control Plan	1,422,000	0
Note Receivable, Net of Current Portion	47,655	75,779	TOTAL NONCURRENT LIABILITIES	<u>128,545,460</u>	<u>87,667,434</u>
Restricted Investments	7,494,053	7,948,623	TOTAL LIABILITIES	<u>140,473,486</u>	<u>100,442,392</u>
TOTAL NONCURRENT ASSETS	<u>189,963,896</u>	<u>171,224,738</u>			
			<u>NET POSITION</u>		
<u>DEFERRED OUTFLOWS OF RESOURCES</u>			Net Investment in Capital Assets	101,699,396	93,177,543
Deferred Outflows of Resources - Pension Plan	4,668,185	0	Restricted for Debt Service	6,677,573	7,383,735
			Unrestricted	52,185,427	51,576,626
			TOTAL NET POSITION	<u>160,562,396</u>	<u>152,137,904</u>
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	<u>\$ 301,035,882</u>	<u>\$ 252,580,296</u>	TOTAL LIABILITIES AND NET POSITION	<u>\$ 301,035,882</u>	<u>\$ 252,580,296</u>

The accompanying notes are an integral part of these statements.

DELAWARE COUNTY REGIONAL WATER
QUALITY CONTROL AUTHORITY
Statements of Revenues, Expenses and Changes in Net Position
For the Years Ended December 31, 2015 and 2014

	2015	2014
Operating Revenues:		
Western Region:		
Major Industries	\$ 6,609,628	\$ 6,751,251
Residential	5,622,353	5,569,475
Municipal	7,759,954	4,043,630
Permit Industries	1,579,289	1,474,611
TOTAL WESTERN REGION	21,571,224	17,838,967
Eastern Region:		
Darby Creek Joint Authority	15,555,731	14,907,180
Central Delaware County Authority	8,096,008	7,603,060
Muckinipates Authority	3,705,057	3,403,140
TOTAL EASTERN REGION	27,356,796	25,913,380
Sludge Disposal and Processing	4,377,766	3,707,977
TOTAL OPERATING REVENUES	53,305,786	47,460,324
Operating Expenses, Including Depreciation of \$5,422,490 in 2015 and \$5,088,028 in 2014	44,211,986	40,225,128
OPERATING INCOME	9,093,800	7,235,196
Nonoperating Revenues (Expenses):		
Interest Income	362,188	288,783
Interest Expense	(2,329,531)	(1,986,942)
EPA - DEP Civil Penalty	(1,376,638)	0
Debt Issue Costs	(369,233)	0
Other Income	651,715	872,215
TOTAL NONOPERATING EXPENSE	(3,061,499)	(825,944)
INCOME BEFORE CAPITAL CONTRIBUTIONS	6,032,301	6,409,252
Capital Contributions	2,392,191	0
CHANGE IN NET POSITION	8,424,492	6,409,252
Net Position - Beginning	152,137,904	145,728,652
NET POSITION - ENDING	\$ 160,562,396	\$ 152,137,904

The accompanying notes are an integral part of these statements.

402. OPERATING REVENUES SUPPORTING SCHEDULE - CUSTOMER DATA

Customers should be reported on the basis of number of meters, (except where multiple customers have one meter) plus number of flat rate accounts. Where separate meter readings are added for billing purposes, one customer shall be counted for each group of meters so added.

Line No.	Customer Classes (a)	Customers End of Current Year (b)	Customers End of Previous Year (c)	Increase/ (Decrease) (d)
1	Unmetered Charges	XXX	XXX	XXX
2	Residential	4,055	423	3,632
3	Commercial	95	17	78
4	Industrial	1	1	-
5	Public Authorities	4	3	1
6	Multiple Family Dwellings*			
7	Availability			
8	Other			
9				
10	Total Unmetered Charges	4,155	444	3,711
11				
12	Measured Sales	XXX	XXX	XXX
13	Residential	15,983	15,719	264
14	Commercial	1,004	867	137
15	Industrial	6	6	-
16	Public Authority	64	48	16
17	Multiple Family Dwellings*			
18	Other	4	4	-
19	Other Systems			
20	Interdepartmental			
21	Other Systems-Interdepartmental			
22				
23	Total Measured Sales	17,061	16,644	417

* Use number of Individual Dwelling Units

(Company Name)

**200. COMPARATIVE BALANCE SHEET
ASSETS AND OTHER DEBITS**

Balances at Beginning of Year must be consistent with balances at end of previous year

Line No.	Account Number and Title (a)	Schedule No. (b)	Balance Beginning of Year (c)	Balance End of Year (d)	Increase/Decrease (e)
1	UTILITY PLANT		xxx	xxx	xxx
2	101.0 Utility Plant in Service	201	200,378,331	217,203,110	16,824,779
3	102.0 Utility Plant Leased To Others	202			
4	103.0 Property Held for Future Use	203			
5	104.0 Utility Plant Purchased or Sold		6,049	16,606,468	16,600,419
6	105.0 Construction Work in Progress	204	4,116,830	4,091,420	(25,410)
7	106.0 Completed Construction Not Classified				
8	Total Utility Plant		204,501,210	237,900,998	33,399,788
9	ACCUMULATED DEPRECIATION		xxx	xxx	xxx
10	108.1 Utility Plant in Service	205	34,323,657	40,701,795	6,378,138
11	108.2 Utility Plant Leased to Others	205			
12	108.3 Property Held for Future Use	205			
13	Total Accumulated Depreciation		34,323,657	40,701,795	6,378,138
14	ACCUMULATED AMORTIZATION		xxx	xxx	xxx
15	110.1 Utility Plant In Service	201			
16	110.2 Utility Plant Leased to Others	202			
17	Total Accumulated Amortization				
18	UTILITY PLANT ADJUSTMENTS		xxx	xxx	xxx
19	114.0 Utility Plant Acquisition Adjustments	206	(6,636,205)	(6,636,205)	
20	115.0 Accumulated Amortization of Utility Plant Acquisition Adjustments		5,137,591	5,387,360	249,769
21	116.0 Other Utility Plant Adjustments				
22	Total Utility Plant Adjustments		(1,498,614)	(1,248,845)	249,769
23	117.0 Pending Reclass of Utility Plant	205			
24	TOTAL NET UTILITY PLANT		168,678,939	195,950,358	27,271,419

25	OTHER PROPERTY AND INVESTMENTS		xxx	xxx	xxx
26	OTHER PROPERTY		xxx	xxx	xxx
27	121.0 Non-Utility Property				
28	122.0 Accumulated Depreciation & Amortization of Non-Utility Property				
29	Total Other Property				
30	INVESTMENTS		xxx	xxx	xxx
31	123.0 Investments in Affiliated Companies	210		220,723	220,723
32	124.0 Utility Investments	210			
33	125.0 Other Investments	210			
34	126.0 Sinking Funds	210			
35	127.0 Other Special Funds	210			
36	Total Investments			220,723	220,723
37	TOTAL OTHER PROPERTY AND INVESTMENTS			220,723	220,723

407. WASTEWATER OPERATION AND MAINTENANCE EXPENSE ACCOUNTS

Line No.	Account Number and Title (a)	Schedule No. (b)	Amount of Operating Expenses		
			Current Year (c)	Previous Year (d)	Increase (Decrease) (e)
1	Salaries and Wages		XXX	XXX	XXX
2	701.0 Employees	409	1,517,257	1,558,069	(40,812)
3	703.0 Officers, Directors and Majority Stockholders	409			-
4	Total Salaries and Wages		1,517,257	1,558,069	(40,812)
5	704.0 Employee Pensions and Benefits	409-A	594,210	587,209	7,001
6	710.0 Purchased Wastewater Treatment				-
7	711.0 Sludge Removal Expense				-
8	715.0 Purchased Power		728,453	657,069	71,384
9	716.0 Fuel for Power Production		6,707	1,872	4,835
10	718.0 Chemicals		428,304	377,895	50,409
11	720.0 Materials and Supplies				-
12	Contractual Services		XXX	XXX	XXX
13	731.0 Engineering	411-A	2,031	984	1,047
14	732.0 Accounting	411-A			-
15	733.0 Legal	411-A			-
16	734.0 Management Fees	411-B			-
17	735.0 Testing	411-B	72,142	65,804	6,338
18	736.0 Other - Maintenance	411-B	1,059,744	940,714	119,030
19	Total Contractual Services		1,133,917	1,007,502	126,415
20	741.0 Rental of Building/Real Property		1,733	8,822	(7,089)
21	742.0 Rental of Equipment		2,025	941	1,084
22	750.0 Transportation Expenses		133,647	138,597	(4,950)
23	Insurance		XXX	XXX	XXX
24	756.0 Vehicle				-
25	757.0 General Liability				-
26	758.0 Workman's Compensation		32,860	34,902	(2,042)
27	759.0 Other				-
28	Total Insurance		32,860	34,902	(2,042)
29	760.0 Advertising Expense - Other than Conservation	412			-
30	766.0 Regulatory Commission Expenses-Amort. of Rate Case Expense		74,513	74,513	-
31	767.0 Regulatory Commission Expenses-Other				-
32	770.0 Bad Debt Expense				-
33	Miscellaneous Expenses		XXX	XXX	XXX
34	775.0 Miscellaneous Other	413	338,061	300,823	37,238
35	775.1 Membership Dues		525	2,458	(1,933)
36	775.2 Registration Fees for Conventions & Meetings of Industry	413-A			-
37	775.3 Communication Services	413-B	69,955	74,531	(4,576)
38	775.4 Trustee Fees and Bank Charges				-
39	775.5 Stockholders Expenses	413-C			-
40	775.6 Office Expenses and Utilities	413-D	275,318	154,691	120,627
41	775.7 Uniforms		6,817	7,956	(1,139)
42	775.8 Director's Fees and Expenses	413-E			-
43	775.9 Mailing		4,997	4,167	830
44	775.10 Subscriptions	413-F			-
45	775.11 Write off of expenditures for preliminary surveys, plans,				-
46	investigations etc., included in Account 183.0 - Preliminary Survey				-
47	and Investigation Charges, relative to abandoned projects.				-
48	775.12 Travel	416			-
49	775.13 Education				-
50	775.14 Charitable Contributions	413-G			-
51	Total Miscellaneous Expenses		695,673	544,626	151,047
52	Total Wastewater Operation and Maintenance Expense Accounts		5,349,299	4,992,017	357,282

**MERGENT* MUNICIPAL & GOVERNMENT
MOODY'S MUNICIPAL BOND AVERAGES**

GO	GO	Muni	Aa	A
	weekly	1/5/2017	3.61	3.98
			3.61	3.98

Bond Buyer Indexes

	DATE	20-BOND GO INDEX	REVENUE BOND INDEX
weekly	12/29/2016	3.78	3.90
	1/5/2017	3.78	3.90
		3.78	3.90

FED H.15

	DATE	20-yr T- bond	30-yr T-bond
Spot	12/30/2016	2.79	3.06

FED H.15

	DATE	AAA Corp	BAA CORP
Spot	12/30/2016	3.98	4.73
	1/5/2017	3.85	4.62

Moody's Daily Long-term Corporate Bond Yield Averages

	1/5/2017	Utilities	Industrial	Corporate
Spot	Aaa	NA	3.85	3.85
	Aa	3.92	3.93	3.93
	A	4.1	4.11	4.11
	Baa	4.6	4.64	4.62
	Avg	4.21	4.13	4.17

Corporate					
	Aaa	Baa	Aaa	Baa	
	3.85	4.62	3.98	4.73	
Utilities					
Aa	0.07	-0.7	4.05	4.03	4.04
A	0.25	-0.52	4.23	4.21	4.22
Baa	0.75	-0.02	4.73	4.71	4.72
GO Muni Aa A					
			3.61	3.98	
REVENUE					
	20-BOND GO INDEX	BOND INDEX			
	3.78	3.90	0.12	0.12	
20-yr T-bond 30-yr T-bond					
	2.79	3.06	0.27	0.27	
30-Yr Rev E	30-Yr Rev Bond Est.		4.00	4.37	4.37
2015 Lt Debt		4			4.22
Prf Stk		5.4			135%
		135%			5.7

12/31/2016	
A-Rated Rev Bonds	4.37
A-Rated PU Bonds	4.22
A-Rated PU Pref Stk	5.70
30-yr T-bond	3.06

Company Name	AMERICAN ST	AMERICAN WA	QUA AMERI	ARTESIAN RE	CALIFORNIA \	CONNECTICU	MIDDLESEX V	SJW CORP	YORK WATER CO	Company Name	LIMERICK
2010 Sales-Net[c10]	398.942	2710.677	726.072	64.885	460.399	67.15	102.735	215.638	39.005	2011 Sales-Net[c	3571770
2011 Sales-Net[c11]	419.274	2666.236	711.956	65.07	501.814	70.249	102.069	238.955	40.629	2012 Sales-Net[c	3667260
2012 Sales-Net[c12]	466.908	2876.889	757.76	70.563	559.966	84.65	110.379	261.547	41.447	2013 Sales-Net[c	3810008
2013 Sales-Net[c13]	472.077	2901.858	768.643	69.073	584.103	92.337	114.846	276.869	42.383	2014 Sales-Net[c	4951845
2014 Sales-Net[c14]	465.791	3011.328	779.903	72.465	597.499	94.853	117.139	319.668	45.9	2015 Sales-Net[c	3899063
2015 Sales-Net[c15]	458.641	3159	814.204	77.024	588.368	96.838	126.025	305.082	47.089	2016 Sales-Net[c15]	
2010 Cash & Short Term Investment	4.197	107.178	5.934	0.179	42.277	0.952	2.453	1.73	1.327	2011 Cash & Shc	3820324
2011 Cash & Short Term Investment	1.315	46.645	8.204	0.311	27.203	1.012	3.106	26.734	4.006	2012 Cash & Shc	4702884
2012 Cash & Short Term Investment	23.486	54.189	5.521	0.617	38.79	13.15	3.025	2.522	4.012	2013 Cash & Shc	4675895
2013 Cash & Short Term Investment	38.226	55.469	5.058	0.422	27.506	18.371	4.834	2.299	7.66	2014 Cash & Shc	5939003
2014 Cash & Short Term Investment	75.988	36.939	4.138	0.243	19.587	2.475	2.673	2.399	1.495	2015 Cash & Shc	6454108
2015 Cash & Short Term Investment	4.364	66	3.229	0.209	8.837	0.731	3.469	5.239	2.879	2016 Cash & Short Term Investment	
2010 Current Assets-Total[c10]	204.984	534.307	145.419	14.033	126.21	20.428	22.765	38.027	8.793	2011 Current As:	4691788
2011 Current Assets-Total[c11]	165.601	1397.659	320.453	13.25	113.888	18.881	22.873	68.915	11.389	2012 Current As:	5656504
2012 Current Assets-Total[c12]	184.033	499.447	260.894	13.48	146.564	36.362	24.613	42.911	11.645	2013 Current As:	5917379
2013 Current Assets-Total[c13]	191.617	550.39	171.669	13.254	139.49	46.896	25.838	39.652	15.232	2014 Current As:	6872211
2014 Current Assets-Total[c14]	209.451	661.369	152.522	16.648	154.124	36.168	22.864	68.093	11.233	2015 Current As:	7443055
2015 Current Assets-Total[c15]	132.697	657	128.37	14.444	127.578	27.029	24.41	73.376	11.792	2016 Current Assets-Total[c15]	
2010 Debt in Current Liabilities[c10]	61.276	274.459	118.081	31.356	26.13	26.342	21.432	5.133	0.041	2011 Debt in Cur	824000
2011 Debt in Current Liabilities[c11]	2.291	543.908	188.2	13.823	53.673	21.372	28.819	0.838	0.042	2012 Debt in Cur	858000
2012 Debt in Current Liabilities[c12]	3.328	385.904	125.421	12.578	136.258	2.964	39.08	20.692	0.042	2013 Debt in Cur	900000
2013 Debt in Current Liabilities[c13]	6.298	644.481	123.028	12.21	54.723	4.121	33.836	22.954	0.043	2014 Debt in Cur	550000
2014 Debt in Current Liabilities[c14]	0.292	511.091	77.013	19.877	85.722	4.448	24.91	13.784	0.043	2015 Debt in Cur	495000
2015 Debt in Current Liabilities[c15]	28.312	682	52.314	12.322	40.215	18.927	8.739	38.091	0.044	2016 Debt in Current Liabilities[c15]	
2010 Current Liabilities-Total[c10]	178.842	774.506	223.715	41.885	107.348	35.102	40.74	29.155	5.331	2011 Current Lia	942396
2011 Current Liabilities-Total[c11]	104.37	1489.105	425.673	24.66	151.875	30.428	46.687	28.288	5.283	2012 Current Lia	1473433
2012 Current Liabilities-Total[c12]	93.697	994.832	274.164	24.939	243.067	15.877	55.932	49.107	5.474	2013 Current Lia	1002861
2013 Current Liabilities-Total[c13]	100.906	1235.533	266.91	25.563	166.584	22.729	52.678	59.195	7.843	2014 Current Lia	653778
2014 Current Liabilities-Total[c14]	99.29	1240.998	225.335	30.192	217.706	23.622	43.872	44.694	5.93	2015 Current Lia	639016
2015 Current Liabilities-Total[c15]	123.507	1533	193.199	23.218	148.455	36.939	28.319	79.623	6.197	2016 Current Liabilities-Total[c15]	
2010 noncash wkcap	83.221	-72.918	33.85101	3.325003	2.714998	10.716	1.003997	12.275	2.176	2011 noncash w/	753068
2011 noncash wkcap	62.207	405.8171	74.776	2.102	-11.517	8.813001	1.898999	14.731	2.142	2012 noncash w/	338187
2012 noncash wkcap	70.17801	-163.67	106.63	0.502	0.964989	10.299	4.736003	11.974	2.201	2013 noncash w/	1138623
2013 noncash wkcap	58.783	-96.1309	22.729	-0.521	0.123005	9.916999	2.161996	1.112001	-0.228	2014 noncash w/	829430
2014 noncash wkcap	34.465	-105.477	0.061997	6.090002	2.552999	14.519	1.228998	34.784	3.851	2015 noncash w/	844931
2015 noncash wkcap	33.138	-260	-15.744	3.338999	10.501	8.286	1.361	26.605	2.76	2016 noncash w/	0
2011 Change Non cashWrk Cap	-21.014	478.7351	40.92498	-1.223	-14.232	-1.903	0.895002	2.456002	-0.034	2012 Change No	-414881
2012 Change Non cashWrk Cap	7.971011	-569.487	31.85401	-1.6	12.48199	1.485999	2.837004	-2.757	0.059	2013 Change No	800436
2013 Change Non cashWrk Cap	-11.395	67.53906	-83.901	-1.023	-0.84198	-0.382	-2.57401	-10.862	-2.429	2014 Change No	-309193
2014 Change Non cashWrk Cap	-24.318	-9.3461	-22.667	6.611002	2.429995	4.602	-0.933	33.672	4.078999	2015 Change No	15501
2015 Change Non cashWrk Cap	-1.327	-154.523	-15.806	-2.751	7.948002	-6.233	0.132001	-8.179	-1.091	2016 Change No	-844931
2011	-0.05012	0.179555	0.057482	-0.0188	-0.02836	-0.02709	0.008769	0.010278	-0.00084	2012	-0.113131057
2012 WK cap/sale	0.017072	-0.19795	0.042037	-0.02267	0.022291	0.017555	0.025702	-0.01054	0.001424	2013 WK cap/sal	0.210087748
2013 WK cap/sale	-0.02414	0.023274	-0.10915	-0.01481	-0.00144	-0.00414	-0.02241	-0.03923	-0.05731	2014 WK cap/sal	-0.062439959
2014 WK cap/sale	-0.05221	-0.0031	-0.02906	0.09123	0.004067	0.048517	-0.00796	0.105334	0.088867	2015 WK cap/sal	0.003975571
2015 WK cap/sale	-0.00289	-0.04892	-0.01941	-0.03572	0.013509	-0.06437	0.001047	-0.02681	-0.02317	2016 WK cap/sale	
Co Averages	-0.02246	-0.00943	-0.01162	-0.00015	0.002013	-0.0059	0.001028	0.007806	0.001795	Average	0.96%
						Median					-0.02%

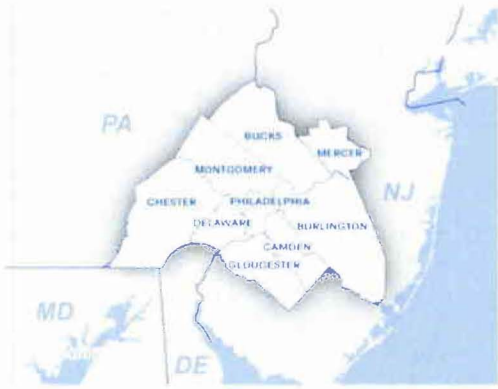


ADR 022 | July 2016

Analytical Data Report

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





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



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

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

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

DVRPC public meetings are always held in ADA-accessible facilities and in transit-accessible locations when possible. Auxiliary services can be provided to individuals who submit a request at least seven days prior to a meeting. Requests made within seven days will be accommodated to the greatest extent possible. Any person who believes they have been aggrieved by an unlawful discriminatory practice by DVRPC under Title VI has a right to file a formal complaint. Any such complaint may be in writing and filed with DVRPC's Title VI Compliance Manager and/or the appropriate state or federal agency within 180 days of the alleged discriminatory occurrence. For more information on DVRPC's Title VI program, or to obtain a Title VI Complaint Form, please call (215) 592-1800 or email public_affairs@dvrpc.org.

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

Background

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

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

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

Method for Calculating County-Level 2045 Population Forecasts

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

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

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

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

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

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

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

Method for Calculating Municipal-Level 2045 Population Forecasts

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

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

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

Method for Developing Mid-Year Population Forecasts

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

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

Table 1: Forecasted Population by County, 2015-2045

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

Source: Delaware Valley Regional Planning Commission, July 2016.

Table 2 identifies the 20 municipalities expected to gain the most residents between 2015 and 2045, and Table 3 identifies municipalities with the highest forecasted percentage change in population. Figure 1 illustrates the 2040 population forecasts by municipality, with concentrations of population seen in Philadelphia and the region's mature suburbs and along major highway corridors, including Route 422, Route 30, Mercer County's Route 1 corridor, and the Route 55 in Gloucester County and southern Camden County. Figures 2 and 3 illustrate absolute and percent change in population by municipality between 2015 and 2045, respectively.

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

Highlights

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

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

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

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

Source: Delaware Valley Regional Planning Commission, July 2016.

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

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

Source: Delaware Valley Regional Planning Commission, July 2016.

**Figure 1:
2045 Municipal Population Forecast**

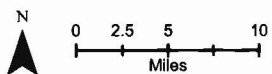
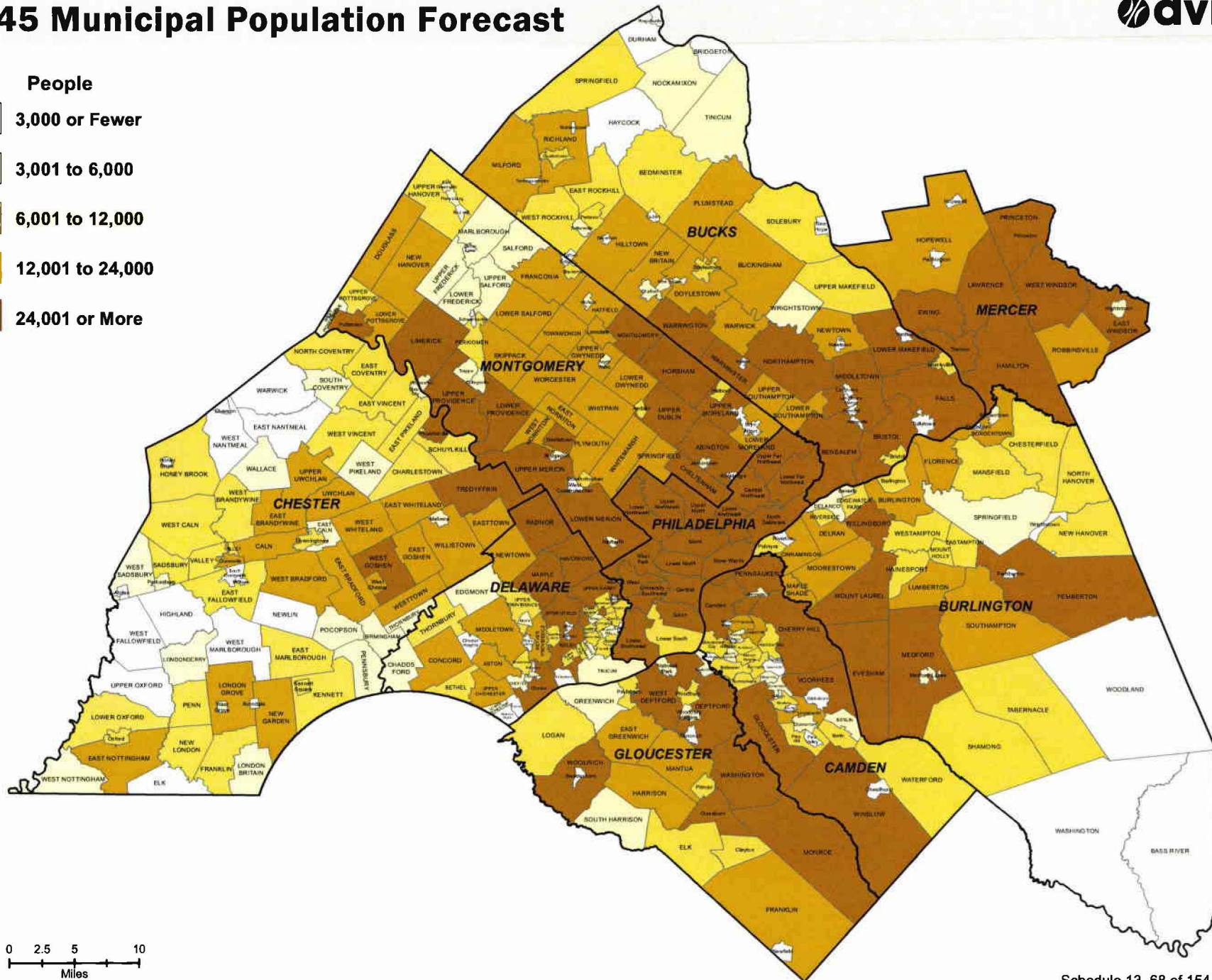
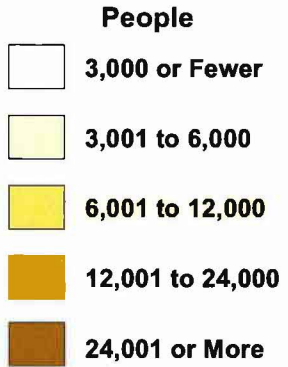


Figure 2:
2045 Municipal Population Forecast
Absolute Change: 2015–2045

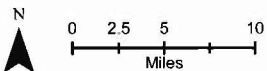
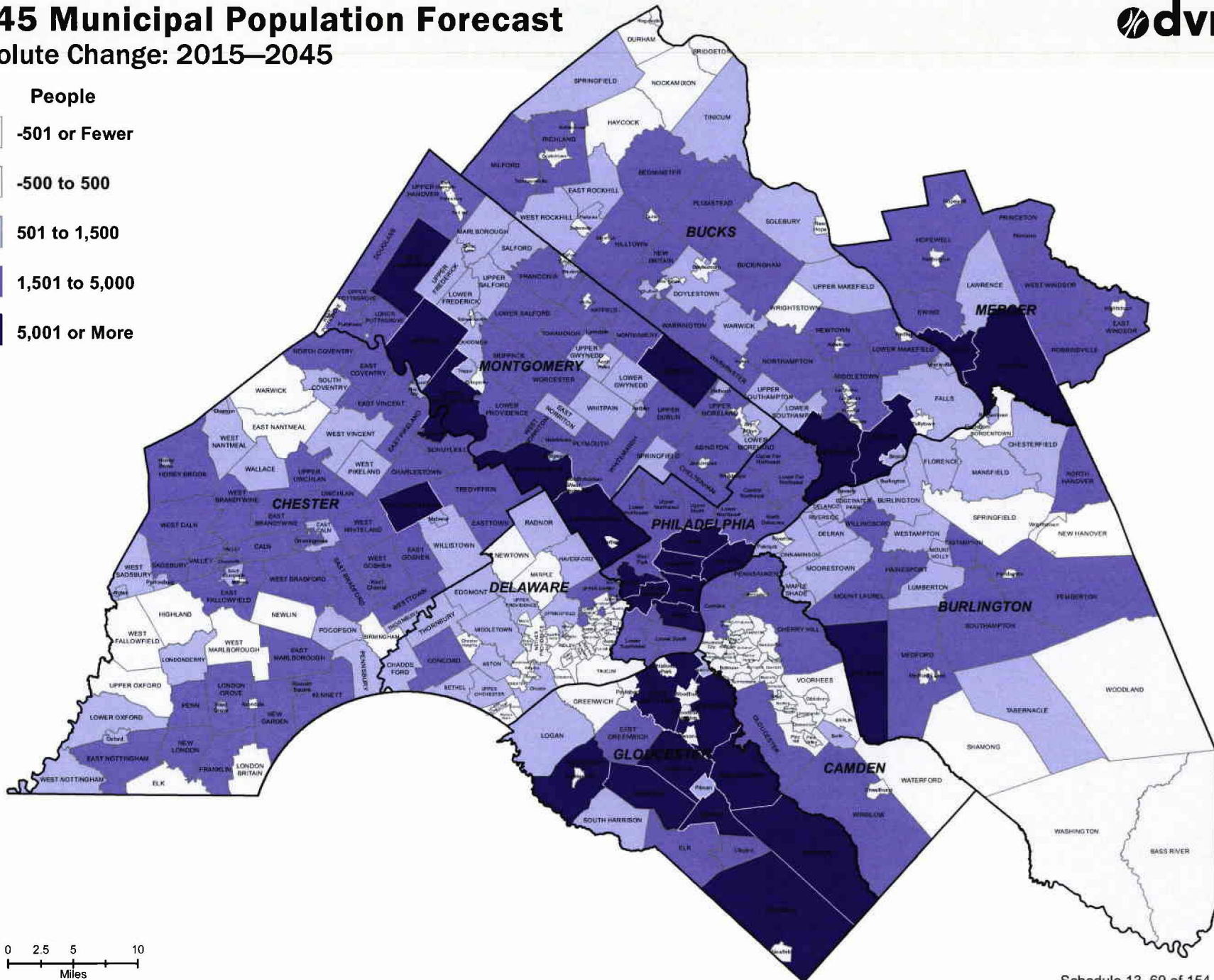
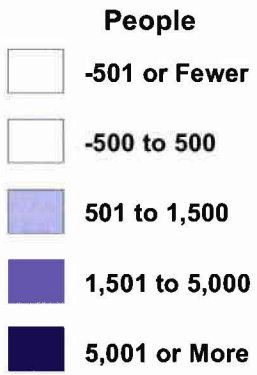


Figure 3:
2045 Municipal Population Forecast
Percentage Change: 2015–2045

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

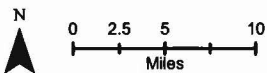
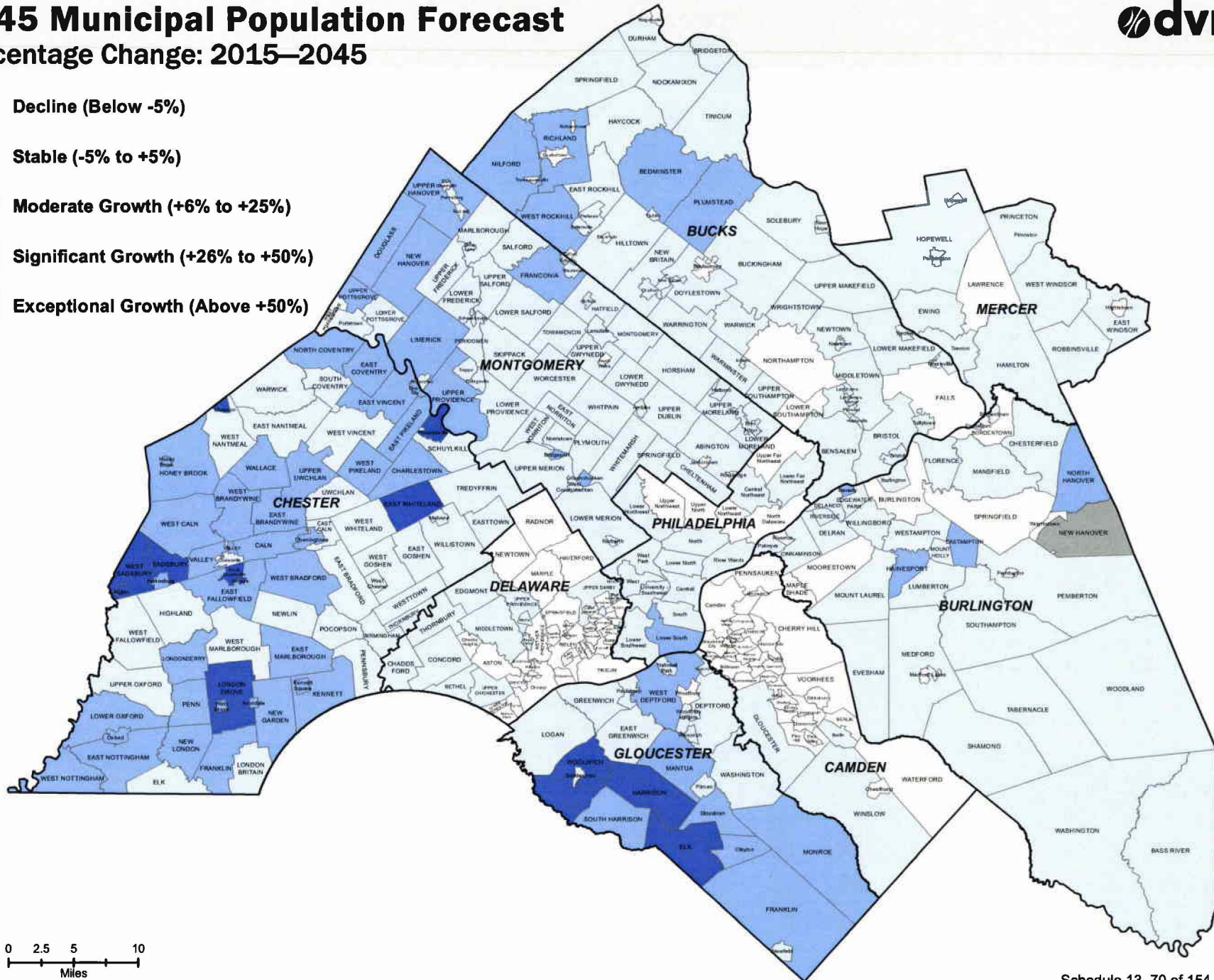
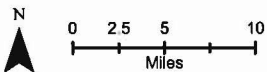
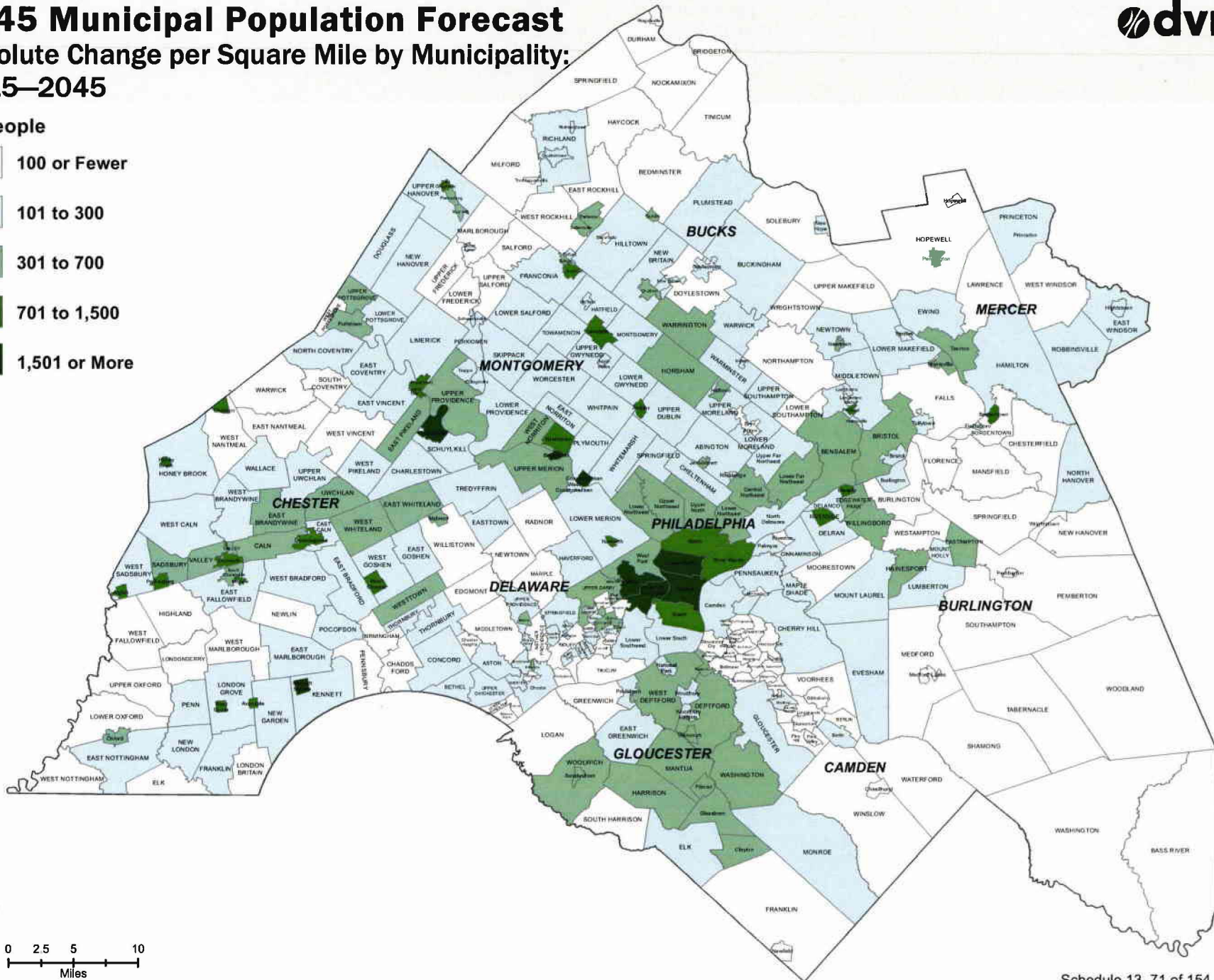
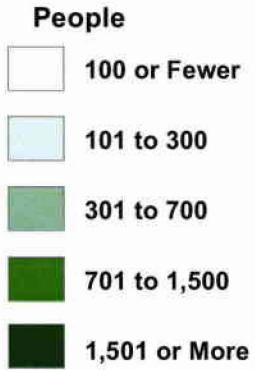


Figure 4:
2045 Municipal Population Forecast
Absolute Change per Square Mile by Municipality:
2015–2045



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	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Bucks County	597,636	625,249	627,367	640,495	654,792	669,299	681,273	691,111	699,498	72,131	11.5%
Bedminster Township	4,800	6,574	7,037	7,407	7,775	8,149	8,473	8,739	8,965	1,928	27.4%
Bensalem Township	58,435	60,427	60,374	61,878	63,377	64,898	66,212	67,296	68,212	7,838	13.0%
Bridgeton Township	1,410	1,277	1,283	1,309	1,335	1,361	1,384	1,402	1,418	135	10.5%
Bristol Borough	9,923	9,726	9,569	9,674	9,778	9,884	9,976	10,051	10,115	546	5.7%
Bristol Township	55,521	54,582	54,086	54,360	56,166	57,990	59,127	60,060	60,852	6,766	12.5%
Buckingham Township	16,440	20,075	20,385	21,079	21,770	22,471	23,078	23,577	24,000	3,615	17.7%
Chalfont Borough	3,900	4,009	4,069	4,496	4,559	4,625	4,672	4,699	4,726	657	16.1%
Doylestown Borough	8,230	8,380	8,301	8,368	8,435	8,502	8,561	8,609	8,650	349	4.2%
Doylestown Township	18,387	17,565	17,563	17,806	18,048	18,293	18,506	18,681	18,829	1,266	7.2%
Dublin Borough	2,085	2,158	2,169	2,221	2,273	2,325	2,371	2,408	2,440	271	12.5%
Durham Township	1,313	1,144	1,144	1,175	1,206	1,238	1,265	1,288	1,307	163	14.2%
East Rockhill Township	5,200	5,706	5,742	5,924	6,106	6,290	6,450	6,581	6,692	950	16.5%
Falls Township	34,865	34,300	33,901	34,074	34,245	34,420	34,571	34,695	34,800	899	2.7%
Haycock Township	2,190	2,225	2,218	2,266	2,315	2,363	2,406	2,441	2,470	252	11.4%
Hilltown Township	12,100	15,029	15,262	15,807	16,349	16,900	17,376	17,768	18,100	2,838	18.6%
Hulmeville Borough	895	1,003	996	1,007	1,017	1,028	1,037	1,045	1,051	55	5.5%
Ivyland Borough	492	1,041	1,053	1,071	1,089	1,108	1,124	1,137	1,148	95	9.0%
Langhorne Borough	1,980	1,622	1,599	1,618	1,638	1,657	1,674	1,688	1,700	101	6.3%
Langhorne Manor Borough	925	1,442	1,431	1,449	1,467	1,485	1,501	1,514	1,525	94	6.6%
Lower Makefield Township	32,691	32,559	32,755	33,683	34,074	34,474	34,855	35,181	35,500	2,745	8.4%
Lower Southampton Township	19,275	18,909	19,142	19,266	19,389	19,515	19,623	19,712	19,788	646	3.4%
Middletown Township	44,140	45,436	45,407	46,097	46,784	47,480	48,084	48,580	49,000	3,593	7.9%
Milford Township	8,810	9,902	10,053	10,555	11,055	11,562	12,002	12,363	12,669	2,616	26.0%
Morrisville Borough	10,020	8,728	8,605	8,623	8,796	8,968	9,074	9,160	9,234	629	7.3%
New Britain Borough	2,358	3,152	3,017	3,080	3,143	3,207	3,263	3,308	3,347	330	10.9%
New Britain Township	10,695	11,070	11,236	11,653	12,068	12,489	12,854	13,154	13,408	2,172	19.3%
New Hope Borough	2,250	2,528	2,510	2,550	2,590	2,631	2,666	2,695	2,719	209	8.3%
Newtown Borough	2,310	2,248	2,222	2,284	2,345	2,407	2,461	2,505	2,543	321	14.4%
Newtown Township	18,206	19,299	19,704	20,059	20,412	20,770	21,081	21,336	21,552	1,848	9.4%
Nockamixon Township	3,520	3,441	3,413	3,491	3,568	3,647	3,715	3,771	3,818	405	11.9%
Northampton Township	39,384	39,726	39,587	39,841	40,262	40,691	41,012	41,276	41,500	1,913	4.8%
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	2000 Census	2010 Census	2015 Census							2015-2045	
			Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
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 Cain 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	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Easttown Township	10,265	10,477	10,620	10,966	11,309	11,659	11,961	12,209	12,420	1,800	16.9%
Elk Township	1,490	1,681	1,695	1,753	1,810	1,868	1,919	1,960	1,995	300	17.7%
Elverson Borough	960	1,225	1,314	1,472	1,629	1,788	1,926	2,040	2,136	822	62.6%
Franklin Township	3,850	4,352	4,518	4,861	5,202	5,548	5,848	6,094	6,303	1,785	39.5%
Highland Township	1,125	1,272	1,289	1,332	1,375	1,419	1,457	1,488	1,514	225	17.5%
Honey Brook Borough	1,285	1,713	1,758	1,873	1,988	2,104	2,205	2,288	2,358	600	34.1%
Honey Brook Township	6,280	7,647	8,124	8,510	8,980	9,523	10,058	10,596	10,924	2,800	34.5%
Kennett Square Borough	5,275	6,072	6,167	6,666	7,163	7,667	8,104	8,463	8,767	2,600	42.2%
Kennett Township	6,450	7,565	8,172	8,690	9,206	9,730	10,184	10,556	10,872	2,700	33.0%
London Britain Township	2,795	3,139	3,268	3,314	3,360	3,406	3,447	3,480	3,508	240	7.3%
London Grove Township	5,265	7,475	8,592	9,213	9,969	10,842	11,702	12,566	13,092	4,500	52.4%
Londonderry Township	1,630	2,149	2,400	2,553	2,706	2,860	2,995	3,105	3,198	798	33.3%
Lower Oxford Township	4,320	5,200	5,001	5,289	5,576	5,867	6,119	6,326	6,501	1,500	30.0%
Malvern Borough	3,060	2,998	3,430	3,557	3,684	3,813	3,924	4,015	4,093	663	19.3%
Modena Borough	610	535	528	591	654	718	774	819	858	330	62.5%
New Garden Township	9,080	11,984	12,096	12,730	13,360	14,000	14,555	15,010	15,396	3,300	27.3%
New London Township	4,585	5,631	5,944	6,438	6,930	7,429	7,862	8,217	8,518	2,574	43.3%
Newlin Township	1,150	1,285	1,356	1,415	1,474	1,534	1,586	1,629	1,665	309	22.8%
North Coventry Township	7,380	7,866	8,024	8,397	8,851	9,375	9,891	10,409	10,724	2,700	33.6%
Oxford Borough	4,315	5,077	5,385	5,571	5,798	6,060	6,318	6,577	6,735	1,350	25.1%
Parkesburg Borough	3,375	3,593	3,687	3,974	4,260	4,551	4,802	5,009	5,184	1,497	40.6%
Penn Township	2,810	5,364	5,475	5,964	6,451	6,945	7,373	7,724	8,022	2,547	46.5%
Pennsbury Township	3,505	3,604	3,659	3,763	3,867	3,972	4,064	4,138	4,202	543	14.8%
Phoenixville Borough	14,795	16,440	16,658	18,696	20,725	22,481	24,002	25,051	25,710	9,052	54.3%
Pocopson Township	3,350	4,582	4,856	5,060	5,264	5,471	5,649	5,796	5,921	1,065	21.9%
Sadsbury Township	2,580	3,570	3,850	4,311	4,769	5,235	5,638	5,969	6,250	2,400	62.3%
Schuylkill Township	6,965	8,516	8,576	8,922	9,265	9,615	9,917	10,165	10,376	1,800	21.0%
South Coatesville Borough	995	1,303	1,435	1,574	1,713	1,853	1,975	2,075	2,160	725	50.5%
South Coventry Township	1,895	2,604	2,616	2,721	2,825	2,931	3,023	3,098	3,162	546	20.9%
Spring City Borough	3,305	3,323	3,322	3,514	3,705	3,898	4,066	4,204	4,321	999	30.1%
Thornbury Township	2,678	3,017	3,343	3,503	3,662	3,824	3,964	4,079	4,177	834	24.9%
Tredyffrin Township	29,065	29,332	29,559	30,232	30,900	31,578	32,165	32,648	33,059	3,500	11.8%
Upper Oxford Township	2,095	2,484	2,504	2,594	2,684	2,776	2,855	2,920	2,975	471	18.8%
Upper Uwchlan Township	6,850	11,227	11,545	12,179	12,809	13,449	14,004	14,459	14,845	3,300	28.6%
Uwchlan Township	16,575	18,088	19,072	19,763	20,451	21,149	21,754	22,251	22,672	3,600	18.9%
Valley Township	5,115	6,794	7,632	8,187	8,740	9,301	9,787	10,186	10,524	2,892	37.9%
Wallace Township	3,240	3,458	3,698	3,985	4,270	4,560	4,811	5,017	5,192	1,494	40.4%
Warwick Township	2,555	2,507	2,550	2,610	2,671	2,732	2,785	2,828	2,865	315	12.4%
West Bradford Township	10,775	12,223	12,779	13,519	14,255	15,003	15,651	16,183	16,634	3,855	30.2%

County / Municipality	2000 Census	2010 Census	2015 Census							2015-2045	
			Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
West Brandywine Township	7,160	7,394	7,468	8,159	8,847	9,545	10,150	10,647	11,068	3,600	48.2%
West Caln Township	7,055	9,014	9,085	9,539	9,990	10,449	10,846	11,172	11,449	2,364	26.0%
West Chester Borough	17,861	18,461	19,842	20,361	20,876	21,400	21,853	22,225	22,542	2,700	13.6%
West Fallowfield Township	2,485	2,566	2,596	2,625	2,653	2,683	2,708	2,728	2,746	150	5.8%
West Goshen Township	20,495	21,866	23,137	23,713	24,284	24,868	25,369	25,786	26,137	3,000	13.0%
West Grove Borough	2,650	2,854	2,859	3,002	3,144	3,288	3,413	3,516	3,603	744	26.0%
West Marlborough Township	855	814	821	830	838	847	855	861	866	45	5.5%
West Nantmeal Township	2,030	2,170	2,190	2,294	2,397	2,502	2,592	2,667	2,730	540	24.7%
West Nottingham Township	2,634	2,722	2,706	2,879	3,051	3,225	3,377	3,501	3,606	900	33.3%
West Pikeland Township	3,550	4,024	4,085	4,324	4,562	4,803	5,013	5,184	5,330	1,245	30.5%
West Sadsbury Township	2,440	2,444	2,475	2,661	2,888	3,150	3,408	3,667	3,825	1,350	54.5%
West Vincent Township	3,170	4,567	5,038	5,230	5,422	5,616	5,784	5,923	6,040	1,002	19.9%
West Whiteland Township	16,500	18,274	18,450	19,266	20,077	20,901	21,614	22,201	22,698	4,248	23.0%
Westtown Township	10,352	10,827	10,913	11,426	11,936	12,454	12,902	13,271	13,583	2,670	24.5%
Willistown Township	10,015	10,497	10,905	11,177	11,448	11,724	11,962	12,158	12,324	1,419	13.0%
Delaware County	551,989	558,979	563,894	568,337	572,758	577,248	581,136	584,329	587,037	23,143	4.1%
Aldan Borough	4,315	4,152	4,165	4,186	4,208	4,230	4,248	4,264	4,277	112	2.7%
Aston Township	16,205	16,592	16,799	16,942	17,083	17,227	17,352	17,455	17,541	742	4.4%
Bethel Township	6,420	8,791	9,166	9,359	9,550	9,745	9,914	10,052	10,170	1,004	11.0%
Brookhaven Borough	7,985	8,006	8,078	8,138	8,198	8,259	8,311	8,355	8,391	313	3.9%
Chadds Ford Township	3,170	3,640	3,740	3,848	3,955	4,064	4,159	4,237	4,302	562	15.0%
Chester City	36,855	33,972	34,092	34,281	34,468	34,659	34,824	34,960	35,075	983	2.9%
Chester Heights Borough	2,481	2,531	2,626	2,647	2,667	2,688	2,706	2,721	2,733	107	4.1%
Chester Township	4,605	3,940	4,103	4,140	4,178	4,216	4,248	4,275	4,298	195	4.8%
Clifton Heights Borough	6,780	6,652	6,684	6,709	6,733	6,758	6,780	6,798	6,813	129	1.9%
Collingdale Borough	8,665	8,786	8,792	8,866	8,939	9,014	9,079	9,132	9,177	385	4.4%
Colwyn Borough	2,455	2,546	2,553	2,584	2,615	2,646	2,673	2,695	2,714	161	6.3%
Concord Township	11,235	17,231	17,663	18,150	18,635	19,127	19,554	19,904	20,201	2,538	14.4%
Darby Borough	10,300	10,687	10,687	10,756	10,825	10,896	10,956	11,006	11,049	362	3.4%
Darby Township	9,625	9,264	9,318	9,322	9,326	9,330	9,333	9,336	9,338	20	0.2%
East Lansdowne Borough	2,585	2,668	2,665	2,673	2,682	2,690	2,697	2,703	2,709	44	1.7%
Eddystone Borough	2,440	2,410	2,407	2,414	2,420	2,427	2,433	2,438	2,442	35	1.5%
Edgmont Township	3,915	3,987	4,069	4,214	4,358	4,504	4,631	4,735	4,823	754	18.5%
Folcroft Borough	6,980	6,606	6,637	6,631	6,625	6,619	6,614	6,610	6,606	-31	-0.5%
Glenolden Borough	7,475	7,153	7,173	7,194	7,215	7,236	7,255	7,270	7,283	110	1.5%
Haverford Township	49,608	48,491	49,057	49,279	49,500	49,724	49,918	50,078	50,213	1,156	2.4%
Lansdowne Borough	11,044	10,620	10,639	10,655	10,671	10,688	10,702	10,714	10,724	85	0.8%
Lower Chichester Township	3,590	3,469	3,477	3,488	3,499	3,510	3,519	3,527	3,534	57	1.6%

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Marcus Hook Borough	2,315	2,397	2,397	2,415	2,433	2,451	2,466	2,479	2,490	93	3.9%
Marple Township	23,735	23,428	23,743	23,794	23,846	23,898	23,942	23,979	24,011	268	1.1%
Media Borough	5,530	5,327	5,363	5,445	5,526	5,608	5,679	5,738	5,788	425	7.9%
Middletown Township	16,065	15,807	15,998	16,185	16,371	16,560	16,724	16,858	16,972	974	6.1%
Millbourne Borough	945	1,159	1,162	1,178	1,194	1,210	1,223	1,235	1,244	82	7.1%
Morton Borough	2,715	2,669	2,695	2,707	2,720	2,732	2,743	2,752	2,760	65	2.4%
Nether Providence Township	13,456	13,706	13,808	13,893	13,977	14,063	14,138	14,199	14,251	443	3.2%
Newtown Township	11,705	12,216	12,754	12,849	12,943	13,038	13,121	13,189	13,246	492	3.9%
Norwood Borough	5,985	5,890	5,898	5,917	5,935	5,954	5,970	5,984	5,995	97	1.6%
Parkside Borough	2,265	2,328	2,334	2,349	2,365	2,380	2,394	2,405	2,414	80	3.4%
Prospect Park Borough	6,595	6,454	6,481	6,515	6,548	6,582	6,612	6,636	6,656	175	2.7%
Radnor Township	30,880	31,531	31,612	31,808	32,003	32,201	32,373	32,513	32,633	1,021	3.2%
Ridley Park Borough	7,195	7,002	7,035	7,071	7,106	7,143	7,174	7,200	7,221	186	2.6%
Ridley Township	30,790	30,768	31,053	31,129	31,205	31,281	31,348	31,402	31,449	396	1.3%
Rose Valley Borough	945	913	949	970	991	1,012	1,031	1,046	1,058	109	11.5%
Rutledge Borough	860	784	795	798	801	804	807	809	811	16	2.0%
Sharon Hill Borough	5,465	5,697	5,702	5,733	5,764	5,795	5,822	5,845	5,863	161	2.8%
Springfield Township	23,675	24,211	24,401	24,612	24,822	25,035	25,220	25,372	25,500	1,099	4.5%
Swarthmore Borough	6,170	6,194	6,211	6,249	6,287	6,325	6,359	6,386	6,409	198	3.2%
Thornbury Township	5,787	8,028	7,857	8,039	8,219	8,403	8,562	8,692	8,803	946	12.0%
Tinicum Township	4,355	4,091	4,109	4,113	4,117	4,120	4,124	4,126	4,129	20	0.5%
Trainer Borough	1,905	1,828	1,844	1,833	1,822	1,810	1,801	1,793	1,786	-58	-3.1%
Upland Borough	2,980	3,239	3,251	3,263	3,274	3,286	3,296	3,304	3,311	60	1.8%
Upper Chichester Township	16,845	16,738	17,003	17,177	17,350	17,526	17,678	17,803	17,909	906	5.3%
Upper Darby Township	81,821	82,795	82,878	83,699	84,521	85,354	86,073	86,662	87,167	4,289	5.2%
Upper Providence Township	10,510	10,142	10,448	10,592	10,735	10,881	11,007	11,110	11,198	750	7.2%
Yeadon Borough	11,762	11,443	11,523	11,528	11,533	11,539	11,543	11,547	11,550	27	0.2%
Montgomery County	748,978	799,874	819,264	840,934	863,327	884,387	903,114	918,918	932,820	113,556	13.9%
Abington Township	56,105	55,310	55,590	56,172	56,754	57,336	57,918	58,500	59,083	3,493	6.3%
Ambler Borough	6,425	6,417	6,505	6,657	6,810	6,963	7,116	7,269	7,422	917	14.1%
Bridgeport Borough	4,370	4,554	4,564	4,964	5,464	5,533	5,602	5,671	5,740	1,176	25.8%
Bryn Athyn Borough	1,350	1,375	1,392	1,408	1,423	1,439	1,453	1,464	1,474	82	5.9%
Cheltenham Township	36,880	36,793	37,014	37,364	37,714	38,146	38,578	39,092	39,607	2,593	7.0%
Collegeville Borough	4,930	5,089	5,287	5,360	5,432	5,506	5,569	5,622	5,666	379	7.2%
Conshohocken Borough	7,590	7,833	7,956	8,706	9,456	9,877	10,297	10,567	10,837	2,881	36.2%
Douglass Township	9,104	10,195	10,432	10,950	11,464	11,987	12,440	12,812	13,128	2,696	25.8%
East Greenville Borough	3,105	2,951	2,985	3,047	3,109	3,171	3,233	3,295	3,358	373	12.5%
East Norriton Township	13,211	13,590	14,082	14,256	14,430	14,606	14,759	14,884	14,990	908	6.4%

County / Municipality										2015-2045			
	2000 Census	2010 Census	2015 Census			2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute	Percentage
			Estimate									Change	Change
Franconia Township	11,525	13,064	13,241	13,798	14,355	14,912	15,469	16,026	16,584	3,343	25.2%		
Green Lane Borough	580	508	500	508	515	523	530	535	540	40	8.0%		
Hatboro Borough	7,390	7,360	7,411	7,591	7,770	7,952	8,110	8,240	8,349	938	12.7%		
Hatfield Borough	2,605	3,290	3,306	3,342	3,378	3,415	3,447	3,473	3,495	189	5.7%		
Hatfield Township	16,712	17,249	17,558	18,057	18,553	19,057	19,493	19,851	20,155	2,597	14.8%		
Horsham Township	24,234	26,147	26,587	26,987	28,319	29,668	31,023	31,845	32,541	5,954	22.4%		
Jenkintown Borough	4,475	4,422	4,431	4,467	4,504	4,541	4,572	4,599	4,621	190	4.3%		
Lansdale Borough	16,070	16,269	16,512	17,019	17,523	18,035	18,479	18,843	19,152	2,640	16.0%		
Limerick Township	13,535	18,074	18,798	19,854	20,904	21,970	22,894	23,653	24,296	5,498	29.2%		
Lower Frederick Township	4,795	4,840	4,892	4,985	5,078	5,171	5,263	5,355	5,447	555	11.3%		
Lower Gwynedd Township	10,420	11,405	11,548	11,732	11,916	12,100	12,284	12,468	12,651	1,103	9.6%		
Lower Merion Township	58,740	57,825	58,177	59,676	61,027	62,135	62,983	63,732	64,231	6,054	10.4%		
Lower Moreland Township	11,280	12,982	13,220	13,426	13,631	13,839	14,020	14,168	14,294	1,074	8.1%		
Lower Pottsgrove Township	11,213	12,059	12,174	12,565	12,954	13,350	13,692	13,973	14,212	2,038	16.7%		
Lower Providence Township	22,390	25,436	26,187	26,679	27,168	27,664	28,094	28,448	28,747	2,560	9.8%		
Lower Salford Township	12,895	14,959	15,344	15,922	16,497	17,081	17,587	18,002	18,355	3,011	19.6%		
Marlborough Township	3,110	3,178	3,308	3,405	3,501	3,599	3,683	3,753	3,812	504	15.2%		
Montgomery Township	22,025	24,790	26,025	26,545	27,063	27,588	28,044	28,418	28,735	2,710	10.4%		
Narberth Borough	4,235	4,282	4,309	4,378	4,447	4,517	4,578	4,627	4,669	360	8.4%		
New Hanover Township	7,365	10,939	12,495	13,605	14,708	15,829	16,800	17,598	18,274	5,779	46.3%		
Norristown Borough	31,280	34,324	34,412	34,777	35,212	35,737	36,344	36,942	37,543	3,131	9.1%		
North Wales Borough	3,340	3,229	3,250	3,277	3,304	3,332	3,356	3,375	3,392	142	4.4%		
Pennsburg Borough	2,730	3,843	3,873	3,942	4,010	4,080	4,140	4,190	4,232	359	9.3%		
Perkiomen Township	7,095	9,139	9,245	9,486	9,726	9,969	10,180	10,354	10,501	1,256	13.6%		
Plymouth Township	16,045	16,525	17,653	18,091	18,527	18,969	19,353	19,668	19,934	2,281	12.9%		
Pottstown Borough	21,859	22,377	22,664	22,959	23,253	23,551	23,809	24,021	24,201	1,537	6.8%		
Red Hill Borough	2,195	2,383	2,383	2,441	2,498	2,557	2,607	2,649	2,684	301	12.6%		
Rockledge Borough	2,575	2,543	2,541	2,553	2,565	2,577	2,588	2,596	2,604	63	2.5%		
Royersford Borough	4,245	4,752	4,771	4,893	5,014	5,136	5,243	5,330	5,404	633	13.3%		
Salford Township	2,365	2,504	2,954	3,088	3,222	3,358	3,475	3,572	3,654	700	23.7%		
Schwenksville Borough	1,395	1,385	1,398	1,422	1,445	1,469	1,489	1,506	1,521	123	8.8%		
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	2000 Census	2010 Census	2015 Census							2015-2045	
			Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Upper Gwynedd Township	14,245	15,552	15,928	16,116	16,304	16,492	16,679	16,866	17,053	1,125	7.1%
Upper Hanover Township	4,885	6,464	7,287	7,696	8,103	8,516	8,874	9,168	9,417	2,130	29.2%
Upper Merion Township	26,863	28,395	28,620	30,147	31,668	32,607	33,393	34,003	34,491	5,871	20.5%
Upper Moreland Township	24,990	24,015	24,231	24,522	24,812	25,107	25,362	25,572	25,749	1,518	6.3%
Upper Pottsgrove Township	4,105	5,315	5,483	5,774	6,065	6,357	6,649	6,941	7,233	1,750	31.9%
Upper Providence Township	15,395	21,219	23,460	24,622	25,777	26,951	27,967	28,802	29,510	6,050	25.8%
Upper Salford Township	3,025	3,299	3,378	3,507	3,636	3,765	3,894	4,024	4,154	776	23.0%
West Conshohocken Borough	1,445	1,320	1,381	1,411	1,442	1,472	1,499	1,521	1,539	158	11.4%
West Norriton Township	14,900	15,663	15,779	16,145	16,509	16,878	17,198	17,461	17,684	1,905	12.1%
West Pottsgrove Township	3,815	3,874	3,884	3,915	3,945	3,976	4,003	4,025	4,044	160	4.1%
Whitemarsh Township	16,702	17,349	17,663	18,503	19,040	19,486	19,859	20,197	20,476	2,813	15.9%
Whitpain Township	18,562	18,875	19,180	19,464	19,747	20,034	20,283	20,487	20,661	1,481	7.7%
Worcester Township	7,789	9,750	10,435	10,917	11,396	11,882	12,304	12,650	12,943	2,508	24.0%
Philadelphia County	1,517,550	1,526,006	1,567,443	1,594,787	1,616,816	1,643,971	1,667,290	1,683,402	1,696,133	128,690	8.2%
Central	100,188	117,132	126,629	132,848	137,233	143,015	148,841	153,321	157,035	30,406	24.0%
Central Northeast	72,179	78,266	79,870	81,333	82,568	83,813	84,123	84,490	84,713	4,843	6.1%
Lower Far Northeast	71,657	70,340	70,596	71,526	72,319	73,060	73,588	74,087	74,502	3,906	5.5%
Lower North	95,139	95,176	101,692	105,069	108,227	111,507	114,601	116,878	118,052	16,360	16.1%
Lower Northeast	93,471	100,232	102,654	103,621	104,301	104,837	105,110	105,080	105,424	2,770	2.7%
Lower Northwest	51,869	50,799	52,319	53,241	54,072	54,730	55,162	55,406	55,811	3,492	6.7%
Lower South	4,318	5,150	5,499	5,747	5,998	6,501	6,749	7,001	7,335	1,836	33.4%
Lower Southwest	41,642	42,117	42,462	43,288	43,711	44,054	44,854	45,183	45,439	2,977	7.0%
North	141,061	137,849	138,049	138,663	140,022	142,561	144,724	145,520	146,656	8,607	6.2%
North Delaware	96,005	100,631	101,251	102,210	102,553	102,944	102,909	103,041	103,280	2,029	2.0%
River Wards	66,321	68,489	70,385	72,380	73,004	74,203	75,613	76,270	76,951	6,566	9.3%
South	131,616	132,904	137,110	138,842	140,432	141,898	143,712	144,223	144,877	7,767	5.7%
University/Southwest	83,639	81,746	87,719	92,546	94,735	97,599	99,607	101,667	102,305	14,586	16.6%
Upper Far Northeast	64,469	66,605	67,986	68,387	69,071	69,893	69,943	70,370	70,660	2,674	3.9%
Upper North	154,560	144,381	145,913	146,533	147,898	149,046	149,501	150,207	150,422	4,509	3.1%
Upper Northwest	89,851	85,093	85,633	86,048	87,079	88,209	89,309	89,432	89,915	4,282	5.0%
West	111,973	105,642	106,922	107,403	108,060	109,844	112,163	114,009	115,200	8,278	7.7%
West Park	47,592	43,454	44,754	45,102	45,533	46,257	46,781	47,217	47,556	2,802	6.3%
Burlington County	423,397	448,734	450,226	459,344	468,428	475,978	482,560	488,026	492,709	42,483	9.4%
Bass River Township	1,510	1,443	1,449	1,483	1,516	1,550	1,580	1,604	1,624	175	12.1%
Beverly City	2,660	2,577	2,559	2,710	2,859	3,011	3,143	3,251	3,343	784	30.6%
Bordentown City	3,970	3,924	3,882	4,012	4,141	4,273	4,387	4,480	4,559	677	17.4%
Bordentown Township	8,375	11,367	11,935	11,965	11,996	12,027	12,053	12,075	12,094	159	1.3%

County / Municipality	2015 Census									2015-2045	
	2000 Census	2010 Census	Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Burlington City	9,740	9,920	9,808	10,010	10,210	10,414	10,590	10,735	10,858	1,050	10.7%
Burlington Township	20,190	22,594	22,826	22,936	23,045	23,156	23,252	23,331	23,398	572	2.5%
Chesterfield Township	5,955	7,699	7,572	7,715	7,857	8,002	8,127	8,230	8,317	745	9.8%
Cinnaminson Township	14,595	15,569	16,651	16,880	17,108	17,339	17,540	17,704	17,844	1,193	7.2%
Delanco Township	3,335	4,283	4,541	4,644	4,746	4,849	4,939	5,013	5,075	534	11.8%
Delran Township	15,535	16,896	16,767	16,959	17,150	17,343	17,511	17,649	17,766	999	6.0%
Eastampton Township	6,205	6,069	6,011	6,450	6,887	7,331	7,715	8,031	8,298	2,287	38.0%
Edgewater Park Township	7,865	8,881	8,788	8,995	9,200	9,409	9,590	9,738	9,864	1,076	12.2%
Evesham Township	42,275	45,538	45,577	47,546	49,519	49,847	50,175	50,504	50,831	5,254	11.5%
Fieldsboro Borough	522	540	532	539	547	554	560	565	570	38	7.1%
Florence Township	10,745	12,109	12,688	12,864	13,038	13,216	13,369	13,495	13,602	914	7.2%
Hainesport Township	4,125	6,110	6,053	6,582	7,108	7,643	8,105	8,486	8,808	2,755	45.5%
Lumberton Township	10,455	12,559	12,428	12,712	12,995	13,281	13,530	13,734	13,907	1,479	11.9%
Mansfield Township	5,090	8,544	8,574	8,735	8,896	9,058	9,200	9,315	9,414	840	9.8%
Maple Shade Township	19,080	19,131	18,963	19,071	19,178	19,287	19,381	19,459	19,524	561	3.0%
Medford Lakes Borough	4,175	4,146	4,085	4,097	4,109	4,122	4,132	4,141	4,149	64	1.6%
Medford Township	22,250	23,033	23,414	23,916	24,415	24,922	25,361	25,721	26,027	2,613	11.2%
Moorestown Township	19,020	20,726	20,564	20,745	20,925	21,107	21,265	21,395	21,505	941	4.6%
Mount Holly Township	10,728	9,536	9,493	9,620	9,747	9,875	9,987	10,078	10,156	663	7.0%
Mount Laurel Township	40,225	41,864	41,842	42,342	42,839	43,346	43,784	44,146	44,449	2,607	6.2%
New Hanover Township	9,744	7,385	8,078	7,927	7,777	7,625	7,493	7,384	7,292	-786	-9.7%
North Hanover Township	7,347	7,678	7,609	8,049	8,486	8,930	9,315	9,630	9,898	2,289	30.1%
Palmyra Borough	7,090	7,398	7,314	7,420	7,525	7,632	7,725	7,801	7,865	551	7.5%
Pemberton Borough	1,210	1,409	1,383	1,390	1,397	1,404	1,410	1,415	1,419	36	2.6%
Pemberton Township	28,575	27,912	27,771	28,279	28,784	29,297	29,741	30,106	30,416	2,645	9.5%
Riverside Township	7,910	8,079	7,997	8,254	8,511	8,771	8,996	9,181	9,338	1,341	16.8%
Riverton Borough	2,760	2,779	2,748	2,753	2,758	2,763	2,768	2,771	2,774	26	0.9%
Shamong Township	6,465	6,490	6,419	6,494	6,568	6,644	6,709	6,763	6,809	390	6.1%
Southampton Township	10,388	10,464	10,337	10,735	11,131	11,533	11,881	12,167	12,409	2,072	20.0%
Springfield Township	3,225	3,414	3,355	3,386	3,417	3,448	3,475	3,498	3,517	162	4.8%
Tabernacle Township	7,170	6,949	6,954	7,051	7,147	7,244	7,329	7,398	7,457	503	7.2%
Washington Township	621	687	674	681	689	697	703	708	713	39	5.8%
Westampton Township	7,217	8,813	8,726	8,932	9,137	9,345	9,525	9,673	9,799	1,073	12.3%
Willingboro Township	33,010	31,629	31,270	31,831	32,391	32,959	33,451	33,855	34,198	2,928	9.4%
Woodland Township	1,290	1,788	1,793	1,833	1,873	1,913	1,948	1,977	2,001	208	11.6%
Wrightstown Borough	750	802	796	801	806	811	815	819	822	26	3.3%
Camden County	508,929	513,657	510,923	514,006	517,073	520,189	522,886	525,101	526,997	16,074	3.1%
Audubon Borough	9,180	8,819	8,730	8,699	8,668	8,637	8,609	8,587	8,568	-162	-1.9%

County / Municipality	2015-2045									2015-2045	
	2000 Census	2010 Census	2015 Census Estimate	2020 Forecast	2025 Forecast	2030 Forecast	2035 Forecast	2040 Forecast	2045 Forecast	Absolute Change	Percentage Change
Audubon Park Borough	1,100	1,023	1,011	1,008	1,006	1,003	1,001	999	997	-14	-1.4%
Barrington Borough	7,084	6,983	6,817	6,816	6,815	6,814	6,813	6,812	6,811	-6	-0.1%
Bellmawr Borough	11,265	11,583	11,462	11,464	11,467	11,469	11,470	11,471	11,472	10	0.1%
Berlin Borough	6,150	7,588	7,590	7,688	7,785	7,884	7,970	8,040	8,100	510	6.7%
Berlin Township	5,290	5,357	5,434	5,439	5,444	5,448	5,453	5,456	5,459	25	0.5%
Brooklawn Borough	2,355	1,955	1,933	1,939	1,945	1,951	1,956	1,960	1,964	31	1.6%
Camden City	79,905	77,344	76,119	76,512	76,904	77,302	77,643	77,929	78,169	2,050	2.7%
Cherry Hill Township	69,960	71,045	71,340	71,903	72,462	73,031	73,523	73,927	74,270	2,930	4.1%
Chesilhurst Borough	1,520	1,634	1,634	1,632	1,631	1,629	1,628	1,627	1,626	-8	-0.5%
Clementon Borough	4,985	5,000	4,947	4,981	5,014	5,048	5,077	5,102	5,122	175	3.5%
Collingswood Borough	14,326	13,926	14,000	13,997	13,994	13,991	13,988	13,986	13,984	-16	-0.1%
Gibbsboro Borough	2,435	2,274	2,244	2,242	2,239	2,236	2,234	2,233	2,231	-13	-0.6%
Gloucester City	11,484	11,456	11,329	11,326	11,323	11,320	11,318	11,316	11,314	-15	-0.1%
Gloucester Township	64,350	64,634	63,939	64,859	65,777	66,707	67,514	68,176	68,737	4,798	7.5%
Haddon Heights Borough	7,545	7,473	7,514	7,474	7,434	7,393	7,358	7,329	7,305	-209	-2.8%
Haddon Township	14,651	14,707	14,543	14,580	14,617	14,655	14,688	14,714	14,737	194	1.3%
Haddonfield Borough	11,661	11,593	11,414	11,412	11,410	11,408	11,407	11,405	11,404	-10	-0.1%
Hi-Nella Borough	1,035	870	860	860	859	859	859	858	858	-2	-0.2%
Laurel Springs Borough	1,970	1,908	1,884	1,883	1,882	1,882	1,881	1,880	1,880	-4	-0.2%
Lawnside Borough	2,692	2,945	2,919	2,917	2,915	2,913	2,911	2,909	2,908	-11	-0.4%
Lindenwold Borough	17,410	17,613	17,458	17,449	17,441	17,432	17,424	17,418	17,413	-45	-0.3%
Magnolia Borough	4,405	4,341	4,298	4,290	4,282	4,274	4,267	4,260	4,256	-42	-1.0%
Merchantville Borough	3,800	3,821	3,778	3,778	3,777	3,777	3,777	3,776	3,776	-2	-0.1%
Mount Ephraim Borough	4,495	4,676	4,639	4,637	4,636	4,634	4,633	4,632	4,631	-8	-0.2%
Oaklyn Borough	4,188	4,038	3,992	4,001	4,010	4,019	4,026	4,033	4,038	46	1.2%
Pennsauken Township	35,737	35,885	35,628	35,924	36,219	36,518	36,778	36,990	37,171	1,543	4.3%
Pine Hill Borough	10,880	10,233	10,510	10,501	10,492	10,482	10,474	10,468	10,462	-48	-0.5%
Pine Valley Borough	20	12	12	12	12	12	12	12	12	0	0.0%
Runnemede Borough	8,535	8,468	8,381	8,380	8,378	8,377	8,376	8,375	8,374	-7	-0.1%
Somerdale Borough	5,192	5,151	5,460	5,444	5,427	5,411	5,397	5,385	5,375	-85	-1.6%
Stratford Borough	7,270	7,040	7,013	7,047	7,081	7,116	7,146	7,170	7,191	178	2.5%
Tavistock Borough	24	5	5	5	5	5	5	5	5	0	0.0%
Voorhees Township	28,130	29,131	29,370	29,305	29,240	29,174	29,117	29,071	29,031	-339	-1.2%
Waterford Township	10,494	10,649	10,753	10,749	10,744	10,740	10,736	10,733	10,747	-6	-0.1%
Winslow Township	34,611	39,499	39,019	39,910	40,797	41,698	42,478	43,119	43,662	4,643	11.9%
Woodlynne Borough	2,795	2,978	2,944	2,943	2,941	2,940	2,939	2,938	2,937	-7	-0.2%
Gloucester County	255,719	288,288	291,479	307,766	323,969	340,425	354,677	366,383	376,308	84,829	29.1%
Clayton Borough	7,135	8,179	8,493	9,013	9,531	10,057	10,512	10,886	11,203	2,710	31.9%

County / Municipality	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
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.

Report Title: Analytical Data Report # 022: County- and Municipal-Level Population Forecasts, 2015-2045

Publication No.: ADR 022

Date Published: July 2016

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.

Delaware Valley Regional Planning Commission
190 North Independence Mall West
8th Floor
Philadelphia, PA 19106-1520

Phone: 215-592-1800
Fax: 215-592-9125
Internet: www.dvrpc.org

Staff contact: Mary E. Bell
Manager, Demographic and Economic Analysis

E-mail: mbell@dvrpc.org



190 N. Independence Mall West
Philadelphia, PA 19106-1520
215.592.1800
www.dvrpc.org

Staff Contact:

Mary E. Bell
Manager, Demographic and Economic Analysis
mbell@dvrpc.org



3/10/2017

9/30/16

Company Name	Ticker Symb	LT Debt-Total Qlty	Preferred S Minority In Common	Equity-Total-Qlty	Invested Capital-Total Qlty	December-16	
						Market Value-Mnthly	
AMERICAN ST AWR		320.897	0.000	0.000	490.799	811.696	1,666.129
AMERICAN W/AWK		5,853.000	0.000	0.000	5,238.000	11,091.000	12,880.297
AQUA AMERIC WTR		1,726.493	0.000	0.000	1,832.200	3,558.693	5,327.834
ARTESIAN RES ARTNA		102.599	0.000	0.000	135.877	238.476	290.340
CALIFORNIA WCWT		555.536	0.000	0.000	652.012	1,207.548	1,626.115
CONNECTICU1 CTWS		200.155	0.772	0.000	237.620	438.547	615.132
MIDDLESEX WMSEX		130.853	2.436	0.000	218.221	351.510	699.450
SJW GROUP SJW		364.229	0.000	0.000	411.608	775.837	1,145.127
YORK WATER YORW		84.584	0.000	0.000	113.619	198.203	490.526

	Book Ratios			
	LTD	Pref	Equity	
AMERICA	0.395	0.000	0.605	1.000
AMERICA	0.528	0.000	0.472	1.000
AQUA AN	0.485	0.000	0.515	1.000
ARTESIAN	0.430	0.000	0.570	1.000
CALIFORNIA	0.460	0.000	0.540	1.000
CONNECTICUT	0.456	0.002	0.542	1.000
MIDDLESEX	0.372	0.007	0.621	1.000
SJW GROUP	0.469	0.000	0.531	1.000
YORK WATER	0.427	0.000	0.573	1.000

Market Ratios			
LTD	Pref	Equity	
0.161	0.000	0.839	1.000
0.312	0.000	0.688	1.000
0.245	0.000	0.755	1.000
0.261	0.000	0.739	1.000
0.255	0.000	0.745	1.000
0.245	0.001	0.754	1.000
0.157	0.003	0.840	1.000
0.241	0.000	0.759	1.000
0.147	0.000	0.853	1.000

Avg 0.225 0.000 0.775
Med 0.245 0.000 0.755

Assumptions: 12/31/2016

Debt Cost	4.22
Pref. Stock Cost	5.7
Equity Cost	9.76
Equity Cost	7.96

Ratio	Cost	Wt	Shield	Overall	
24.50%	4.220	1.03	0.6	0.62034	
0.00%	5.700	0.00	1	0	
75.50%	9.760	7.37	1	7.3688	
		8.40		7.99	<<<<ANSWER
24.50%	4.220	1.03	0.6	0.62034	
0.00%	5.700	0.00	1	0	
75.50%	7.960	6.01	1	6.0098	
		7.04		6.63	<<<<ANSWER



ADR 023 | October 2016

Analytical Data Report

Regional, County, and
Municipal Employment
Forecasts, 2015-2045





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



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

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

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

Introduction

As a part of our long-range planning activities, DVRPC is required to maintain forecasts with at least a 20-year horizon, or to the horizon year of the long-range plan. Population forecasts in five-year increments between 2015 and 2045 were adopted by the DVRPC Board on July 28, 2016. This document presents employment forecasts in five-year increments between 2015 and 2045, developed by DVRPC in coordination with its member county planning staffs. These population and employment forecasts will support the region's 2045 long-range plan, scheduled for adoption in July 2017, and serve as the basis for DVRPC's planning and modeling activities.

2010 and 2013 Employment Base

DVRPC has traditionally based its long-range employment forecasts on employment data from the American Association of State Highway and Transportation Officials' (AASHTO) Census Transportation Planning Products (CTPP). However, 2010 CTPP data was not released until mid-2013, too late to be used for forecasting purposes prior to the 2013 adoption of the current Connections 2040 Long Range Plan. Additionally, changes in the method for calculating CTPP data has increased the margins of error and made it a less reliable source of employment data for small geographies. Subsequently, DVRPC staff researched and compared several sources of employment data, including government sources (such as ES-202 data, the BLS' Quarterly Census of Employment and Wages, and the Current Employment Statistics survey) and private proprietary sources (including Dun and Bradstreet). The National Establishment Time-Series (NETS), produced by Walls and Associates, was determined to be superior to other sources in terms of coverage, accuracy, and the provision of locational data.

The NETS database is essentially a "cleaned-up" version of the Dun and Bradstreet database. Using each company's unique DUNS number (or numbers, in cases where separate divisions within a company have unique DUNS numbers), Walls and Associates creates a time series for each business and then screens the data to eliminate duplicates and identify anomalies. If a file contains suspicious information, the data is cross-checked with previous annual records and adjusted or eliminated as appropriate, based on information collected from other sources (including government and non-profits). One advantage of the establishment-based NETS Database is that all employment, sales, and other activity is reported at the actual facility—not the headquarters.

Unlike government sources of employment data, the NETS database includes sole proprietors, part-time jobs, and farm operations, and has been found to be more accurate in reporting data for small privately-owned firms and public sector employers such as post offices and public schools. Employment from the NETS database is therefore generally higher than many of these other sources. As a base for the 2040 forecasts, DVRPC and county planning staffs reviewed 2000 and 2010 employment data from a NETS database that was acquired in 2013.

In March 2016, DVRPC acquired an updated NETS dataset that included both revised 2010 and 2013 employment data. All corrections made to the previous NETS database by DVRPC and county planning staffs, either during the previous forecasting round or as a result of ongoing DVRPC land

use and transportation studies, were incorporated in to the new database. DVRPC staff reviewed the revised 2010 data and the 2013 data to eliminate any remaining duplicates and correct obvious errors, using resources that included CoStar, company web sites, and on-line business directories. The data was then reviewed by the region's county planning staffs, and further corrections were made based on local knowledge (including errors in location and missing large employers).

The NETS database used by DVRPC includes the street address and the most current latitude-longitude for each establishment as well as the origin and destination latitude-longitudes for all significant moves, at the four-decimal-place-level. In order to assign each employer to a specific municipality, every employer in the NETS database was geocoded. Based on an internal review by DVRPC staff, several spatially inaccurate results were identified, and numerous adjustments were made to improve the accuracy of the dataset before the results were sent to the counties for review. While the counties were reviewing the employment data, DVRPC staff continued to refine the NETS GIS dataset, by comparing TomTom results with other geocoding services, and by manually checking the location of hundreds of significant employers.

2015 Employment Estimates

Estimates of the 2015 employment were then calculated, based on both the changes in NETS employment by sector in each county between 2010 and 2013, and the employment change in each county between 2010 and 2015 released by the BLS in September 2016. The estimated 2015 county employment was allocated to municipalities based on the proportion of the county's employment that was present in each municipality in 2013.

2045 Employment Forecasts

Employment forecasts in five-year increments through 2045 were developed using a similar method as was used in previous forecasting rounds. Various studies and past experience have shown that there is a direct relationship between the number of workers living in a region (which is a function of population) and the number of jobs. To forecast future employment, DVRPC determined an expected future ratio of employment to population for each county, based on the known ratio in 2015. These ratios were applied to the Commission's adopted 2045 population forecasts, to create employment forecasts for each county, in five-year increments through 2045.

County-level employment forecasts between 2020 and 2040 were disaggregated to the municipal level based on the proportion of each county's employment that was expected to be in each municipality by DVRPC's adopted 2040 forecasts, as adjusted by the differences between the Commission's adopted 2015 forecast and the 2015 NETS employment estimates. The proportion of each county's employment expected to be in each municipality in 2045 was forecast based on the linear trend in the proportion from 2015 to 2040. The draft employment forecasts in five-year increments were then reviewed by county planning staffs, and final revisions were made based on their recommendations.

Military employment, which DVRPC staff believes was not accurately reflected in the NETS database, was accounted for by adding the military employment in each municipality reported in the 2006–2010 five-

year CTPP estimates to the 2015 employment estimate and the future employment forecasts. Given the difficulty of forecasting future military employment, the number of military employees was kept stable in future years.

Table 1 summarizes regional and county employment forecasts in five-year increments through 2045, and municipal-level forecasts are provided in Appendix A. Table 2 identifies the 20 municipalities expected to gain the most employees between 2015 and 2045 in absolute numbers, while Table 3 identifies municipalities with the highest forecast percentage change in employment. Figure 1 illustrates the DVRPC region's 2045 municipal employment forecasts, and Figures 2 and 3 illustrate absolute and percent change in employment by municipality between 2015 and 2045.

Figure 4 illustrates the absolute increase in employment per square mile in each of the region's 352 municipalities and 18 City of Philadelphia planning districts. This map highlights not only where employment is increasing, but also the impact of relatively small increases on employment density in many of the region's centers. Employment density is forecast to increase not only in the City of Philadelphia, but also in many of the region's smaller boroughs, including Conshohocken and West Conshohocken boroughs in Montgomery County; Dublin, Penndel, and Ivyland boroughs in Bucks County; and Kennett Square, Phoenixville, and Downingtown boroughs in Chester County.

Highlights include the following:

- The DVRPC region is forecast to gain almost 373,000 jobs between 2015 and 2045 (an increase of almost 12 percent), with much of this growth concentrated in the suburbs.
- The region's five southeastern Pennsylvania counties are forecast to experience a 12.6 percent increase in employment, while employment in the four New Jersey counties is expected to increase by 9.8 percent.
- The largest percent increases are forecast in Gloucester County in New Jersey and Chester County in Pennsylvania, where employment is forecast to increase by 29 and 28 percent, respectively.
- The largest absolute increase in employment is forecast for Chester County, expected to gain 87,800 employees. Other counties forecast to see a significant number of additional employees include Montgomery County (expected to gain almost 82,000 employees) and Philadelphia (with a forecasted increase of almost 64,000 jobs).
- Both Philadelphia and Camden City, New Jersey, are forecast to gain employment, with forecasted percentage increases of 8.3 percent and 10.1 percent, respectively. The region's other two core cities are expected to see their employment stabilize and increase slightly, with a 2.8 percent increase in employment in Trenton, New Jersey, and a 2.6 percent increase in Chester City, Pennsylvania.

Summary

Population and employment forecasts are a critical component of long-range land use and transportation planning. This report presents the method used to develop 2045 and interim year employment forecasts, adopted by the DVRPC Board on October 27, 2016.

Data from the National Establishments Time Series (NETS) database served as the base for the 2045 employment forecasts. In March 2016, DVRPC acquired an updated NETS database that included 2013 employment data and revised 2010 data. The 2010 and 2013 employment data was reviewed and revised by DVRPC staff, utilizing resources that included CoStar, on-line business directories, company websites and, when appropriate, direct telephone calls. The revised data was then sent to the county planning staffs for additional revision. Additionally, during the summer of 2016, DVRPC acquired improved geocoding resources that allowed staff to further correct the spatial locations of employers.

Based on changes in the NETS employment between 2010 and 2013, and changes in employment in each county between 2010 and 2015 as reported by the U.S. Bureau of Labor Statistics (BLS), 2015 employment was estimated by county and municipality. Given that studies have shown that there is a direct relationship between the number of workers living in an area and the number of jobs, employment forecasts were calculated in five-year increments through 2045, by estimating a future ratio of population to employment in each county and applying it to DVRPC's adopted population forecasts.

Employment in the nine-county region is forecast to increase by almost 12 percent between 2015 and 2045, with the greatest absolute increases in employment expected in Chester, Montgomery, and Philadelphia counties and the greatest percentage increases forecast in Gloucester County, New Jersey, and Chester County, Pennsylvania. Together with the 2045 population forecasts adopted by the DVRPC Board in July 2016, these employment forecasts will serve as the basis for DVRPC's planning and modeling activities, and support the region's 2045 long-range plan, scheduled for adoption in July 2017.

Table 1: 2045 Employment Forecasts by County

County	2015 Employment	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Forecasted Absolute Change, 2015-2045	Forecasted Percent Change, 2015-2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	38,393	11.9%
Chester County	309,605	326,320	343,050	359,774	374,967	387,391	397,405	87,800	28.4%
Delaware County	268,054	270,167	272,269	274,401	276,248	277,763	279,050	10,996	4.1%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	81,942	14.1%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	63,978	8.3%
Five Pennsylvania Counties	2,255,680	2,310,874	2,364,147	2,419,171	2,467,523	2,506,728	2,538,789	283,109	12.6%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	22,324	9.3%
Camden County	263,582	265,169	266,753	268,359	269,750	270,892	271,869	8,287	3.1%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	35,304	29.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	23,789	8.3%
Four New Jersey Counties	912,557	930,545	948,431	965,698	979,816	991,943	1,002,261	89,704	9.8%
Nine DVRPC Counties	3,168,237	3,241,419	3,312,578	3,384,869	3,447,339	3,498,671	3,541,050	372,813	11.8%

Source: Delaware Valley Regional Planning Commission, October 2016.

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

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Upper Merion Township/ Montgomery	9,470	11	Plymouth Township/ Montgomery	4,500
2	Horsham Township/ Montgomery	8,660	12	Woolwich Township/ Gloucester	4,338
3	East Whiteland Township/ Chester	7,224	13	Camden City/ Camden	4,206
4	Uwchlan Township/ Chester	6,737	14	West Deptford Township/ Gloucester	3,844
5	Tredyffrin Township/ Chester	6,625	15	West Windsor Township/ Mercer	3,713
6	West Whiteland Township/ Chester	6,259	16	Hopewell Township/ Mercer	3,712
7	West Goshen Township/ Chester	5,459	17	Phoenixville Borough/ Chester	3,621
8	Conshohocken Borough/ Montgomery	5,000	18	Lower Merion Township/ Montgomery	3,500
9	Monroe Township/ Camden	4,999	19	Mt. Laurel Township/ Burlington	3,444
10	Upper Providence Township/ Montgomery	4,520	20	Upper Dublin Township/Bucks	3,400

Source: Delaware Valley Regional Planning Commission, October 2016. Does not include Philadelphia, which is both a county and a municipality.

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

Rank	Municipality/County	Absolute Change	Rank	Municipality/County	Absolute Change
1	Woolwich Township/ Gloucester	164%	11	Parkesburg Borough/ Chester	59%
2	Modena Borough/ Chester	125%	12	West Sadsbury Township/ Chester	58%
3	Elk Township/ Gloucester	92%	13	Mantua Township/ Gloucester	57%
4	Dublin Borough/ Bucks	84%	14	Honey Brook Borough/ Chester	55%
5	Lower Oxford Township/ Chester	82%	15	Conshohocken Borough/ Montgomery	53%
6	West Brandywine Township/ Chester	77%	16	Wallace Township/ Chester	53%
7	Elverson Borough/ Chester	72%	17	Phoenixville Borough/ Chester	53%
8	East Vincent Township/ Chester	68%	18	West Nottingham Township/ Chester	53%
9	Harrison Township/ Gloucester	64%	19	Sellersville Borough/ Bucks	52%
10	South Coventry Township/ Chester	61%	20	Upper Oxford Township/ Chester	52%

Source: Delaware Valley Regional Planning Commission, October, 2016. Does not include Philadelphia, which is both a county and a municipality.

**Figure 1:
2045 Municipal Employment Forecast**

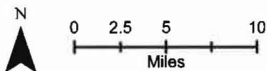
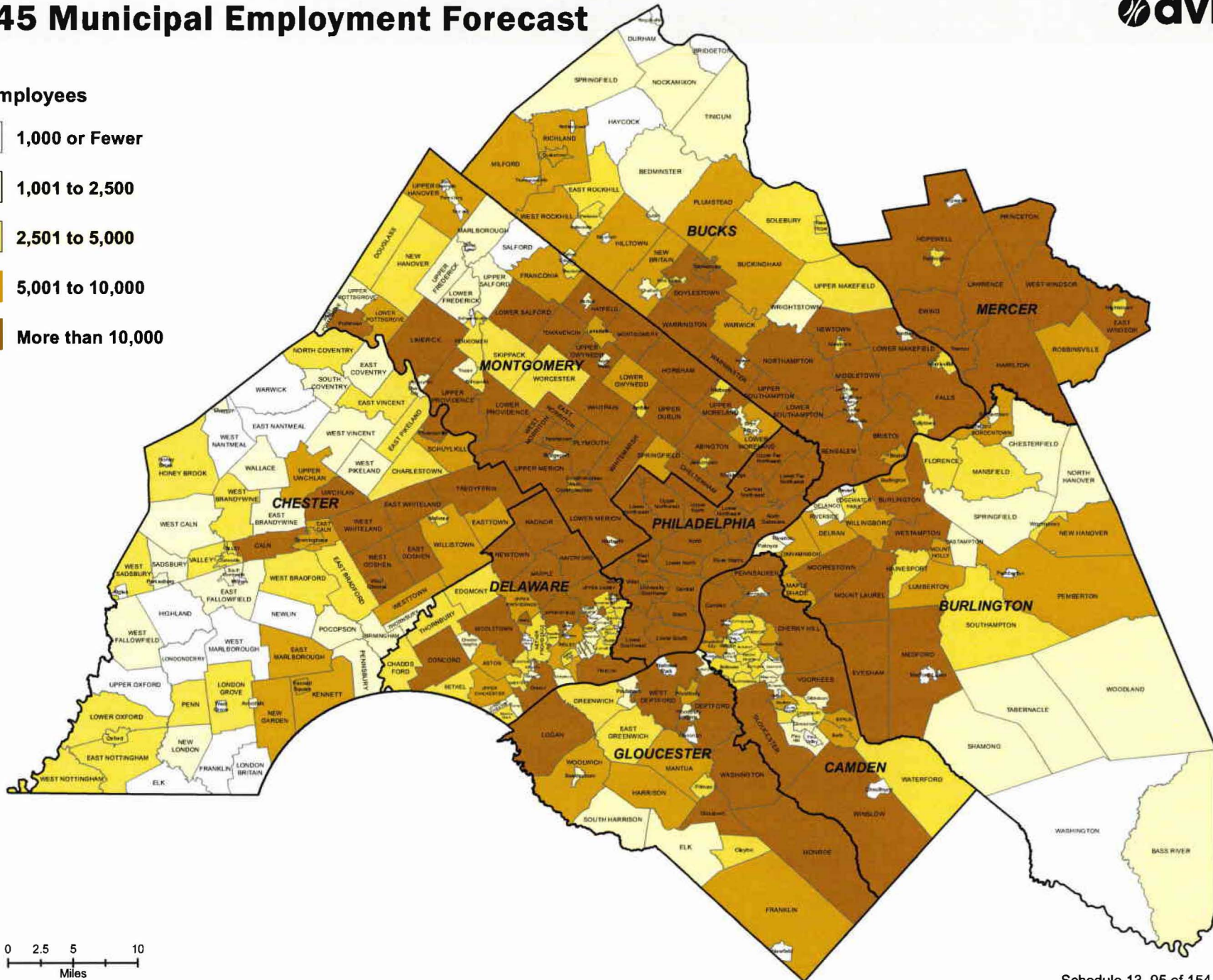
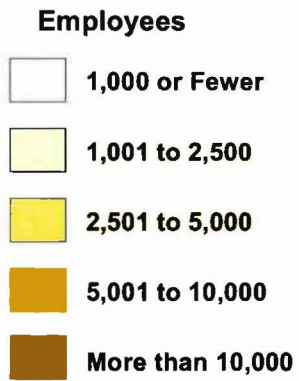


Figure 2:
2045 Municipal Employment Forecast
Absolute Change: 2015–2045

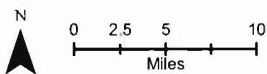
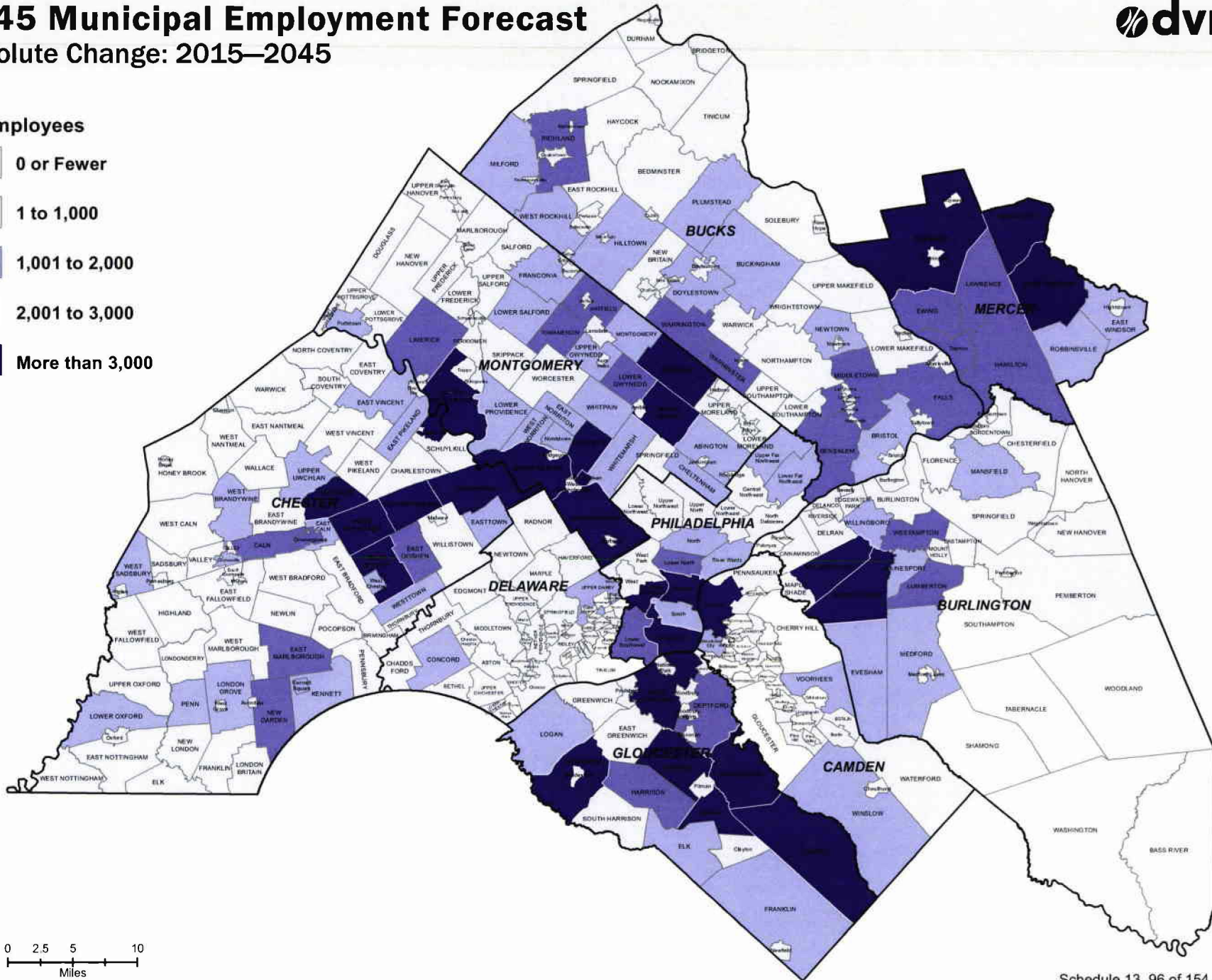
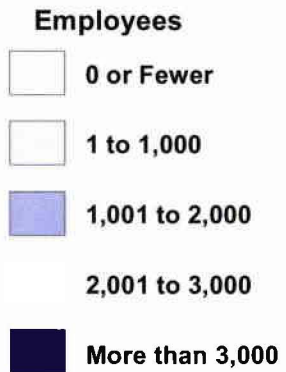






Figure 3:
2045 Municipal Employment Forecast
Percentage Change: 2015–2045

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

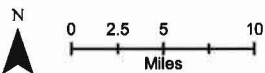
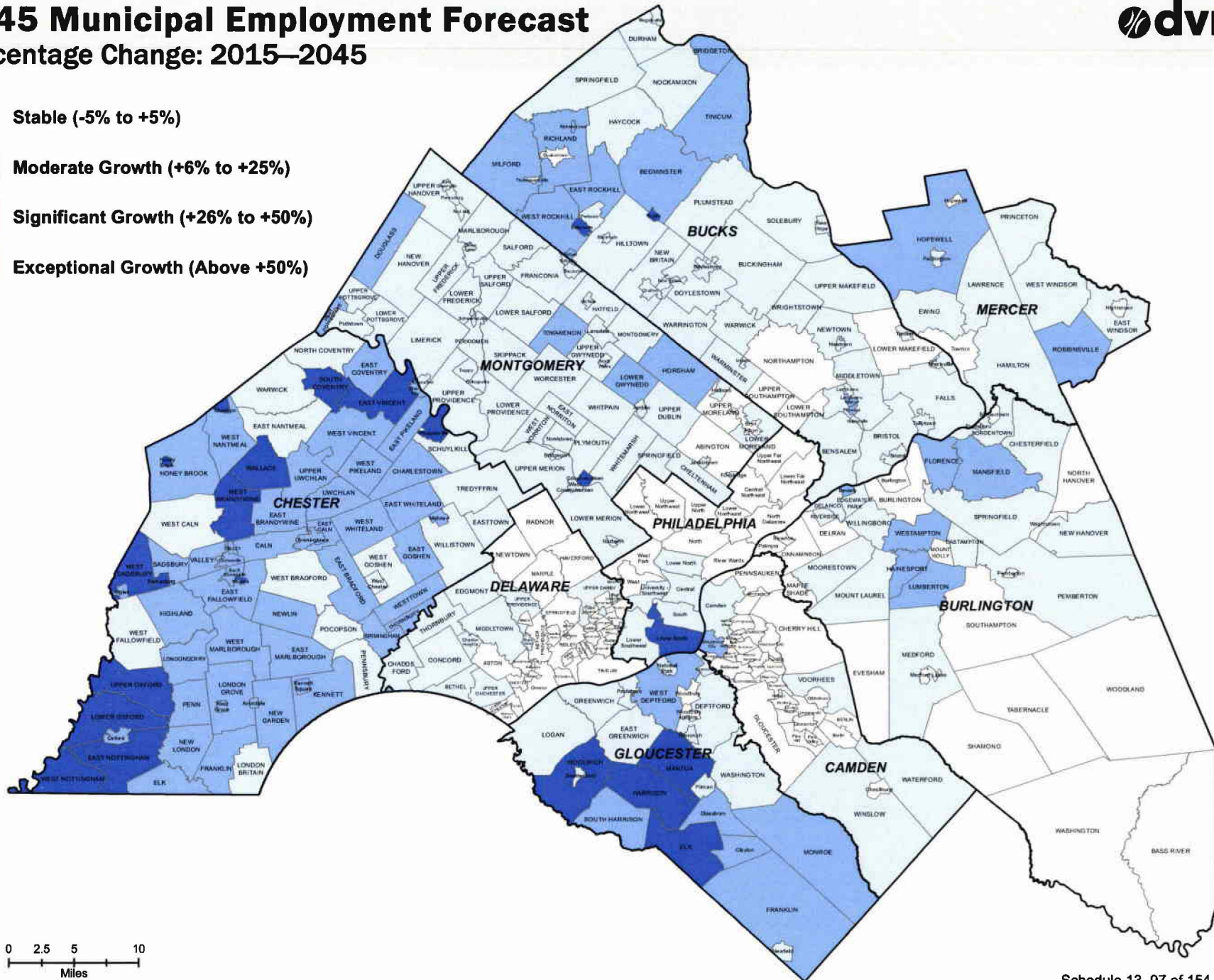
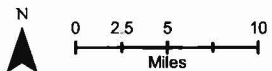
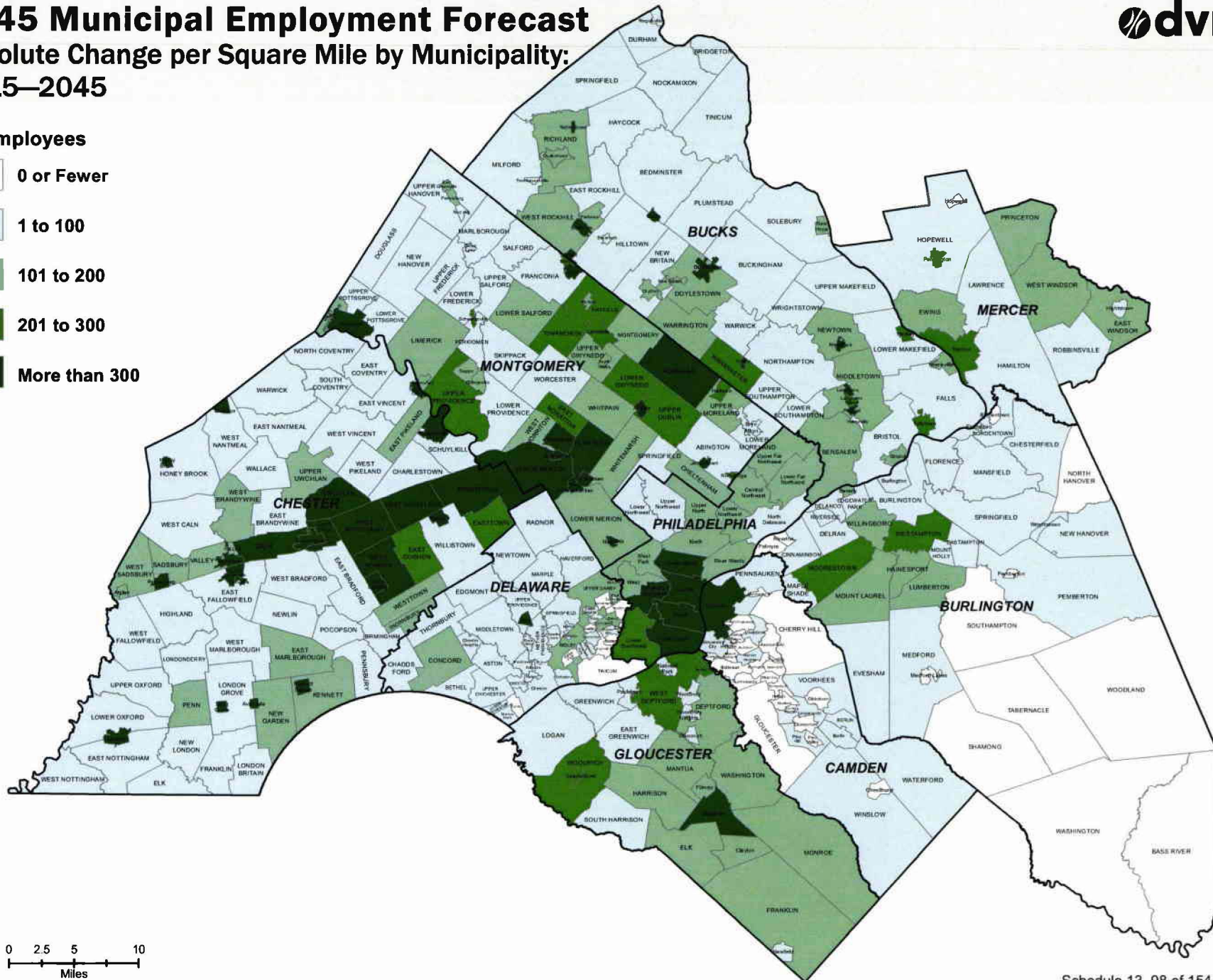
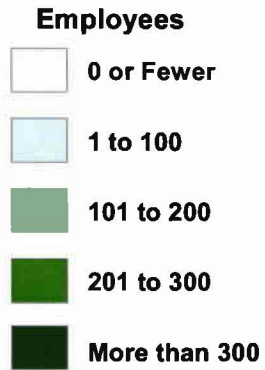


Figure 4:
2045 Municipal Employment Forecast
Absolute Change per Square Mile by Municipality:
2015—2045



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

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Bucks County	322,731	329,645	337,203	344,859	351,310	356,671	361,124	38,393	11.9%
Bedminster Township	1,864	2,018	2,116	2,215	2,260	2,311	2,424	560	30.0%
Bensalem Township	43,829	44,472	44,697	44,952	45,567	46,304	46,023	2,194	5.0%
Bridgeton Township	334	351	368	395	402	419	434	100	29.9%
Bristol Borough	5,111	5,166	5,239	5,315	5,366	5,396	5,415	304	5.9%
Bristol Township	23,168	23,575	23,799	24,037	24,370	24,768	24,740	1,572	6.8%
Buckingham Township	7,609	7,755	8,012	8,271	8,409	8,476	8,667	1,058	13.9%
Chalfont Borough	1,300	1,332	1,393	1,454	1,485	1,499	1,550	250	19.2%
Doylestown Borough	10,480	10,628	10,861	11,097	11,236	11,309	11,438	958	9.1%
Doylestown Township	11,453	11,838	12,071	12,308	12,652	13,030	13,163	1,710	14.9%
Dublin Borough	820	879	926	962	1,225	1,530	1,520	700	85.4%
Durham Township	254	256	257	259	267	276	273	19	7.5%
East Rockhill Township	2,140	2,259	2,335	2,411	2,520	2,636	2,700	560	26.2%
Falls Township	16,290	16,575	17,065	17,558	17,827	17,961	18,302	2,012	12.4%
Haycock Township	486	507	519	532	556	582	590	104	21.4%
Hilltown Township	6,113	6,252	6,509	6,766	6,897	6,959	7,167	1,054	17.2%
Hulmeville Borough	254	262	268	274	282	290	294	40	15.7%
Ivyland Borough	1,671	1,749	1,789	1,830	1,869	1,913	1,948	277	16.6%
Langhorne Borough	1,150	1,176	1,225	1,274	1,299	1,311	1,351	201	17.5%
Langhorne Manor Borough	313	329	364	398	413	420	454	141	45.0%
Lower Makefield Township	11,612	11,717	11,768	11,827	12,007	12,219	12,111	499	4.3%
Lower Southampton Township	13,210	13,289	13,334	13,387	13,457	13,512	13,401	191	1.4%
Middletown Township	24,781	25,116	25,630	26,154	26,465	26,634	26,900	2,119	8.6%
Milford Township	3,753	3,912	4,241	4,567	4,720	4,784	5,100	1,347	35.9%
Morrisville Borough	2,903	2,951	3,033	3,115	3,161	3,184	3,238	335	11.5%
New Britain Borough	3,004	3,046	3,088	3,132	3,176	3,214	3,204	200	6.7%
New Britain Township	5,330	5,453	5,528	5,605	5,791	5,992	5,999	669	12.6%
New Hope Borough	2,854	2,893	2,953	3,015	3,051	3,071	3,102	248	8.7%
Newtown Borough	2,375	2,404	2,426	2,447	2,522	2,604	2,588	213	9.0%
Newtown Township	13,519	13,712	14,016	14,325	14,505	14,601	14,771	1,252	9.3%
Nockamixon Township	1,519	1,580	1,617	1,655	1,733	1,816	1,838	319	21.0%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Northampton Township	14,669	14,801	14,953	15,113	15,233	15,310	15,299	630	4.3%
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%
Caln Township	8,191	8,719	9,294	9,872	10,358	10,761	11,181	2,990	36.5%
Charlestown Township	3,134	3,309	3,483	3,661	3,818	3,947	4,050	916	29.2%
Coatesville City	2,579	2,759	2,958	3,160	3,327	3,465	3,619	1,040	40.3%
Downingtown Borough	6,455	6,798	7,192	7,588	7,910	8,175	8,499	2,044	31.7%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
East Bradford Township	1,844	1,966	2,097	2,229	2,341	2,433	2,527	683	37.0%
East Brandywine Township	1,649	1,777	1,921	2,068	2,187	2,285	2,404	755	45.8%
East Caln Township	4,254	4,474	4,685	4,900	5,096	5,258	5,367	1,113	26.2%
East Coventry Township	1,515	1,618	1,730	1,842	1,937	2,015	2,096	581	38.3%
East Fallowfield Township	911	969	1,029	1,089	1,140	1,186	1,221	310	34.0%
East Goshen Township	8,156	8,597	9,036	9,482	9,877	10,205	10,461	2,305	28.3%
East Marlborough Township	5,264	5,608	6,002	6,399	6,721	6,987	7,308	2,044	38.8%
East Nantmeal Township	821	862	896	931	966	996	999	178	21.7%
East Nottingham Township	1,713	1,854	2,020	2,187	2,320	2,430	2,571	858	50.1%
East Pikeland Township	2,836	3,040	3,268	3,499	3,687	3,845	4,025	1,189	41.9%
Easttown Township	7,006	7,347	7,667	7,992	8,291	8,545	8,694	1,688	24.1%
East Vincent Township	1,867	2,063	2,298	2,306	2,716	2,858	3,129	1,262	67.6%
East Whiteland Township	23,399	24,735	26,117	27,514	28,722	29,730	30,623	7,224	30.9%
Elk Township	266	287	305	324	342	357	363	97	36.5%
Elverson Borough	596	663	746	829	894	947	1,026	430	72.1%
Franklin Township	608	659	715	773	820	859	905	297	48.8%
Highland Township	535	567	594	623	649	674	681	146	27.3%
Honey Brook Borough	389	425	466	507	541	569	602	213	54.8%
Honey Brook Township	2,990	3,164	3,342	3,522	3,678	3,809	3,920	930	31.1%
Kennett Township	5,782	6,112	6,450	6,793	7,092	7,341	7,555	1,773	30.7%
Kennett Square Borough	4,177	4,405	4,632	4,862	5,066	5,239	5,370	1,193	28.6%
London Britain Township	630	665	691	719	747	772	773	143	22.7%
Londonderry Township	488	530	575	621	660	694	729	241	49.4%
London Grove Township	2,535	2,738	2,972	3,208	3,400	3,559	3,755	1,220	48.1%
Lower Oxford Township	1,874	2,096	2,397	2,698	2,918	3,098	3,418	1,544	82.4%
Malvern Borough	2,359	2,500	2,646	2,794	2,921	3,027	3,121	762	32.3%
Modena Borough	124	147	178	207	230	248	279	155	125.0%
New Garden Township	6,534	6,884	7,277	7,673	7,999	8,268	8,578	2,044	31.3%
Newlin Township	271	293	315	336	357	375	387	116	42.8%
New London Township	1,041	1,098	1,155	1,213	1,263	1,306	1,385	344	33.0%
North Coventry Township	3,730	3,896	4,037	4,182	4,323	4,444	4,483	753	20.2%
Oxford Borough	2,156	2,319	2,504	2,691	2,843	2,968	3,118	962	44.6%
Parquesburg Borough	671	734	811	888	948	997	1,065	394	58.7%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Penn Township	2,916	3,084	3,286	3,490	3,649	3,781	3,961	1,045	35.8%
Pennsbury Township	1,395	1,460	1,514	1,568	1,624	1,671	1,680	285	20.4%
Phoenixville Borough	6,835	7,419	8,119	8,823	9,378	9,835	10,456	3,621	53.0%
Pocopson Township	1,030	1,081	1,123	1,165	1,208	1,244	1,252	222	21.6%
Sadsbury Township	1,571	1,692	1,830	1,969	2,083	2,176	2,288	717	45.6%
Schuylkill Township	4,530	4,706	4,840	4,977	5,124	5,197	5,247	717	15.8%
South Coatesville Borough	1,390	1,502	1,629	1,759	1,862	1,949	2,055	665	47.8%
South Coventry Township	1,146	1,257	1,392	1,528	1,633	1,721	1,844	698	60.9%
Spring City Borough	959	1,027	1,100	1,173	1,235	1,287	1,339	380	39.6%
Thornbury Township	1,302	1,384	1,470	1,557	1,631	1,693	1,749	447	34.3%
Tredyffrin Township	55,495	57,323	58,540	59,802	61,270	62,518	62,120	6,625	11.9%
Upper Oxford Township	361	393	428	465	494	519	547	186	51.5%
Upper Uwchlan Township	4,216	4,447	4,677	4,910	5,116	5,288	5,421	1,205	28.6%
Uwchlan Township	14,889	16,014	17,312	18,619	19,674	20,545	21,626	6,737	45.2%
Valley Township	2,085	2,249	2,440	2,633	2,787	2,915	3,074	989	47.4%
Wallace Township	903	981	1,074	1,168	1,242	1,304	1,383	480	53.2%
Warwick Township	614	648	674	701	729	753	754	140	22.8%
West Bradford Township	2,095	2,190	2,269	2,349	2,429	2,497	2,514	419	20.0%
West Brandywine Township	2,088	2,331	2,643	2,955	3,192	3,386	3,694	1,606	76.9%
West Caln Township	1,450	1,523	1,590	1,657	1,721	1,775	1,799	349	24.1%
West Chester Borough	11,440	11,787	11,979	12,181	12,448	12,678	12,510	1,070	9.4%
West Fallowfield Township	958	1,006	1,043	1,082	1,122	1,155	1,159	201	21.0%
West Goshen Township	24,174	25,299	26,334	27,385	28,369	29,189	29,633	5,459	22.6%
West Grove Borough	674	719	763	808	848	881	907	233	34.6%
West Marlborough Township	330	353	371	388	409	424	426	96	29.1%
West Nantmeal Township	647	690	732	775	814	845	870	223	34.5%
West Nottingham Township	1,736	1,884	2,060	2,238	2,378	2,493	2,647	911	52.5%
West Pikeland Township	964	1,029	1,097	1,165	1,225	1,274	1,320	356	36.9%
West Sadsbury Township	2,106	2,300	2,537	2,774	2,959	3,112	3,327	1,221	58.0%
West Vincent Township	1,476	1,552	1,623	1,695	1,759	1,816	1,846	370	25.1%
West Whiteland Township	23,476	24,691	25,883	27,093	28,175	29,076	29,735	6,259	26.7%
Westtown Township	4,257	4,479	4,693	4,910	5,107	5,271	5,383	1,126	26.5%
Willistown Township	7,896	8,118	8,275	8,436	8,616	8,769	8,741	845	10.7%

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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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Norwood Borough	1,140	1,145	1,146	1,146	1,151	1,156	1,152	12	1.1%
Parkside Borough	328	330	332	334	336	337	338	10	3.0%
Prospect Park Borough	1,726	1,736	1,742	1,747	1,756	1,764	1,764	38	2.2%
Radnor Township	25,694	25,861	25,978	26,099	26,239	26,371	26,407	713	2.8%
Ridley Township	2,809	2,814	2,795	2,776	2,777	2,786	2,757	-52	-1.9%
Ridley Park Borough	9,411	9,463	9,483	9,505	9,546	9,591	9,580	169	1.8%
Rose Valley Borough	297	302	310	318	323	326	333	36	12.1%
Rutledge Borough	131	132	132	132	133	133	133	2	1.5%
Sharon Hill Borough	2,985	3,003	3,014	3,026	3,041	3,056	3,058	73	2.4%
Springfield Township	14,177	14,292	14,411	14,532	14,633	14,715	14,791	614	4.3%
Swarthmore Borough	2,660	2,677	2,688	2,700	2,714	2,727	2,730	70	2.6%
Thornbury Township	2,366	2,418	2,514	2,610	2,661	2,687	2,780	414	17.5%
Tinicum Township	12,489	12,531	12,495	12,461	12,488	12,537	12,457	-32	-0.3%
Trainer Borough	1,799	1,799	1,779	1,760	1,757	1,762	1,735	-64	-3.6%
Upland Borough	1,222	1,227	1,228	1,228	1,232	1,237	1,233	11	0.9%
Upper Chichester Township	6,648	6,710	6,786	6,862	6,918	6,959	7,016	368	5.5%
Upper Darby Township	25,058	25,282	25,543	25,806	26,007	26,159	26,346	1,288	5.1%
Upper Providence Township	5,055	5,114	5,198	5,283	5,338	5,373	5,445	390	7.7%
Yeadon Borough	2,782	2,791	2,784	2,776	2,783	2,794	2,776	-6	-0.2%
Montgomery County	582,443	598,434	614,469	629,563	642,996	654,966	664,385	81,942	14.1%
Abington Township	30,656	31,098	31,327	31,512	31,899	32,371	32,156	1,500	4.9%
Ambler Borough	3,185	3,248	3,322	3,392	3,450	3,501	3,537	352	11.1%
Bridgeport Borough	2,180	2,248	2,298	2,345	2,399	2,455	2,480	300	13.8%
Bryn Athyn Borough	1,427	1,440	1,452	1,463	1,474	1,484	1,477	50	3.5%
Cheltenham Township	18,189	18,517	18,725	18,906	19,201	19,546	19,489	1,300	7.1%
Collegeville Borough	2,626	2,668	2,705	2,738	2,775	2,814	2,815	189	7.2%
Conshohocken Borough	9,368	10,531	11,292	12,036	12,854	13,522	14,368	5,000	53.4%
Douglass Township	3,661	3,820	4,038	4,249	4,380	4,431	4,661	1,000	27.3%
East Greenville Borough	651	663	675	687	697	707	711	60	9.2%
East Norriton Township	10,682	10,999	11,317	11,617	11,813	11,880	12,182	1,500	14.0%
Franconia Township	7,630	7,696	8,004	8,297	8,439	8,497	8,745	1,115	14.6%
Green Lane Borough	183	186	187	189	191	193	193	10	5.5%

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Hatboro Borough	3,893	3,978	4,018	4,055	4,125	4,204	4,193	300	7.7%
Hatfield Borough	1,150	1,172	1,190	1,208	1,227	1,248	1,250	100	8.7%
Hatfield Township	17,580	18,120	18,629	19,110	19,533	19,857	20,218	2,638	15.0%
Horsham Township	30,408	31,549	33,538	35,468	36,584	37,907	39,068	8,660	28.5%
Jenkintown Borough	4,597	4,677	4,722	4,761	4,833	4,918	4,897	300	6.5%
Lansdale Borough	7,772	7,952	8,045	8,126	8,254	8,372	8,384	612	7.9%
Limerick Township	11,533	11,874	12,362	12,826	13,324	13,799	14,151	2,618	22.7%
Lower Frederick Township	1,110	1,146	1,178	1,208	1,260	1,320	1,334	224	20.2%
Lower Gwynedd Township	7,006	7,282	7,770	8,244	8,514	8,687	9,125	2,119	30.2%
Lower Merion Township	55,354	56,522	57,038	57,471	58,209	58,915	58,854	3,500	6.3%
Lower Moreland Township	8,085	8,225	8,331	8,424	8,551	8,692	8,685	600	7.4%
Lower Pottsgrove Township	4,670	4,768	4,943	5,109	5,239	5,346	5,470	800	17.1%
Lower Providence Township	12,994	13,230	13,581	13,910	14,129	14,290	14,494	1,500	11.5%
Lower Salford Township	9,663	9,864	10,234	10,586	10,776	10,886	11,163	1,500	15.5%
Marlborough Township	978	991	1,010	1,027	1,051	1,071	1,078	100	10.2%
Montgomery Township	16,097	16,473	16,923	17,343	17,580	17,640	18,012	1,915	11.9%
Narberth Borough	2,039	2,076	2,101	2,122	2,155	2,193	2,189	150	7.4%
New Hanover Township	2,020	2,102	2,198	2,290	2,370	2,435	2,515	495	24.5%
Norristown Borough	14,095	14,558	14,873	15,166	15,560	15,972	16,095	2,000	14.2%
North Wales Borough	1,419	1,443	1,460	1,476	1,498	1,522	1,519	100	7.0%
Pennsburg Borough	1,519	1,552	1,573	1,592	1,617	1,641	1,645	126	8.3%
Perkiomen Township	2,416	2,469	2,537	2,602	2,651	2,693	2,733	317	13.1%
Plymouth Township	23,839	24,550	25,500	26,410	27,090	27,652	28,339	4,500	18.9%
Pottstown Borough	10,757	11,090	11,342	11,578	11,857	12,128	12,257	1,500	13.9%
Red Hill Borough	631	642	654	666	676	685	689	58	9.2%
Rockledge Borough	957	979	996	1,011	1,031	1,054	1,057	100	10.4%
Royersford Borough	1,393	1,419	1,443	1,466	1,489	1,511	1,518	125	9.0%
Salford Township	526	544	564	583	605	627	641	115	21.9%
Schwenksville Borough	418	434	454	474	490	504	518	100	23.9%
Skippack Township	4,197	4,300	4,402	4,496	4,565	4,631	4,697	500	11.9%
Souderton Borough	2,788	2,876	2,972	3,064	3,147	3,227	3,288	500	17.9%
Springfield Township	7,874	8,000	8,084	8,158	8,271	8,399	8,374	500	6.4%
Telford Borough (part)	643	659	684	707	722	734	751	108	16.8%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Towamencin Township	7,548	8,086	8,612	9,125	9,567	9,909	10,421	2,873	38.1%
Trappe Borough	2,144	2,190	2,248	2,303	2,345	2,381	2,414	270	12.6%
Upper Dublin Township	21,566	22,207	22,864	23,485	24,048	24,546	24,966	3,400	15.8%
Upper Frederick Township	871	899	930	960	998	1,037	1,056	185	21.2%
Upper Gwynedd Township	25,099	25,428	25,751	26,036	26,324	26,607	26,599	1,500	6.0%
Upper Hanover Township	4,221	4,395	4,541	4,680	4,831	4,957	5,078	857	20.3%
Upper Merion Township	57,038	59,232	60,940	62,559	64,072	65,430	66,508	9,470	16.6%
Upper Moreland Township	18,160	18,395	18,536	18,650	18,853	19,092	18,977	817	4.5%
Upper Pottsgrove Township	1,161	1,186	1,227	1,264	1,301	1,335	1,361	200	17.2%
Upper Providence Township	22,276	23,028	24,014	24,960	25,575	25,947	26,796	4,520	20.3%
Upper Salford Township	1,273	1,303	1,338	1,371	1,407	1,442	1,462	189	14.8%
West Conshohocken Borough	5,836	5,978	6,180	6,371	6,506	6,612	6,748	912	15.6%
West Norriton Township	9,363	9,557	9,802	10,031	10,212	10,367	10,499	1,136	12.1%
West Pottsgrove Township	1,476	1,530	1,622	1,711	1,764	1,798	1,879	403	27.3%
Whitemarsh Township	20,727	21,090	21,343	21,565	21,894	22,235	22,227	1,500	7.2%
Whitpain Township	19,871	20,231	20,641	21,020	21,350	21,653	21,819	1,948	9.8%
Worcester Township	2,954	3,069	3,189	3,304	3,394	3,457	3,560	606	20.5%
Philadelphia County	772,847	786,308	797,156	810,574	822,002	829,937	836,825	63,978	8.3%
Central	277,884	280,877	283,540	287,458	289,839	291,941	294,586	16,702	6.0%
South	32,348	32,823	33,052	33,584	33,897	34,118	34,233	1,885	5.8%
Lower South	19,366	22,053	25,327	28,043	30,830	33,279	35,111	15,745	81.3%
Lower Southwest	21,287	21,570	22,013	22,546	22,943	23,231	23,518	2,231	10.5%
University/Southwest	81,863	84,881	86,678	89,222	91,692	92,487	94,866	13,003	15.9%
West	14,073	14,203	14,299	14,439	14,598	14,699	14,774	701	5.0%
West Park	17,141	17,404	17,509	17,692	17,785	17,928	17,987	846	4.9%
Lower North	27,134	27,582	28,096	28,441	28,963	29,335	29,204	2,070	7.6%
River Wards	23,154	23,578	23,698	23,934	24,224	24,485	24,249	1,095	4.7%
North	41,243	41,508	41,777	42,342	42,647	42,878	42,941	1,698	4.1%
Lower Northwest	18,212	18,475	18,586	18,710	18,889	19,048	19,008	796	4.4%
Upper Northwest	25,673	25,928	26,010	26,217	26,435	26,540	26,478	805	3.1%
Upper North	33,741	34,068	34,214	34,353	34,589	34,656	34,655	914	2.7%
Lower Northeast	27,338	27,591	27,740	27,958	28,086	28,125	28,124	786	2.9%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Central Northeast	22,546	22,843	23,015	23,244	23,395	23,498	23,473	927	4.1%
North Delaware	23,938	24,269	24,330	24,557	24,692	24,819	24,807	869	3.6%
Lower Far Northeast	31,433	31,835	32,080	32,378	32,667	32,893	32,853	1,420	4.5%
Upper Far Northeast	34,473	34,820	35,192	35,456	35,831	35,977	35,958	1,485	4.3%
Burlington County	241,298	246,351	251,368	255,562	258,363	261,195	263,622	22,324	9.3%
Bass River Township	1,556	1,572	1,566	1,556	1,558	1,571	1,544	-12	-0.8%
Beverly City	400	417	446	472	485	493	519	119	29.8%
Bordentown City	1,437	1,452	1,447	1,439	1,441	1,451	1,428	-9	-0.6%
Bordentown Township	5,424	5,530	5,624	5,703	5,760	5,824	5,858	434	8.0%
Burlington City	5,162	5,229	5,237	5,231	5,251	5,298	5,242	80	1.5%
Burlington Township	17,266	17,584	17,772	17,879	17,949	18,054	18,013	747	4.3%
Chesterfield Township	1,770	1,800	1,819	1,833	1,846	1,865	1,863	93	5.3%
Cinnaminson Township	9,862	9,981	9,978	9,949	9,979	10,064	9,938	76	0.8%
Delanco Township	1,193	1,234	1,296	1,353	1,383	1,403	1,455	262	22.0%
Delran Township	7,181	7,263	7,249	7,217	7,234	7,295	7,190	9	0.1%
Eastampton Township	949	980	1,027	1,070	1,092	1,109	1,147	198	20.9%
Edgewater Park Township	2,738	2,795	2,849	2,896	2,928	2,961	2,985	247	9.0%
Evesham Township	27,494	27,914	28,117	28,240	28,412	28,688	28,559	1,065	3.9%
Fieldsboro Borough	87	88	89	91	91	92	92	5	5.7%
Florence Township	3,424	3,650	3,889	4,017	4,112	4,190	4,297	873	25.5%
Hainesport Township	3,128	3,287	3,567	3,834	3,962	4,037	4,299	1,171	37.4%
Lumberton Township	6,605	6,926	7,488	8,022	8,279	8,433	8,954	2,349	35.6%
Mansfield Township	2,794	2,935	3,186	3,422	3,537	3,604	3,838	1,044	37.4%
Maple Shade Township	6,792	6,875	6,877	6,860	6,881	6,942	6,858	66	1.0%
Medford Lakes Borough	800	808	805	800	800	807	793	-7	-0.9%
Medford Township	11,762	11,938	12,189	12,416	12,559	12,653	12,855	1,093	9.3%
Moorestown Township	30,721	31,403	32,129	32,756	33,157	33,552	33,945	3,224	10.5%
Mount Holly Township	7,793	7,890	7,894	7,877	7,904	7,972	7,879	86	1.1%
Mount Laurel Township	37,270	38,050	38,815	39,464	39,903	40,362	40,714	3,444	9.2%
New Hanover Township	4,627	4,707	4,791	4,874	4,957	5,040	5,127	500	10.8%
North Hanover Township	1,451	1,455	1,437	1,429	1,422	1,416	1,401	-50	-3.4%
Palmyra Borough	2,008	2,021	1,994	1,963	1,957	1,971	1,916	-92	-4.6%

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

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
Hi-Nella Borough	201	201	201	201	201	202	201	0	0.0%
Laurel Springs Borough	468	468	465	463	463	464	460	-8	-1.7%
Lawnside Borough	1,916	1,911	1,894	1,877	1,872	1,874	1,850	-66	-3.4%
Lindenwold Borough	3,140	3,147	3,152	3,158	3,163	3,172	3,168	28	0.9%
Magnolia Borough	1,064	1,063	1,058	1,052	1,051	1,053	1,043	-21	-2.0%
Merchantville Borough	1,408	1,409	1,406	1,404	1,404	1,407	1,400	-8	-0.6%
Mount Ephraim Borough	1,137	1,137	1,133	1,129	1,128	1,131	1,123	-14	-1.2%
Oaklyn Borough	991	990	986	981	980	982	974	-17	-1.7%
Pennsauken Township	25,712	25,798	25,799	25,816	25,889	26,018	25,945	233	0.9%
Pine Hill Borough	1,618	1,625	1,627	1,629	1,634	1,643	1,640	22	1.4%
Pine Valley Borough	185	185	185	184	184	184	183	-2	-1.1%
Runnemede Borough	3,101	3,099	3,084	3,070	3,066	3,072	3,047	-54	-1.7%
Somerdale Borough	2,376	2,377	2,375	2,372	2,373	2,378	2,367	-9	-0.4%
Stratford Borough	6,353	6,354	6,335	6,318	6,315	6,329	6,289	-64	-1.0%
Tavistock Borough	50	50	50	50	50	50	50	0	0.0%
Voorhees Township	20,328	20,474	20,749	21,028	21,161	21,258	21,479	1,151	5.7%
Waterford Township	3,606	3,637	3,698	3,760	3,789	3,808	3,860	254	7.0%
Winslow Township	10,976	11,147	11,510	11,875	12,038	12,124	12,466	1,490	13.6%
Woodlynne Borough	406	406	406	406	406	407	406	0	0.0%
Gloucester County	121,382	128,161	134,902	141,752	147,682	152,554	156,686	35,304	29.1%
Clayton Borough	2,236	2,380	2,549	2,718	2,847	2,947	3,076	840	37.6%
Deptford Township	14,845	15,536	16,047	16,583	17,165	17,692	17,824	2,979	20.1%
East Greenwich Township	2,593	2,718	2,817	2,920	3,027	3,121	3,155	562	21.7%
Elk Township	1,106	1,240	1,465	1,684	1,813	1,894	2,126	1,020	92.2%
Franklin Township	4,372	4,642	4,944	5,247	5,488	5,676	5,895	1,523	34.8%
Glassboro Borough	7,359	7,860	8,475	9,089	9,543	9,883	10,380	3,021	41.1%
Greenwich Township	2,436	2,516	2,524	2,539	2,600	2,670	2,601	165	6.8%
Harrison Township	3,492	3,812	4,291	4,762	5,063	5,266	5,724	2,232	63.9%
Logan Township	9,726	10,183	10,529	10,892	11,277	11,624	11,726	2,000	20.6%
Mantua Township	5,333	5,786	6,436	7,078	7,501	7,792	8,396	3,063	57.4%

County / Municipality	2015 Employment Estimate	2020 Employment Forecast	2025 Employment Forecast	2030 Employment Forecast	2035 Employment Forecast	2040 Employment Forecast	2045 Employment Forecast	Absolute Change, 2015-2045	Percentage Change 2015-2045
Monroe Township	11,219	12,024	13,054	14,078	14,812	15,352	16,218	4,999	44.6%
National Park Borough	430	445	448	453	464	477	467	37	8.6%
Newfield Borough	441	456	457	460	471	484	472	31	7.0%
Paulsboro Borough	1,707	1,760	1,760	1,765	1,804	1,852	1,796	89	5.2%
Pitman Borough	2,481	2,590	2,659	2,733	2,823	2,908	2,911	430	17.3%
South Harrison Township	1,000	1,066	1,143	1,221	1,280	1,324	1,385	385	38.5%
Swedesboro Borough	1,618	1,681	1,708	1,740	1,790	1,841	1,822	204	12.6%
Washington Township	19,175	19,988	20,465	20,982	21,650	22,291	22,242	3,067	16.0%
Wenonah Borough	520	541	553	565	582	599	596	76	14.6%
West Deptford Township	13,690	14,441	15,169	15,910	16,564	17,107	17,534	3,844	28.1%
Westville Borough	1,784	1,860	1,904	1,953	2,015	2,075	2,070	286	16.0%
Woodbury City	9,289	9,538	9,440	9,372	9,545	9,783	9,366	77	0.8%
Woodbury Heights Borough	1,887	1,940	1,925	1,915	1,953	2,002	1,923	36	1.9%
Woolwich Township	2,643	3,158	4,140	5,093	5,605	5,894	6,981	4,338	164.1%
Mercer County	286,295	290,864	295,408	300,025	304,021	307,302	310,084	23,789	8.3%
East Windsor Township	17,414	17,737	18,170	18,607	18,858	19,015	19,359	1,945	11.2%
Ewing Township	22,150	22,877	23,322	23,772	24,047	24,230	24,680	2,530	11.4%
Hamilton Township	49,812	50,303	50,848	51,406	51,824	52,157	52,345	2,533	5.1%
Hightstown Borough	2,775	2,796	2,812	2,828	2,846	2,862	2,857	82	3.0%
Hopewell Borough	982	990	987	984	986	990	980	-2	-0.2%
Hopewell Township	14,696	14,797	15,282	15,771	17,012	18,290	18,408	3,712	25.3%
Lawrence Township	28,005	28,973	29,178	29,392	29,586	29,760	30,015	2,010	7.2%
Pennington Borough	2,412	2,449	2,502	2,555	2,587	2,608	2,646	234	9.7%
Princeton	26,211	27,014	27,617	28,227	28,585	28,815	29,399	3,188	12.2%
Robbinsville	6,542	6,815	7,186	7,558	7,743	7,836	8,212	1,670	25.5%
Trenton City	78,922	79,280	79,783	80,307	80,812	81,280	81,096	2,174	2.8%
West Windsor Township	36,374	36,833	37,721	38,618	39,135	39,459	40,087	3,713	10.2%

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

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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.

Delaware Valley Regional Planning Commission
190 North Independence Mall West
8th Floor
Philadelphia, PA 19106-1520

Phone: 215-592-1800
Fax: 215-592-9125
Internet: www.dvrpc.org

Staff contact: Mary E. Bell
Manager, Demographic and Economic Analysis
Email: mbell@dvrpc.org



190 N. Independence Mall West
Philadelphia, PA 19106-1520
215.592.1800
www.dvrpc.org

Staff Contact:

Mary E. Bell
Manager, Demographic and Economic Analysis
mbell@dvrpc.org



Legal Company Name	Enterprise Value	Sales-Net 12MM	EBITDA 12MM	EBIT 12MM	PP&E Total Gross-Qtly	PP&E- Total Net-Qtly	Invested Capital- Total Qty	Enterprise value to Gross PPE	Enterprise value to Net PPE	Enterprise value to Inv Cap	Enterprise value to Sales x	Enterprise value to EBITDA x	Enterprise value to EBIT x	Enterprise value to Population	Enterprise value to Customers	population	Customers	EBIT 2 AV	TAX RATE	
American S	2061.5671	439.40198	153.82298	114.50798	1686.0378	1128.5879	811.6958	1.2227289	1.8266784	2.3189058	4.6917566	13.402205	18.003698	2061.5671	7259.1159	1000000	283997	VL 4-15-16	13.620528	36.442241
American W	19668.297	3282.595	1526.3589	1063.8549	18178	13361	11091	1.0819835	1.4720677	1.626151	5.9916916	12.885762	18.487763	1625.4791	6046.7769	12100000	3252691	2015 10-K	9.0028142	38.829541
Aqua Amer	7182.3824	820.14301	457.64299	328.23802	6386.4414	4901.4844	3558.6931	1.1246298	1.4653484	1.9462024	8.7574756	15.694291	21.881628	2484.5657	7803.7056	2890800	920381	web site	9.1794046	5.6687222
Artesian Re	398.91121	78.421982	34.876	25.801002	533.74902	423.84888	238.476	0.747376	0.9411638	1.6302585	5.086727	11.437986	15.461075	1325.2864	4900.6291	301000	81400	S&P Buss I	10.474634	39.284275
California V	2223.5301	596.866	155.67096	92.532969	2667.634	1817.751	1207.5479	0.8335214	1.2232314	1.7497394	3.7253423	14.283526	24.029599	1389.7063	4373.5496	1600000	508404	VL 4-15-16	7.4993887	36.575275
Connecticut	839.62088	98.026962	43.294	29.742002	793.06982	583.78882	438.54688	1.0586973	1.4382271	1.8123914	8.5652035	19.39347	28.23014	2099.0522	6791.236	400000	123633	S&P Buss I	6.8514804	2.4989195
Middlesex \	851.02969	132.02296	53.896987	41.246988	640.26001	506.9668	351.51001	1.3291939	1.6786695	2.2923112	6.4460732	15.789931	20.632529	2182.1274	7827.7198	390000	108720	2015 10-K	11.495922	34.260527
SJW Corp.	1567.147	348.01299	152.09198	108.41198	1693.498	1176.1838	775.83691	0.9253905	1.3323997	1.8409065	4.5031278	10.303942	14.455478	1439.0697	6502.6845	1089000	241000	VL 4-15-16	13.348126	39.482419
York Water	568.96521	47.315999	29.171	22.815001	334.83691	266.16577	198.203	1.6992309	2.1376348	2.8698367	12.024796	19.504481	24.938206	2932.8104	8620.6851	194000	66000	VL 4-15-16	11.637998	28.452098
	1567.147	348.01299	152.09198	92.532969	1686.0378	1128.5879	775.83691	1.0819835	1.4653484	1.8409065	5.9916916	14.283526	20.632529	2061.5671	6791.236	1000000	241000		10.474634	36.442241

Pennsylvania Municipalities, Total Decennial Population, 2010 & 2000

Prepared by The Pennsylvania State Data Center

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

March 9, 2011

2010 State, County & Munic. FIPS Code	Geographic Area	Census: April 1, 2010			Census: April 1, 2000			Change: 2000 to 2010			
		Number	Percent Share of State Total	Munic. Pop. Rank	Number	Percent Share of State Total	Munic. Pop. Rank	Number	Munic. Rank	Percent	Munic. Rank
4200000000	Pennsylvania	12,702,379	100.0%	-	12,281,054	100.0%	-	421,325	-	3.4%	-
4209100000	Montgomery County	799,874	6.3%	-	750,097	6.1%	-	49,777	-	6.6%	-
4209143312	Limerick township	18,074	0.1%	107	13,534	0.1%	156	4,540	16	33.5%	89

	SBB1	SBB1				
Equity Risk Premium	7.00	7.00				
Beta (Value Line Med.)	0.70	0.70				
Risk Adjusted Equity Premium	4.90	4.90				
Yield (RF)	3.06	3.06				
Size Premium	1.80	0.00				
	9.76	7.96				
						High 9.76
						Low 7.96

VL Beta - 10/15/16

0.70

12.07 Total Return SBB1 1926-2014
5.07 Income Return SBB1 1926-2014

3.06 30-yr T-bond

	Recent Market Value (Mill \$)	Market Quartile Name	Market Quartile	Quartile Size Premium	Value Line Beta
American States Water Co	1,666.13	Low-Cap	3	1.8	0.7
American Water Works Co Inc	13,314.19	Large-Cap	1	0	0.65
Aqua America Inc	5,405.02	Mid-Cap	2	1.07	0.7
Artesian Resources -CI A	259.89	Mico-Cap	4	3.74	0.69
California Water Service Gp	1,539.39	Low-Cap	3	1.8	0.75
Connecticut Water Svc Inc	547.73	Mico-Cap	4	3.74	0.6
Middlesex Water Co	573.71	Low-Cap	3	1.8	0.7
SJW Corp	892.91	Low-Cap	3	1.8	0.7
York Water Co	381.72	Mico-Cap	4	3.74	0.7
Average	2,731.19	Low-Cap	3	1.8	0.69
Median	892.91	Low-Cap	3	1.8	0.7

Limerick township,
Montgomery County,

People	Pennsylvania	Pennsylvania	UNITED STATES
<i>Population</i>			
Population estimates, July 1, 2016, (V2016)	12784227	NA	323127513
Population estimates, July 1, 2015, (V2015)	12802503	18798	321418820
Population estimates base, April 1, 2010, (V2016)	12702857	NA	308758105
Population estimates base, April 1, 2010, (V2015)	12702887	18074	308758105
Population, percent change - April 1, 2010 (estimates base) to	0.6	NA	4.7
Population, percent change - April 1, 2010 (estimates base) to	0.8	4.0	4.1
Population, Census, April 1, 2010	12702379	18074	308745538
<i>Age and Sex</i>			
Persons under 5 years, percent, July 1, 2015, (V2015)	5.6	X	6.2
Persons under 5 years, percent, April 1, 2010	5.7	6.7	6.5
Persons under 18 years, percent, July 1, 2015, (V2015)	21.0	X	22.9
Persons under 18 years, percent, April 1, 2010	22.0	26.7	24.0
Persons 65 years and over, percent, July 1, 2015, (V2015)	17.0	X	14.9
Persons 65 years and over, percent, April 1, 2010	15.4	11.4	13.0
Female persons, percent, July 1, 2015, (V2015)	51.1	X	50.8
Female persons, percent, April 1, 2010	51.3	51.4	50.8
<i>Race and Hispanic Origin</i>			
White alone, percent, July 1, 2015, (V2015) (a)	82.6	X	77.1
White alone, percent, April 1, 2010 (a)	81.9	91.5	72.4
Black or African American alone, percent, July 1, 2015, (V2015)	11.7	X	13.3
Black or African American alone, percent, April 1, 2010 (a)	10.8	3.4	12.6
American Indian and Alaska Native alone, percent, July 1, 2015	0.4	X	1.2
American Indian and Alaska Native alone, percent, April 1, 2010	0.2	0.1	0.9
Asian alone, percent, July 1, 2015, (V2015) (a)	3.4 X		5.6
Asian alone, percent, April 1, 2010 (a)	2.7	3.2	4.8
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2015	0.1 X		0.2
Native Hawaiian and Other Pacific Islander alone, percent, April 1, 2010	Z		0.2
Two or More Races, percent, July 1, 2015, (V2015)	1.9 X		2.6
Two or More Races, percent, April 1, 2010	1.9	1.3	2.9
Hispanic or Latino, percent, July 1, 2015, (V2015) (b)	6.8 X		17.6
Hispanic or Latino, percent, April 1, 2010 (b)	5.7	1.8	16.3
White alone, not Hispanic or Latino, percent, July 1, 2015, (V2015)	77.4 X		61.6
White alone, not Hispanic or Latino, percent, April 1, 2010	79.5	90.3	63.7
<i>Population Characteristics</i>			
Veterans, 2011-2015	870770	1265	20108332
Foreign born persons, percent, 2011-2015	6.3	6.9	13.2
<i>Housing</i>			
Housing units, July 1, 2015, (V2015)	5602813	X	134789944
Housing units, April 1, 2010	5567315	7199	131704730
Owner-occupied housing unit rate, 2011-2015	69.2	78.6	63.9
Median value of owner-occupied housing units, 2011-2015	166000	281400	178600
Median selected monthly owner costs -with a mortgage, 2011-2015	1425	2016	1492
Median selected monthly owner costs -without a mortgage, 2011-2015	498	713	458
Median gross rent, 2011-2015	840	1278	928
Building permits, 2015	22854	X	1182582
<i>Families and Living Arrangements</i>			
Households, 2011-2015	4958859	7037	116926305
Persons per household, 2011-2015	2.49	2.64	2.64
Living in same house 1 year ago, percent of persons age 1 year and over, 2011-2015	88.0	92.2	85.1
Language other than English spoken at home, percent of persons age 5 years and over, 2011-2015	10.6	6.9	21.0
<i>Education</i>			
High school graduate or higher, percent of persons age 25 years and over, 2011-2015	89.2	95.4	86.7
Bachelor's degree or higher, percent of persons age 25 years and over, 2011-2015	28.6	43.9	29.8
<i>Health</i>			
With a disability, under age 65 years, percent, 2011-2015	9.5	4.3	8.6
Persons without health insurance, under age 65 years, percent, 2011-2015	7.5	4.4	10.5
<i>Economy</i>			
In civilian labor force, total, percent of population age 16 years and over, 2011-2015	62.8	73.0	63.3
In civilian labor force, female, percent of population age 16 years and over, 2011-2015	58.3	68.7	58.5
Total accommodation and food services sales, 2012 (\$1,000) (c)	23504192	51165	708138598
Total health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	96329248	D	2040441203
Total manufacturers shipments, 2012 (\$1,000) (c)	231396178	688021	5696729632
Total merchant wholesaler sales, 2012 (\$1,000) (c)	191170147	D	5208023478
Total retail sales, 2012 (\$1,000) (c)	178794945	855981	4219821871
Total retail sales per capita, 2012 (c)	14008	46292	13443
<i>Transportation</i>			
Mean travel time to work (minutes), workers age 16 years and over, 2011-2015	26.3	29.3	25.9
<i>Income and Poverty</i>			

Limerick township,
Montgomery County,

People	Pennsylvania		UNITED STATES
	Pennsylvania	Pennsylvania	UNITED STATES
Median household income (in 2015 dollars), 2011-2015	53599	87863	53889
Per capita income in past 12 months (in 2015 dollars), 2011-2015	29291	38117	28930
Persons in poverty, percent	13.2	3.2	13.5
Businesses	Pennsylvania		UNITED STATES
	Pennsylvania	Montgomery County, Pennsylvania	UNITED STATES
Total employer establishments, 2014	298297(1)	X	7563085
Total employment, 2014	5255409(1)	X	121079879
Total annual payroll, 2014 (\$1,000)	248560941(1)	X	5940442637
Total employment, percent change, 2013-2014	1.4(1)	X	2.4
Total nonemployer establishments, 2014	799663	X	23836937
All firms, 2012	975453	1714	27626360
Men-owned firms, 2012	579400	980	14844597
Women-owned firms, 2012	304803	421	9878397
Minority-owned firms, 2012	131512	209	7952386
Nonminority-owned firms, 2012	818858	1368	18987918
Veteran-owned firms, 2012	97969	180	2521682
Nonveteran-owned firms, 2012	837792	1397	24070685
Geography	Pennsylvania		UNITED STATES
	Pennsylvania	Montgomery County, Pennsylvania	UNITED STATES
Population per square mile, 2010	283.9	803	87.4
Land area in square miles, 2010	44742.7	22.51	3531905.43
FIPS Code	"42"	"4209143312"	"00"

This geographic level of poverty and health estimates are not comparable to other geographic levels of these estimates

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences

The vintage year (e.g., V2015) refers to the final year of the series (2010 thru 2015). Different vintage years of estimates are

(1) Includes data not distributed by county.

(a) Includes persons reporting only one race

(b) Hispanics may be of any race, so also are included in applicable race categories

(c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

D: Suppressed to avoid disclosure of confidential information

F: Fewer than 25 firms

FN: Footnote on this item in place of data

NA: Not available

S: Suppressed; does not meet publication standards

X: Not applicable

Z: Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, C

<https://www.census.gov/quickfacts/table/PST045216/42,4209143312,00>

Welcome to QuickFacts

Limerick township, Montgomery County, Pennsylvania


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QuickFacts provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more.

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QuickFacts

People	Montgomery County, Pennsylvania
Population	
Population estimates, July 1, 2015, (V2016)	NA
Population estimates, July 1, 2015, (V2015)	18,798
Population estimates base, April 1, 2010, (V2016)	NA
Population estimates base, April 1, 2010, (V2015)	18,074
Population, percent change - April 1, 2010 (estimates base) to July 1, 2015, (V2016)	NA
Population, percent change - April 1, 2010 (estimates base) to July 1, 2015, (V2015)	4.00%
Population, Census, April 1, 2010	18,074
Age and Sex	
Persons under 5 years, percent, July 1, 2015, (V2015)	X
Persons under 5 years, percent, April 1, 2010	6.70%
Persons under 18 years, percent, July 1, 2015, (V2015)	X
Persons under 18 years, percent, April 1, 2010	26.70%
Persons 65 years and over, percent, July 1, 2015, (V2015)	X
Persons 65 years and over, percent, April 1, 2010	11.40%
Female persons, percent, July 1, 2015, (V2015)	X
Female persons, percent, April 1, 2010	51.40%
Race and Hispanic Origin	
White alone, percent, July 1, 2015, (V2015) (a)	X
White alone, percent, April 1, 2010 (a)	91.50%
Black or African American alone, percent, July 1, 2015, (V2015) (a)	X
Black or African American alone, percent, April 1, 2010 (a)	3.40%
American Indian and Alaska Native alone, percent, July 1, 2015, (V2015) (a)	X
American Indian and Alaska Native alone, percent, April 1, 2010 (a)	0.10%
Asian alone, percent, July 1, 2015, (V2015) (a)	X
Asian alone, percent, April 1, 2010 (a)	3.20%
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2015, (V2015) (a)	X
Native Hawaiian and Other Pacific Islander alone, percent, April 1, 2010 (a)	Z
Two or More Races, percent, July 1, 2015, (V2015)	X
Two or More Races, percent, April 1, 2010	1.30%
Hispanic or Latino, percent, July 1, 2015, (V2015) (b)	X
Hispanic or Latino, percent, April 1, 2010 (b)	1.80%
White alone, not Hispanic or Latino, percent, July 1, 2015, (V2015)	X
White alone, not Hispanic or Latino, percent, April 1, 2010	90.30%
Population Characteristics	
Veterans, 2011-2015	1,265
Foreign born persons, percent, 2011-2015	6.90%
Housing	
Housing units, July 1, 2015, (V2015)	X
Housing units, April 1, 2010	7,199
Owner-occupied housing unit rate, 2011-2015	78.60%
Median value of owner-occupied housing units, 2011-2015	\$281,400
Median selected monthly owner costs -with a mortgage, 2011-2015	\$2,016
Median selected monthly owner costs -without a mortgage, 2011-2015	\$713
Median gross rent, 2011-2015	\$1,278
Building permits, 2015	X
Families and Living Arrangements	
Households, 2011-2015	7,037
Persons per household, 2011-2015	2.64
Living in same house 1 year ago, percent of persons age 1 year+, 2011-2015	92.20%
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	6.90%
Education	
High school graduate or higher, percent of persons age 25 years+, 2011-2015	95.40%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	43.90%
Health	
With a disability, under age 65 years, percent, 2011-2015	4.30%
Persons without health insurance, under age 65 years, percent	 4.4%
Economy	

Welcome to QuickFacts

Limerick township, Montgomery County, Pennsylvania

In civilian labor force, total, percent of population age 16 years+, 2011-2015	73.00%
In civilian labor force, female, percent of population age 16 years+, 2011-2015	68.70%
iTotal accommodation and food services sales, 2012 (\$1,000) (c)	51,165
iTotal health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	D
iTotal manufacturers shipments, 2012 (\$1,000) (c)	688,021
iTotal merchant wholesaler sales, 2012 (\$1,000) (c)	D
iTotal retail sales, 2012 (\$1,000) (c)	855,981
iTotal retail sales per capita, 2012 (c)	\$46,292

Transportation

Mean travel time to work (minutes), workers age 16 years+, 2011-2015	29.3
--	------

Income and Poverty

Median household income (in 2015 dollars), 2011-2015	\$87,863
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$38,117
Persons in poverty, percent	Δ 3.2%

Businesses

nty, Pennsylvania	
Total employer establishments, 2014	X
Total employment, 2014	X
Total annual payroll, 2014 (\$1,000)	X
Total employment, percent change, 2013-2014	X
Total nonemployer establishments, 2014	X
All firms, 2012	1,714
Men-owned firms, 2012	980
Women-owned firms, 2012	421
Minority-owned firms, 2012	209
Nonminority-owned firms, 2012	1,368
Veteran-owned firms, 2012	180
Nonveteran-owned firms, 2012	1,397

Geography

nty, Pennsylvania	
Population per square mile, 2010	803
Land area in square miles, 2010	22.51
Metropolitan or Micropolitan Statistical Area	None
iFIPS Code	4209143312

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Δ This geographic level of poverty and health estimates are not comparable to other geographic levels of these estimates

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between the geographic levels. Click on the icon to the left of each row in TABLE view to learn about sampling error.

The vintage year (e.g., V2015) refers to the final year of the series (2010 thru 2015).
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- (a) Includes persons reporting only one race
- (b) Hispanics may be of any race, so also are included in applicable race categories
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- NA Not available
- S Suppressed; does not meet publication standards
- X Not applicable
- Z Value greater than zero but less than half unit of measure shown

Up one level

[Pennsylvania](#)

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Pop



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U.S. Census Quick Facts

QuickFacts

Pennsylvania

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All Topics ▼	PENNSYLVANIA	LIMERICK TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA	UNITED STATES
People			
Population			
Population estimates, July 1, 2016, (V2016)	12,784,227	NA	323,127,513
Population estimates, July 1, 2015, (V2015)	12,802,503	18,798	321,418,820
Population estimates base, April 1, 2010, (V2016)	12,702,857	NA	308,758,105
Population estimates base, April 1, 2010, (V2015)	12,702,887	18,074	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2016, (V2016)	0.6%	NA	4.7%
Population, percent change - April 1, 2010 (estimates base) to July 1, 2015, (V2015)	0.8%	4.0%	4.1%
Population, Census, April 1, 2010	12,702,379	18,074	308,745,538
Age and Sex			
Persons under 5 years, percent, July 1, 2015, (V2015)	5.6%	X	6.2%
Persons under 5 years, percent, April 1, 2010	5.7%	6.7%	6.5%
Persons under 18 years, percent, July 1, 2015, (V2015)	21.0%	X	22.9%
Persons under 18 years, percent, April 1, 2010	22.0%	26.7%	24.0%
Persons 65 years and over, percent, July 1, 2015, (V2015)	17.0%	X	14.9%
Persons 65 years and over, percent, April 1, 2010	15.4%	11.4%	13.0%
Female persons, percent, July 1, 2015, (V2015)	51.1%	X	50.8%
Female persons, percent, April 1, 2010	51.3%	51.4%	50.8%
Race and Hispanic Origin			
White alone, percent, July 1, 2015, (V2015) (a)	82.6%	X	77.1%
White alone, percent, April 1, 2010 (a)	81.9%	91.5%	72.4%
Black or African American alone, percent, July 1, 2015, (V2015) (a)	11.7%	X	13.3%
Black or African American alone, percent, April 1, 2010 (a)	10.8%	3.4%	12.6%
American Indian and Alaska Native alone, percent, July 1, 2015, (V2015) (a)	0.4%	X	1.2%
American Indian and Alaska Native alone, percent, April 1, 2010 (a)	0.2%	0.1%	0.9%
Asian alone, percent, July 1, 2015, (V2015) (a)	3.4%	X	5.6%
Asian alone, percent, April 1, 2010 (a)	2.7%	3.2%	4.8%
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2015, (V2015) (a)	0.1%	X	0.2%
Native Hawaiian and Other Pacific Islander alone, percent, April 1, 2010 (a)	Z	Z	0.2%
Two or More Races, percent, July 1, 2015, (V2015)	1.9%	X	2.6%
Two or More Races, percent, April 1, 2010	1.9%	1.3%	2.9%
Hispanic or Latino, percent, July 1, 2015, (V2015) (b)	6.8%	X	17.6%
Hispanic or Latino, percent, April 1, 2010 (b)	5.7%	1.8%	16.3%
White alone, not Hispanic or Latino, percent, July 1, 2015, (V2015)	77.4%	X	61.6%
White alone, not Hispanic or Latino, percent, April 1, 2010	79.5%	90.3%	63.7%
Population Characteristics			
Veterans, 2011-2015	870,770	1,265	20,108,332
Foreign born persons, percent, 2011-2015	6.3%	6.9%	13.2%
Housing			
Housing units, July 1, 2015, (V2015)	5,602,813	X	134,789,944
Housing units, April 1, 2010	5,567,315	7,199	131,704,730
Owner-occupied housing unit rate, 2011-2015	69.2%	78.6%	63.9%
Median value of owner-occupied housing units, 2011-2015	\$166,000	\$281,400	\$178,600
Median selected monthly owner costs -with a mortgage, 2011-2015	\$1,425	\$2,016	\$1,492
Median selected monthly owner costs -without a mortgage, 2011-2015	\$498	\$713	\$458
Median gross rent, 2011-2015	\$840	\$1,278	\$928
Building permits, 2015	22,854	X	1,182,582
Families and Living Arrangements			
Households, 2011-2015	4,958,859	7,037	116,926,305
Persons per household, 2011-2015	2.49	2.64	2.64
Living in same house 1 year ago, percent of persons age 1	88.0%	92.2%	85.1%

Schedule 13, 120 of 154

year+, 2011-2015			
Language other than English spoken at home, percent of persons age 5 years+, 2011-2015	10.6%	6.9%	21.0%
Education			
High school graduate or higher, percent of persons age 25 years+, 2011-2015	89.2%	95.4%	86.7%
Bachelor's degree or higher, percent of persons age 25 years+, 2011-2015	28.6%	43.9%	29.8%
Health			
With a disability, under age 65 years, percent, 2011-2015	9.5%	4.3%	8.6%
Persons without health insurance, under age 65 years, percent	▲ 7.5%	▲ 4.4%	▲ 10.5%
Economy			
In civilian labor force, total, percent of population age 16 years+, 2011-2015	62.8%	73.0%	63.3%
In civilian labor force, female, percent of population age 16 years+, 2011-2015	58.3%	68.7%	58.5%
Total accommodation and food services sales, 2012 (\$1,000) (c)	23,504,192	51,165	708,138,598
Total health care and social assistance receipts/revenue, 2012 (\$1,000) (c)	96,329,248	D	2,040,441,203
Total manufacturers shipments, 2012 (\$1,000) (c)	231,396,178	688,021	5,696,729,632
Total merchant wholesaler sales, 2012 (\$1,000) (c)	191,170,147	D	5,208,023,478
Total retail sales, 2012 (\$1,000) (c)	178,794,945	855,981	4,219,821,871
Total retail sales per capita, 2012 (c)	\$14,008	\$46,292	\$13,443
Transportation			
Mean travel time to work (minutes), workers age 16 years+, 2011-2015	26.3	29.3	25.9
Income and Poverty			
Median household income (in 2015 dollars), 2011-2015	\$53,599	\$87,863	\$53,889
Per capita income in past 12 months (in 2015 dollars), 2011-2015	\$29,291	\$38,117	\$28,930
Persons in poverty, percent	▲ 13.2%	▲ 3.2%	▲ 13.5%
Businesses			
Total employer establishments, 2014	298,297 ¹	X	7,563,085
Total employment, 2014	5,255,409 ¹	X	121,079,879
Total annual payroll, 2014 (\$1,000)	248,560,941 ¹	X	5,940,442,637
Total employment, percent change, 2013-2014	1.4% ¹	X	2.4%
Total nonemployer establishments, 2014	799,663	X	23,836,937
All firms, 2012	975,453	1,714	27,626,360
Men-owned firms, 2012	579,400	980	14,844,597
Women-owned firms, 2012	304,803	421	9,878,397
Minority-owned firms, 2012	131,512	209	7,952,386
Nonminority-owned firms, 2012	818,858	1,368	18,987,918
Veteran-owned firms, 2012	97,969	180	2,521,682
Nonveteran-owned firms, 2012	837,792	1,397	24,070,685
Geography			
Population per square mile, 2010	283.9	803.0	87.4
Land area in square miles, 2010	44,742.70	22.51	3,531,905.43
FIPS Code	42	4209143312	00

1. Includes data not distributed by county.

▲ This geographic level of poverty and health estimates are not comparable to other geographic levels of these estimates

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable. Click the Quick Info icon to the left of each row in TABLE view to learn about sampling error.

The vintage year (e.g., V2015) refers to the final year of the series (2010 thru 2015). Different vintage years of estimates are not comparable.

(a) Includes persons reporting only one race
 (b) Hispanics may be of any race, so also are included in applicable race categories
 (c) Economic Census - Puerto Rico data are not comparable to U.S. Economic Census data

D Suppressed to avoid disclosure of confidential information
 F Fewer than 25 firms
 FN Footnote on this item in place of data
 NA Not available
 S Suppressed; does not meet publication standards
 X Not applicable
 Z Value greater than zero but less than half unit of measure shown

QuickFacts data are derived from: Population Estimates, American Community Survey, Census of Population and Housing, Current Population Survey, Small Area Health Insurance Estimates, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits.

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U.S. States :

State	<u>1790</u>	<u>1800</u>	<u>1810</u>	<u>1820</u>	<u>1830</u>	<u>1840</u>	<u>1850</u>
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

WORKING NOTES

2012 2013 2014 2015 2016 2017 2018 2019 2020 2021

3rd

Change	2018	2019	2020	2021	89.00%
\$	686.46	\$ 680.88	\$ 680.88	\$ 680.88	\$ 1,286.86
			\$ -	\$ -	605.98
	31,234	3,404	3,820,745	63,634	
	3,812,234	3,815,638	3,820,745	3,886,109	
	-	-	-	3,458,637	

Prior yr		2018	2019	2020	2021
NET PURTA	0.1432%	66,092	65,039	63,776	62,397
REV Reg Assessment	0.5690%	25,143	29,313	21,692	21,711
		91,235	94,352	85,468	84,108
					83,402

Limerick Township Wastewater System's Assets

Investor Provided Capital	53,541,921
Gross PP&E	63,480,402
Net PP&E	46,153,867
Revenues	4,418,775
EBITDA	2,487,775
EBIT	893,600
Customers	5,433
Population	19,009

G PPE	59,164,674	60,847,250	63,480,402	63,795,752
NPPE	36,017,704	36,113,701	46,153,867	45,418,048
Cust	5,323	5,416	5,433	5,508
	2014	2015	2016	2017

LESS: EOS - Bank Fees, etc.	4,227	3,320	4,387	4,550	0
LESS: EOS - Wages & Benefits	779,619	871,223	868,519	826,012	0.15
LESS: EOS - Electric & Power	407,099	413,357	383,366	354,300	0.1
LESS: EOS - Lab & Testing	26,754	34,311	41,864	52,800	0.25
LESS: EOS - Insurance	60,656	59,029	66,946	64,986	0.02% G PPE
LESS: EOS - Net Professional Services	85,863	91,188	92,130	104,604	0.5
LESS: EOS - Repairs & Maintenance	110,220	130,771	161,697	226,652	0.1
LESS: EOS - Uniforms	2,795	2,829	3,207	3,000	0.40 per cust
LESS: EOS - Postage	9,929	10,238	12,000	13,000	0.15 per cust

	WORKING NOTES								
	2022	2023	2024	2025	2026	2027	2028	2029	2030
GROSS Property, plant and equipment	66,571,886	67,562,143	68,567,130	69,587,066	70,622,174	71,672,679	72,738,810	73,820,800	74,918,884
Accumulated Depreciation	23,512,871	24,503,566	25,508,997	26,529,383	27,564,948	28,615,918	29,682,520	30,764,988	31,863,557
NET PPE	43,059,015	43,058,577	43,058,133	43,057,683	43,057,226	43,056,761	43,056,290	43,055,812	43,055,327

Total Debt
Net Equity
Investor Provided Capital

1,781,000

1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
1,147,933	1,165,008	1,182,338	1,199,925	1,217,774	1,235,888	1,254,272	1,272,929	1,291,864	
1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%	1.74%
0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
9,987	10,136	10,286	10,439	10,595	10,752	10,912	11,074	11,239	
15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
172,190	174,751	177,351	179,989	182,666	185,383	188,141	190,939	193,780	
2,996	3,041	3,086	3,132	3,178	3,226	3,274	3,322	3,372	
1,141,373	1,158,351	1,175,581	1,193,068	1,210,815	1,228,826	1,247,105	1,265,655	1,284,482	
1,148,364	1,165,446	1,182,781	1,200,375	1,218,232	1,236,352	1,254,743	1,273,407	1,292,349	

434,340.00 439,166.00 443,992.00 448,818.00 453,644.00 458,470.00 463,296.00 468,122.00 472,948.00

Sewer Rental Charges
EDUs

9129	9220	9312	9405	9499	9594	9690	9787	9885
90	91	92	93	94	95	96	97	98

1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
359,954,213	363,553,755	367,189,292	370,861,185	374,569,797	378,315,495	382,098,650	385,919,636	389,778,833
5,859	5,918	5,977	6,037	6,097	6,158	6,219	6,282	6,344
7,502,393	7,577,417	7,885,083	7,963,934	8,043,573	8,370,166	8,453,868	8,538,407	8,885,092
1,280.49	1,280.49	1,319.29	1,319.29	1,319.29	1,359.26	1,359.26	1,359.26	1,400.45
61,436	61,436	61,436	61,436	61,436	61,436	61,436	61,436	61,436
821.82	821.85	846.77	846.78	846.78	872.44	872.43	872.42	898.85
39,430	39,431	39,432	39,432	39,433	39,433	39,432	39,432	39,431
7,381,470	7,539,905	7,615,304	7,924,508	8,003,754	8,083,791	8,412,017	8,496,137	8,581,099

WORKING NOTES

	2022	2023	2024	2025	2026	2027	2028	2029	2030
			3.03%			3.03%			3.03%
\$	1,286.86	\$ 1,286.86	\$ 1,325.85	\$ 1,325.85	\$ 1,325.85	\$ 1,366.02	\$ 1,366.02	\$ 1,366.02	\$ 1,407.41
\$	-	\$ -	\$ 38.99	\$ -	\$ -	\$ 40.17	\$ -	\$ -	\$ 41.39
	36,724	37,512	37,887	39,425	39,820	40,218	41,851	42,269	42,692
	7,502,393	7,577,417	7,653,191	7,963,934	8,043,573	8,124,009	8,453,868	8,538,407	8,623,791
	-	-	231,892	-	-	246,157	-	-	261,301
	61,661	61,661	61,660	61,659	61,659	61,658	61,657	61,657	61,656
	41,792	42,689	43,116	44,866	45,315	45,768	47,626	48,103	48,584
	103,453	104,350	104,776	106,525	106,974	107,426	109,283	109,760	110,240

LESS: EOS - Bank Fees, etc.	LESS: EOS - Ba Bank Fees, etc.	eliminated	100%	0
LESS: EOS - Wages & Benefits	LESS: EOS - W: Wages & Benefits	15% savings	15%	0.15
LESS: EOS - Electric & Power	LESS: EOS - El: Electric & Power	10% savings	10%	0.1
LESS: EOS - Lab & Testing	LESS: EOS - La: Lab & Testing	25% savings	25%	0.25
LESS: EOS - Insurance	LESS: EOS - In: Insurance	% of G PPE	0.02%	0.02% G PPE
LESS: EOS - Net Professional Services	LESS: EOS - Nc Net Professional Services	50% savings	50%	0.5
LESS: EOS - Repairs & Maintenance	LESS: EOS - Rc Repairs & Maintenance	10% savings	10%	0.1
LESS: EOS - Uniforms	LESS: EOS - Ur Uniforms	\$ per CUST	\$0.40	0.40 per cust
LESS: EOS - Postage	LESS: EOS - Po Postage	\$ per CUST	\$0.15	0.15 per cust

Limerick Township Wastewater System's Assets

Total Debt	7,345,152	7,796,250	8,699,043
CAPX	301,118	393,595	112,528

	2015	2014	2013
Income (Loss) Before Transfers	344,783	1,573,078	360,049
Interest paid	256,305	193,798	221,795
Depreciation	1,586,579	1,571,181	1,580,675
Total Source	\$2,187,667	\$3,338,057	\$2,162,519

Income tax	0	0	0
Principal	4,510,000	900,000	858,000
Interest paid	256,305	193,798	221,795
Total Use	\$4,766,305	\$1,093,798	\$1,079,795

Debt Service Coverage	0.50	3.10	2.00
Pre-Tax Interest Coverage - Including AFC(3)(x)	2.30	9.10	2.60
Post-Tax Interest Coverage - Including AFC(3)(x)	2.30	9.10	2.60
GCF / Interest Coverage(4)(x)	8.50	17.20	9.80
GCF / Tot. Debt(7)(%)	26.30	40.30	22.30
GCF / Construction(6)(%)	641.40	798.90	1724.70

Comparable Group

Debt Service Coverage - As Reported

	2015	2014	2013
Comparable Group			
American States Water Co	5.6	2.9	4.8
American Water Works Co Inc	2.8	2.1	1.4
Aqua America Inc	0.8	1.3	1.1
Artesian Resources -CL A	3.3	3.0	2.9
California Water Service Gp	3.7	3.9	1.7
Connecticut Water Svc Inc	4.6	3.7	1.6
Middlesex Water Co	3.2	3.2	2.0
SJW Corp	4.2	5.0	2.9
York Water Co	1.4	1.1	3.9
Median	3.3	3.0	2.0

	2015	2014	2013
Company Name	DEPRECIATIO N	DEPRECIATIO N	DEPRECIATIO N
AMERICAN STATES WATER CO	42,033	41,073	40,090
AMERICAN WATER WORKS CO INC	440,000	424,084	407,718
AQUA AMERICA INC	125,290	123,054	119,258
ARTESIAN RESOURCES -CL A	8,837	8,673	8,251
CALIFORNIA WATER SERVICE GP	61,381	61,217	58,320
CONNECTICUT WATER SVC INC	12,871	11,784	10,792
MIDDLESEX WATER CO	12,051	11,444	10,988
SJW CORP	40,740	37,905	32,616
YORK WATER CO	6,151	5,932	5,744

	2015	2014	2013
TOTAL INTERST EXPENSE	TOTAL INTERST EXPENSE	TOTAL INTERST EXPENSE	TOTAL INTERST EXPENSE
AMERICAN STATES WATER CO	21,782	21,641	22,685
AMERICAN WATER WORKS CO INC	316,000	304,844	314,767
AQUA AMERICA INC	76,808	76,713	77,754
ARTESIAN RESOURCES -CL A	6,998	7,393	7,055
CALIFORNIA WATER SERVICE GP	29,185	28,483	30,897
CONNECTICUT WATER SVC INC	6,737	6,515	6,130
MIDDLESEX WATER CO	5,554	5,607	5,807
SJW CORP	23,374	21,900	20,827
YORK WATER CO	5,053	5,087	5,244

	2015	2014	2013
INCOME TO PREF+COMM	INCOME TO PREF+COMM	INCOME TO PREF+COMM	INCOME TO PREF+COMM
AMERICAN STATES WATER CO	60,484	61,058	62,686
AMERICAN WATER WORKS CO INC	476,000	429,841	369,283
AQUA AMERICA INC	201,790	213,884	204,993
ARTESIAN RESOURCES -CL A	11,305	9,506	8,301
CALIFORNIA WATER SERVICE GP	45,017	56,738	47,254
CONNECTICUT WATER SVC INC	22,761	21,319	18,269
MIDDLESEX WATER CO	20,028	18,445	16,633
SJW CORP	37,882	51,806	22,384
YORK WATER CO	12,489	11,484	9,654

	2015	2014	2013
REPAY LT DEBT	REPAY LT DEBT	REPAY LT DEBT	REPAY LT DEBT
AMERICAN STATES WATER CO	0.237	21.287	3.474
AMERICAN WATER WORKS CO INC	130.000	238.371	493.095
AQUA AMERICA INC	400.407	253.192	300.323
ARTESIAN RESOURCES -CL A	1.263	1.132	1.111
CALIFORNIA WATER SERVICE GP	7.003	8.705	47.248
CONNECTICUT WATER SVC INC	2.476	4.114	15.870
MIDDLESEX WATER CO	6.284	5.481	11.230
SJW CORP	0.633	0.602	5.439
YORK WATER CO	11.886	14.923	0.047

	2015	2014	2013
AMERICAN STATES WATER CO	5.60	2.90	4.80
AMERICAN WATER WORKS CO INC	2.80	2.10	1.40
AQUA AMERICA INC	0.80	1.30	1.10
ARTESIAN RESOURCES -CL A	3.30	3.00	2.90
CALIFORNIA WATER SERVICE GP	3.70	3.90	1.70
CONNECTICUT WATER SVC INC	4.60	3.70	1.60
MIDDLESEX WATER CO	3.20	3.20	2.00
SJW CORP	4.20	5.00	2.90
YORK WATER CO	1.40	1.10	3.90

Company Name	Pretax Operating Income			Interest expense			Net Income		
	2015	2014	2013	2015	2014	2013	2015	2014	2013
AMERICAN STATES WATER CO	119,997	120,747	121,154	21,782	21,641	22,685	60,484	61,058	62,686
AMERICAN WATER WORKS CO INC	1,098,000	1,014,658	920,256	316,000	304,844	314,767	476,000	429,841	369,283
AQUA AMERICA INC	293,560	315,816	305,437	76,808	76,713	77,754	201,790	213,884	204,993
ARTESIAN RESOURCES -CL A	26,087	23,274	20,944	6,998	7,393	7,055	11,305	9,506	8,301
CALIFORNIA WATER SERVICE GP	99,491	113,193	98,620	29,185	28,483	30,897	45,017	56,738	47,254
CONNECTICUT WATER SVC INC	28,729	32,061	31,402	6,737	6,515	6,130	22,761	21,319	18,269
MIDDLESEX WATER CO	56,133	33,989	31,061	5,554	5,607	5,807	20,028	18,445	16,633
SJW CORP	84,528	98,677	57,346	23,374	21,900	20,827	37,882	51,806	22,384
YORK WATER CO	22,282	21,448	20,710	5,053	5,087	5,244	12,489	11,484	9,654

Company Name	Gross Cash Flow			Total debt			CAPX		
	2015	2014	2013	2015	2014	2013	2015	2014	2013
AMERICAN STATES WATER CO	112,246	134,423	118,618	353,853	326,090	332,377	87,323	72,553	97,379
AMERICAN WATER WORKS CO INC	1,191,000	1,092,826	1,006,984	6,556,000	5,959,336	5,874,539	1,160,000	956,119	980,252
AQUA AMERICA INC	337,367	363,281	348,719	1,795,926	1,637,668	1,591,611	364,689	328,605	308,171
ARTESIAN RESOURCES -CL A	24,990	25,105	20,071	115,969	124,831	117,720	20,694	23,730	21,188
CALIFORNIA WATER SERVICE GP	128,876	150,545	113,336	552,502	504,955	480,865	176,833	132,015	122,988
CONNECTICUT WATER SVC INC	27,600	38,463	36,081	196,581	181,049	179,163	48,025	45,668	33,303
MIDDLESEX WATER CO	47,452	32,702	30,222	144,986	160,949	163,634	25,773	22,596	20,080
SJW CORP	93,359	114,666	65,662	418,916	398,149	357,951	106,774	101,936	94,325
YORK WATER CO	20,704	21,959	17,255	87,305	84,885	84,928	13,844	14,139	9,852

Company Name	Pretax Interest Coverage			Posttax Interest Coverage			GCF Interest Coverage		
	2015	2014	2013	2015	2014	2013	2015	2014	2013
AMERICAN STATES WATER CO	5.5	5.6	5.3	3.8	3.8	3.8	6.2	7.2	6.2
AMERICAN WATER WORKS CO INC	3.5	3.3	2.9	2.5	2.4	2.2	4.8	4.6	4.2
AQUA AMERICA INC	3.8	4.1	3.9	3.6	3.8	3.6	5.4	5.7	5.5
ARTESIAN RESOURCES -CL A	3.7	3.1	3.0	2.6	2.3	2.2	4.6	4.4	3.8
CALIFORNIA WATER SERVICE GP	3.4	4.0	3.2	2.5	3.0	2.5	5.4	6.3	4.7
CONNECTICUT WATER SVC INC	4.3	4.9	5.1	4.4	4.3	4.0	5.1	6.9	6.9
MIDDLESEX WATER CO	6.5	6.1	5.3	4.6	4.3	3.9	9.5	6.8	6.2
SJW CORP	3.6	4.5	2.8	2.6	3.4	2.1	5.0	6.2	4.2
YORK WATER CO	4.4	4.2	3.9	3.5	3.3	2.8	5.1	5.3	4.3

Median 3.8 4.2 3.9 3.5 3.4 2.8 5.1 6.2 4.7

Company Name	GCF To Debt			GCF To CAPX		
	2015	2014	2013	2015	2014	2013
AMERICAN STATES WATER CO	31.7	41.2	35.7	128.5	185.3	121.8
AMERICAN WATER WORKS CO INC	18.2	18.3	17.1	102.7	114.3	102.7
AQUA AMERICA INC	18.8	22.2	21.9	92.5	110.6	113.2
ARTESIAN RESOURCES -CL A	21.5	20.1	17.0	120.8	105.8	94.7
CALIFORNIA WATER SERVICE GP	23.3	29.8	23.6	72.9	114.0	92.2
CONNECTICUT WATER SVC INC	14.0	21.2	20.1	57.5	84.2	108.3
MIDDLESEX WATER CO	32.7	20.3	18.5	184.1	144.7	150.5
SJW CORP	22.3	28.8	18.3	87.4	112.5	69.6
YORK WATER CO	23.7	25.9	20.3	149.6	155.3	175.1

Median 22.3 22.2 20.1 102.7 114.0 108.3

	2015	2014	2013
Pre-Tax Interest Coverage - Including AFC(3)(x)	3.8	4.2	3.9
Post-Tax Interest Coverage - Including AFC(3)(x)	3.5	3.4	2.8
GCF / Interest Coverage(4)(x)	5.1	6.2	4.7
GCF / Tot. Debt(7)(%)	22.3	22.2	20.1
GCF / Construction(6)(%)	102.7	114.0	108.3

FRED Graph Observations
 Federal Reserve Economic Data
 Link: <https://fred.stlouisfed.org>
 Help: <https://fred.stlouisfed.org/help-faq>
 Economic Research Division
 Federal Reserve Bank of St. Louis

FRED Graph Observations
 Federal Reserve Economic Data
 Link: <https://fred.stlouisfed.org>
 Help: <https://fred.stlouisfed.org/help-faq>
 Economic Research Division
 Federal Reserve Bank of St. Louis

DAAA	Moody's Seasoned Aaa Corporate Bond Yield%, Percent, Daily, Not Seasonally Adjusted		DBAA	Moody's Seasoned Baa Corporate Bond Yield%, Percent, Daily, Not Seasonally Adjusted	
	DAAA			DBAA	
Frequency: Daily observation_date			Frequency: Daily observation_date		
	2016-12-15	4.07		2016-12-15	4.84
	2016-12-16	4.11		2016-12-16	4.88
	2016-12-19	4.05		2016-12-19	4.82
	2016-12-20	4.09		2016-12-20	4.85
	2016-12-21	4.05		2016-12-21	4.81
	2016-12-22	4.06		2016-12-22	4.82
	2016-12-23	4.04		2016-12-23	4.80
	2016-12-26	#N/A		2016-12-26	0
	2016-12-27	4.07		2016-12-27	4.82
	2016-12-28	4.01		2016-12-28	4.77
	2016-12-29	4.01		2016-12-29	4.76
	2016-12-30	3.98		2016-12-30	4.73
	2017-01-02	#N/A		2017-01-02	0
	2017-01-03	3.94		2017-01-03	4.72
	2017-01-04	3.93		2017-01-04	4.71
	2017-01-05	3.85		2017-01-05	4.62
	2017-01-06	3.91		2017-01-06	4.66
	2017-01-09	3.88		2017-01-09	4.62
	2017-01-10	3.87		2017-01-10	4.62
	2017-01-11	3.84		2017-01-11	4.60
	2017-01-12	3.86		2017-01-12	4.61
	2017-01-13	3.90		2017-01-13	4.63
	2017-01-16	#N/A		2017-01-16	0
	2017-01-17	3.84		2017-01-17	4.59
	2017-01-18	3.91		2017-01-18	4.64
	2017-01-19	3.95		2017-01-19	4.68
	2017-01-20	3.97		2017-01-20	4.69

Bond Buyer Indexes

Date	Revenue	
	20-Bond GO Index	Bond Index
12/1/2016	4.03	4.1
12/8/2016	3.78	3.87
12/15/2016	3.88	3.99
12/22/2016	3.83	3.96
12/29/2016	3.78	3.9
1/5/2017	3.78	3.9
1/12/2017	3.72	3.83
1/19/2017	3.83	3.96
1/26/2017	3.87	4.02
2/2/2017	3.87	4.02

Selected Interest Rates (Daily) - H.15

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H.15 Selected Interest Rates

The release is posted daily Monday through Friday at 4:15pm. The release is not posted on holidays or in the event that the Board is closed.

January 5, 2017

Selected Interest Rates

Yields in percent per annum

Instruments	2016 Dec 29	2016 Dec 30	2017 Jan 2*	2017 Jan 3	2017 Jan 4
Federal funds (effective) 1 2 3	0.66	0.55	0.55	0.66	0.66
Commercial Paper 3 4 5 6					
Nonfinancial					
1-month	0.65	0.63		0.61	0.62
2-month	n.a.	n.a.		0.71	0.69
3-month	n.a.	n.a.		0.77	0.79
Financial					
1-month	0.72	n.a.		0.70	0.71
2-month	n.a.	n.a.		0.84	0.83
3-month	0.87	n.a.		0.99	0.95
Bank prime loan 2 3 7	3.75	3.75	3.75	3.75	3.75
Discount window primary credit 2 8	1.25	1.25	1.25	1.25	1.25
U.S. government securities					
Treasury bills (secondary market) 3 4					
4-week	0.38	0.43		0.51	0.48
3-month	0.46	0.50		0.53	0.52
6-month	0.61	0.61		0.64	0.62
1-year	0.81	0.81		0.87	0.85
Treasury constant maturities					
<u>Nominal 9</u>					
1-month	0.39	0.44		0.52	0.49
3-month	0.47	0.51		0.53	0.53
6-month	0.62	0.62		0.65	0.63
1-year	0.85	0.85		0.89	0.87
2-year	1.22	1.20		1.22	1.24
3-year	1.49	1.47		1.50	1.50
5-year	1.96	1.93		1.94	1.94
7-year	2.30	2.25		2.26	2.26
10-year	2.49	2.45		2.45	2.46
20-year	2.82	2.79		2.78	2.78
30-year	3.08	3.06		3.04	3.05
<u>Inflation indexed 10</u>					
5-year	0.15	0.09		0.08	0.08
7-year	0.38	0.33		0.30	0.30
10-year	0.55	0.50		0.47	0.47
20-year	0.86	0.82		0.78	0.78
30-year	1.02	0.99		0.94	0.95

MERGENT® MUNICIPAL & GOVERNMENT

NEWS REPORTS

Tuesday, February 07, 2017



Volume 89 No. 2

NOTICE - Items in this issue will be listed online weekly and printed monthly.

ALABAMA

JACKSONVILLE STATE UNIVERSITY (Jacksonville), AL

New Bond Offering: Tuition and Fee Revenue Refunding, 2017

ISSUED-\$34,880,000.

DATED DATE-Jan. 31, 2017.

DUE-Dec. 1: 2017 - 2027, 2030, 2033 - 2034, 2036, 2038.

DENOMINATION-Registered \$5,000.00 and multiples thereof.

TRUSTEE-Bank of New York Mellon Trust Company NA.

PAYING AGENT-Bank of New York Mellon Trust Company NA.

REGISTRAR-Bank of New York Mellon Trust Company NA.

BOND COUNSEL-Waldrep Stewart & Kendrick LLC.

TRANSFER AGENT-Bank of New York Mellon Trust Company NA.

DEPOSITORY-Depository Trust Company.

INTEREST-J&D 1 (June 1, 2017-according to maturity-\$000 omitted):

Year	Amt.	%	Year	Amt.	%
12/01/17	2,350	2.00	12/01/18	1,900	2.00
12/01/19	1,965	3.00	12/01/20	1,305	3.00
12/01/21	1,370	3.00	12/01/22	1,190	4.00
12/01/23	1,280	5.00	12/01/24	1,380	5.00
12/01/25	1,490	5.00	12/01/26	1,350	5.00
12/01/27	1,470	5.00	12/01/30	310	3.25
12/01/33	345	3.50	12/01/34	1,485	3.63
12/01/36	7,505	5.00	12/01/38	8,185	3.75

CALLABLE-Bonds due 2030, 2033 - 2034, 2036, 2038 are callable in whole at anytime or in part at anytime:

2030, 2033 - 2034, 2036, 2038 Bonds:

12/01/2027 ... 100

SINKING FUND-In part by lot in minimum mandatory amounts each Dec. 1 as follows (\$000 omitted):

2030 Bonds:

12/01/28 100 12/01/29 105 12/01/30 105
2033 Bonds:

12/01/31 110 12/01/32 115 12/01/33 120
2036 Bonds:

12/01/35 3,660 12/01/36 3,845
2038 Bonds:

12/01/37 4,015 12/01/38 4,170

SECURITY-Revenue.

BOND INSURANCE-Bonds due are insured as to principal and interest by Assured Guaranty Municipal Corp (AGM) (2017 - 2027, 2030, 2033 - 2034, 2036, 2038).

PURPOSE-Higher Education.

ORIGINAL ISSUE DISCOUNT-The following maturities were issued as original issue discount (maturity year and price or yield):

12/01/30 98.90 12/01/33 98.99 12/01/34 98.89

12/01/38 98.53

OFFERED-(\$34,880,000) On Jan. 19, 2017 thru Stifel Nicolaus & Company Inc.

MOBILE, AL

New Bond Offering: Tax-Exempt General Obligation Warrants, 2017-A

ISSUED-\$64,610,000.

DATED DATE-Feb. 15, 2017.

DUE-Feb. 15: 2019 - 2020, 2022, 2024 - 2030.

DENOMINATION-Registered \$5,000.00 and multiples thereof.

PAYING AGENT-Regions Bank.

REGISTRAR-Regions Bank.

FINANCIAL ADVISOR-Public Financial Management Inc.

BOND COUNSEL-Maynard Cooper & Gale PC.

ESCROW AGENT-Regions Bank.

TRANSFER AGENT-Regions Bank.

DEPOSITORY-Depository Trust Company.

INTEREST-F&A 15 (Aug. 15, 2017-according to maturity-\$000 omitted):

Year	Amt.	%	Year	Amt.	%
02/15/19	6,095	5.00	02/15/20	6,405	5.00
02/15/22	1,565	5.00	02/15/24	6,230	5.00
02/15/25	6,545	5.00	02/15/26	6,870	5.00
02/15/27	7,190	5.00	02/15/28	7,550	5.00
02/15/29	4,755	3.00	02/15/29	3,155	5.00
02/15/30	8,250	5.00			

CALLABLE-Bonds due 2028 - 2030 are callable in whole at anytime or in part at anytime:

2028 - 2030 Bonds:

02/15/2027 ... 100

SECURITY-Unlimited Tax G.o..

PURPOSE-Gen Purpose/Pub Improvement.

ORIGINAL ISSUE DISCOUNT-The following maturities were issued as original issue discount (maturity year and price or yield):

02/15/29 98.51

OFFERED-(\$64,610,000) On Jan. 25, 2017 thru Raymond James & Associates Inc.

ARIZONA

ARIZONA INDUSTRIAL DEVELOPMENT AUTHORITY, AZ

New Bond Offering: Education Revenue, Basis Schools Projects, 2017-A

ISSUED-\$75,040,000.

DATED DATE-Feb. 2, 2017.

DUE-July 1: 2021, 2026, 2037, 2047, 2050.

DENOMINATION-Registered \$25,000.00 and multiples thereof.

TRUSTEE-Bokf NA.

PAYING AGENT-Bokf NA.

REGISTRAR-Bokf NA.

BOND COUNSEL-Greenberg Traurig LLC.

ESCROW AGENT-Bokf NA.

TRANSFER AGENT-Bokf NA.

DEPOSITORY-Depository Trust Company.

INTEREST-J&J 1 (July 1, 2017-according to maturity-\$000 omitted):

Year	Amt.	%	Year	Amt.	%
07/01/21	1,850	4.00	07/01/26	3,815	5.00
07/01/37	12,625	5.13	07/01/47	26,155	5.25
07/01/50	30,595	5.38			

CALLABLE-Bonds due 2037, 2047, 2050 are callable in whole at anytime or in part at anytime:

2037, 2047, 2050 Bonds:

07/01/2026 ... 100

SINKING FUND-In part by lot in minimum mandatory amounts each July 1 as follows (\$000 omitted):

2021 Bonds:

07/01/19 545 07/01/20 640 07/01/21 665
2026 Bonds:

07/01/22 690 07/01/23 725 07/01/24 760
07/01/25 800 07/01/26 840

2037 Bonds:

07/01/27 880 07/01/28 930 07/01/29 975
07/01/30 1,030 07/01/31 1,080 07/01/32 1,135
07/01/33 1,190 07/01/34 1,250 07/01/35 1,310
07/01/36 1,385 07/01/37 1,460

2047 Bonds:

07/01/38 1,525 07/01/39 1,610 07/01/40 1,695
07/01/41 1,780 07/01/42 1,875 07/01/43 1,970
07/01/44 2,085 07/01/45 2,190 07/01/46 1,815
07/01/47 9,610

2050 Bonds:

07/01/48 10,115 07/01/49 10,460 07/01/50 10,020

MANDATORY REDEMPTION-Subject to redemption in whole or in part at 100 under certain special circumstances as described in the indenture.

EXTRAORDINARY OPTIONAL REDEMPTION-Subject to redemption in whole or in part at 100 under certain special circumstances as described in the indenture.

SECURITY-Loan Agreement.

PURPOSE-Primary/Secondary Education.

ORIGINAL ISSUE DISCOUNT-The following maturities were issued as original issue discount (maturity year and price or yield):

07/01/37 99.68 07/01/47 99.24 07/01/50 99.61

MOODY'S MUNICIPAL BOND AVERAGES

Monthly Averages	Ten Year State		Long Maturities				Baa
	Aaa	Aa	Composite	Aaa	Aa	A	
Oct. 2016	1.49	1.71	2.86	2.47	2.71	3.02	3.22
Nov. 2016	1.83	2.06	3.21	2.79	3.06	3.37	3.63
Jan. 2017	2.28	2.48	3.67	3.21	3.46	3.83	4.19
Weekly Averages							
Jan. 5, 2017	2.39	2.60	3.82	3.36	3.61	3.98	4.34
Jan. 12, 2017	2.16	2.36	3.54	3.08	3.32	3.70	4.06
Jan. 19, 2017	2.14	2.35	3.49	3.02	3.27	3.65	4.01
Jan. 26, 2017	2.34	2.55	3.63	3.15	3.41	3.79	4.15
Feb. 2, 2017	2.58	3.55	3.73	3.25	3.51	3.89	4.25

Daily Bond Yields and Key Indicators

Updated by 11 am ET with data from the

Data as of 5-Jan-17

Moody's Daily Long-term Corporate Bond Yield Averages

	Utilities	Industrial	Corporate
Aaa	NA	3.85	3.85
Aa	3.92	3.93	3.93
A	4.1	4.11	4.11
Baa	4.6	4.64	4.62
Avg	4.21	4.13	4.17

Moody's Daily Treasury Yield Averages

Short-Term (3-5 yrs)	1.67
Medium-Term (5-10 yrs)	2.17
Long-Term (10+ yrs)	2.8

Moody's Daily Public Utility Common Stock Yield Averages

Price	368.13
Yield	3.82
New Dividend	14.07

Moody's Commodity and Scrap Price Indexes

Spot Commodity Index	5,436.26
Industrial Metals Index	1,768.05

2015 Ibbotson® Stocks, Bonds, Bills, and Inflation® (S&BBI®) Classic Yearbook

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Published by:

Morningstar, Inc
22 W. Washington Street
Chicago, IL 60602 U.S.A.
corporate.morningstar.com

Main +1 312 696-6000
Product Sales +1 888 298-3647
Fax +1 312 696-6010




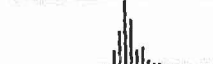



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Table 2-1: Basic Series: Summary Statistics of Annual Total Returns

Series	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Distribution (%)
Large-Cap Stocks	10.1	12.1	20.1	
Small-Cap Stocks*	12.2	16.7	32.1	
Long-Term Corporate Bonds	6.1	6.4	8.4	
Long-Term Government Bonds	5.7	6.1	10.0	
Intermediate Term Government Bonds	5.3	5.4	5.6	
U.S. Treasury Bills	3.5	3.5	3.1	
Inflation	2.9	3.0	4.1	

Data from 1926-2014. * The 1929 small cap stocks total return was 142.5%.

Riskier assets, such as large- and small-cap stocks, have low, spread-out skylines, reflecting the broad distribution of returns from very poor to very good. Less-risky assets, such as bonds, have narrow skylines that resemble a single tall building, indicating the tightness of the distribution around the mean of the series. The histogram for Treasury bills is one-sided, lying almost entirely to the right of the vertical line representing a zero return; that is, Treasury bills rarely experienced negative returns on a yearly basis over the 1926-2014 period (the only negative year was 1938). The inflation skyline shows both positive and negative annual rates. Although a few deflationary months and quarters have occurred recently, the last negative annual inflation rate occurred in 1954.

Appreciation, Income, and Reinvestment Returns

Table 2-2 provides further detail on the returns of large-cap stocks, long-term government bonds, and intermediate-term government bonds. Total annual returns are shown as the sum of three components: capital appreciation returns, income returns, and reinvestment returns. The capital appreciation and income components are explained in Chapter 3. The third component, reinvestment return, reflects monthly income reinvested in the total return index in subsequent months in the year. Thus, for a single month the reinvestment return is zero, but over a longer period of time it is nonzero. Because the returns in Table 2-2 are annual, reinvestment return is relevant.

Note that in Table 2-1, the arithmetic mean returns are always higher than the geometric mean returns. The difference between these two means is related to the standard deviation, or variability, of the series. [See Chapter 6.]

The "skylines," or histograms, in Table 2-1 show the frequency distribution of returns in each asset class. The height of the large-cap stock skyline in the range between 10% to 20%, for example, shows the number of years in the 1926-2014 period that large-cap stocks had a return in that range. The histograms are shown in 5% increments to fully display the spectrum of returns as seen over the last 89 years, especially in stocks.

The annual total return—formed by compounding the monthly total returns—does not equal the sum of the annual capital appreciation and income components; the difference is reinvestment return. A simple example illustrates this point. In 1995, an "up" year on a total return basis, the total annual return on large-cap stocks was 37.58%. The annual capital appreciation was 34.11% and the annual income return was 3.04%, totaling 37.15%. The remaining 0.43% (37.58% minus 37.15%) of the 1995 total return came from the reinvestment of dividends in the market. For more information on calculating annual total and income returns, see Chapter 5.

Monthly income and capital appreciation returns for large cap stocks are presented in Appendix A: Tables A-2 and A-3, respectively. Monthly income and capital appreciation returns are presented for long-term government bonds Appendix A: Tables A-7 and A-8; and for intermediate-term government bonds in Tables A-11 and A-12.

Table 2-2: Large-Cap Stocks, Long-Term Government Bonds, and Intermediate-Term Government Bonds (Continued)
Annual Total, Income, Capital Appreciation, and Reinvestment Returns (%)

Year	Large-Cap Stocks				Long-Term Government Bonds					Intermediate-Term Government Bonds				
	Capital Return	Income Return	Reinvest- ment Return	Total Return	Capital Return	Income Return	Reinvest- ment Return	Total Return	Year- end Yield	Capital Return	Income Return	Reinvest- ment Return	Total Return	Year- end Yield
1971	10.63	3.49	0.18	14.30	6.61	6.32	0.31	13.23	5.97	2.72	5.75	0.25	8.72	5.25
1972	15.79	2.95	0.25	18.99	-0.35	5.87	0.17	5.69	5.99	-0.75	5.75	0.16	5.16	5.85
1973	-17.37	2.86	-0.19	-14.69	-7.70	6.51	0.08	-1.11	7.26	-2.19	6.58	0.22	4.61	6.79
1974	-29.72	3.69	-0.44	-26.47	-3.45	7.27	0.54	4.35	7.60	-1.99	7.24	0.44	5.69	7.12
1975	31.55	5.37	0.31	37.23	0.73	7.99	0.47	9.20	8.05	0.12	7.35	0.36	7.83	7.19
1976	19.15	4.49	0.29	23.93	8.07	7.89	0.80	16.75	7.21	5.25	7.10	0.51	12.87	6.00
1977	-11.50	4.35	0.00	-7.16	-7.86	7.14	0.04	-0.69	8.03	-5.15	6.49	0.06	1.41	7.51
1978	1.06	5.33	0.18	6.57	-9.05	7.90	-0.03	-1.18	8.98	-4.49	7.83	0.14	3.49	8.83
1979	12.31	5.89	0.41	18.61	-9.84	8.86	-0.25	-1.23	10.12	-5.07	9.04	0.12	4.09	10.33
1980	25.77	5.74	0.99	32.50	-14.00	9.97	0.08	-3.95	11.99	-8.81	10.55	0.17	3.91	12.45
1981	-9.73	4.88	-0.08	-4.92	-10.33	11.55	0.64	1.86	13.34	-4.55	12.97	1.03	9.45	13.96
1982	14.76	5.61	1.18	21.55	23.95	13.50	2.91	40.36	10.95	14.23	12.81	2.06	29.10	9.90
1983	17.27	5.04	0.24	22.56	-9.82	10.38	0.09	0.65	11.97	-3.30	10.35	0.35	7.41	11.41
1984	1.40	4.57	0.31	6.27	2.32	11.74	1.42	15.48	11.70	1.22	11.68	1.12	14.02	11.04
1985	26.33	4.72	0.67	31.73	17.84	11.25	1.88	30.97	9.56	9.01	10.29	1.04	20.33	8.55
1986	14.62	3.92	0.13	18.67	14.99	8.98	0.56	24.53	7.89	6.99	7.72	0.43	15.14	6.85
1987	2.03	3.64	-0.41	5.25	-10.69	7.92	0.06	-2.71	9.20	-4.75	7.47	0.19	2.90	8.32
1988	12.40	3.99	0.22	16.61	0.36	8.97	0.34	9.67	9.19	-2.26	8.24	0.13	8.10	9.17
1989	27.25	4.03	0.40	31.69	8.62	8.81	0.68	18.11	8.16	4.34	8.46	0.49	13.29	7.94
1990	-6.56	3.43	0.03	-3.10	-2.61	8.19	0.61	6.18	8.44	1.02	8.15	0.56	9.73	7.70
1991	26.31	3.76	0.40	30.47	10.10	8.22	0.98	19.30	7.30	7.36	7.43	0.67	15.46	5.97
1992	4.46	2.98	0.17	7.62	0.34	7.26	0.45	8.05	7.28	0.64	6.27	0.28	7.19	6.11
1993	7.06	2.91	0.12	10.08	10.71	7.17	0.35	18.24	6.54	5.56	5.53	0.15	11.24	5.22
1994	-1.54	2.83	0.03	1.32	-14.29	6.58	-0.08	-7.77	7.99	-11.14	6.07	-0.08	-5.14	7.80
1995	34.11	3.04	0.43	37.58	23.04	7.80	1.03	31.67	6.03	9.66	6.69	0.45	18.80	5.38
1996	20.26	2.43	0.26	22.96	-7.37	6.18	0.28	-0.93	6.73	-3.90	5.82	0.18	2.10	6.16
1997	31.01	2.10	0.25	33.36	8.51	6.64	0.71	15.85	6.02	1.95	6.14	0.30	8.38	5.73
1998	26.67	1.67	0.24	28.58	8.89	5.83	0.34	13.06	5.42	4.66	5.29	0.25	10.21	4.68
1999	19.53	1.36	0.15	21.04	-14.35	5.57	-0.19	-8.96	6.82	-7.06	5.30	-0.01	-1.77	6.45
2000	-10.14	1.11	-0.07	-9.10	14.38	6.50	0.62	21.48	5.58	5.94	6.19	0.46	12.59	5.07
2001	-13.04	1.18	-0.03	-11.89	-1.89	5.53	0.06	3.70	5.75	3.23	4.27	0.12	7.62	4.42
2002	-23.37	1.39	-0.13	-22.10	11.69	5.58	0.56	17.84	4.84	8.85	3.98	0.30	12.83	2.61
2003	26.38	1.93	0.31	28.68	-3.36	4.80	0.01	1.45	5.11	-0.48	2.85	0.03	2.40	2.97
2004	8.99	1.76	0.13	10.88	3.26	5.02	0.23	8.51	4.84	-1.07	3.28	0.04	2.25	3.47
2005	3.00	1.84	0.07	4.91	3.02	4.69	0.10	7.81	4.61	-2.58	3.92	0.03	1.36	4.34
2006	13.62	2.01	0.17	15.79	-3.64	4.68	0.15	1.19	4.91	-1.51	4.54	0.11	3.14	4.65
2007	2.52	1.95	0.00	4.47	4.69	4.86	0.33	9.88	4.50	5.33	4.44	0.28	10.05	3.26
2008	-30.70	1.34	-0.70	-29.70	-18.25	3.47	-0.12	-14.90	4.58	-4.42	2.01	0.00	-2.40	2.42
2009	23.45	2.48	0.53	26.46	-18.25	3.47	-0.12	-14.90	4.58	-4.42	2.01	0.00	-2.40	2.42
2010	12.78	2.02	0.26	15.06	5.89	4.25	0.00	10.14	4.14	5.16	1.92	0.04	7.12	1.70
2011	0.00	2.13	-0.01	2.11	23.74	3.81	0.68	28.23	2.48	7.79	1.58	0.09	9.46	0.59
2012	13.41	2.50	0.10	16.00	0.89	2.40	0.02	3.31	2.41	1.48	0.58	0.01	2.07	0.46
2013	29.60	2.48	0.32	32.39	-14.83	2.86	0.61	-11.36	3.67	-1.91	0.85	0.00	-1.07	1.13
2014	11.39	2.16	0.14	13.69	20.17	3.33	0.36	23.87	2.40	1.72	1.36	0.01	3.12	1.24

Annual Total Return
Table 2-3 shows classes and inflation can be used to classes; small-cap term government bonds, Treasury I Appendix A: Tab A-15, respectively

Rolling-Period Return
Tables 2-4, 2-5, a returns of the six and 20-year hold are referred to as obtained by rolling each time series: behavior of return actually experienced time diversification has the effect of increasing asset value.

The highest and lowest expressed as annual and 20-year holding shows the number return, and the number was the highest number of observations times positive (or number of observations) producing five-year, 80 20-year holding period

Portfolio Performance
A portfolio is a group

cash generally do not or market stimulus produce a better return years in which stock returns were down Table 2-2. These of increasing portfolio volatility years 2000 through of -9.10%, -11.89%

Table 2-3: Basic Series
Annual Total Returns (%)

Year	Large-Cap Stocks	Small-Cap Stocks	Long-Term Corp Bonds	Long-Term Govt Bonds	Inter-Term Govt Bonds	U.S. Treasury Bills	Inflation	Year	Large-Cap Stocks	Small-Cap Stocks	Long-Term Corp Bonds	Long-Term Govt Bonds	Inter-Term Govt Bonds	U.S. Treasury Bills	Inflation
1926	11.62	0.28	7.37	7.77	5.38	3.27	-1.49	1971	14.30	16.50	11.01	13.23	8.72	4.39	3.36
1927	37.49	22.10	7.44	8.93	4.52	3.12	-2.08	1972	18.99	4.43	7.26	5.69	5.16	3.84	3.41
1928	43.61	39.69	2.84	0.10	0.92	3.56	-0.97	1973	-14.69	-30.90	1.14	-1.11	4.61	6.93	8.80
1929	-8.42	-51.36	3.27	3.42	6.01	4.75	0.20	1974	-26.47	-19.95	-3.06	4.35	5.69	8.00	12.20
1930	-24.90	-38.15	7.98	4.66	6.72	2.41	-6.03	1975	37.23	52.82	14.64	9.20	7.83	5.60	7.01
1931	-43.34	-49.75	-1.85	-5.31	-2.32	1.07	-8.52	1976	23.93	57.38	16.65	16.75	12.87	5.08	4.81
1932	-8.19	-5.39	10.82	16.84	8.81	0.96	-10.30	1977	-7.16	25.38	1.71	-0.69	1.41	5.12	6.77
1933	53.98	142.87	10.38	-0.07	1.83	0.30	0.51	1978	6.57	23.46	-0.07	-1.16	3.49	7.18	9.03
1934	-1.44	24.22	13.84	10.03	9.00	0.16	2.03	1979	18.61	43.46	-4.18	-1.23	4.09	10.38	13.31
1935	47.67	40.19	9.61	4.98	7.01	0.17	2.99	1980	32.50	39.88	-2.76	-3.95	3.91	11.24	12.40
1936	33.92	64.80	6.74	7.52	3.06	0.18	1.21	1981	-4.92	13.88	-1.24	1.86	9.45	14.71	8.94
1937	-35.03	-58.01	2.75	0.23	1.56	0.31	3.10	1982	21.55	28.01	42.56	40.36	29.10	10.54	3.87
1938	31.12	32.80	6.13	5.53	6.23	-0.02	-2.78	1983	22.58	39.67	8.26	0.85	7.41	8.80	3.80
1939	-0.41	0.35	3.97	5.94	4.52	0.02	-0.46	1984	6.27	-6.67	16.86	15.48	14.02	9.85	3.95
1940	-9.78	-5.16	3.39	6.09	2.96	0.00	0.96	1985	31.73	24.66	30.09	30.97	20.33	7.72	3.77
1941	-11.59	-9.00	2.73	0.93	0.50	0.06	9.72	1986	18.67	6.85	19.85	24.53	15.14	6.16	1.13
1942	20.34	44.51	2.60	3.22	1.94	0.27	9.29	1987	5.25	-9.30	-0.27	-2.71	2.90	5.47	4.41
1943	25.90	88.37	2.83	2.08	2.81	0.35	3.16	1988	16.61	22.87	10.70	9.67	6.10	6.35	4.42
1944	19.75	53.72	4.73	2.81	1.80	0.33	2.11	1989	31.89	10.18	16.23	18.11	13.29	8.37	4.65
1945	36.44	73.61	4.08	10.73	2.22	0.33	2.25	1990	-3.10	-21.56	6.78	6.18	9.73	7.81	6.11
1946	-8.07	-11.63	1.72	-0.10	1.00	0.35	18.16	1991	30.47	44.63	19.89	19.30	15.46	5.60	3.06
1947	5.71	0.92	-2.34	-2.62	0.91	0.50	9.01	1992	7.62	23.35	8.39	8.05	7.19	3.51	2.90
1948	5.50	-2.11	4.14	3.40	1.85	0.81	2.71	1993	10.08	20.98	13.19	18.24	11.24	2.90	2.75
1949	18.79	19.75	3.31	6.45	2.32	1.10	-1.80	1994	1.32	3.11	-5.76	-7.77	-5.14	3.90	2.67
1950	31.71	38.75	2.12	0.06	0.70	1.20	5.79	1995	37.58	34.46	27.20	31.67	16.80	5.60	2.54
1951	24.02	7.80	-2.69	-3.93	0.36	1.49	5.87	1996	22.96	17.62	1.40	-8.93	2.10	5.21	3.32

1959	11.96	16.40	-0.97	-2.26	-0.39	2.95	1.50	2004	10.88	18.39	8.72	8.51	2.25	1.20	3.26
1960	0.47	-3.29	9.07	13.76	11.76	2.66	1.48	2005	4.91	5.69	5.07	7.81	1.36	2.98	3.42
1961	26.89	32.09	4.82	0.97	1.85	2.13	0.67	2006	15.79	16.17	3.24	1.19	3.14	4.80	2.54
1962	-8.73	-11.90	7.95	6.88	5.56	2.73	1.22	2007	5.48	-5.22	2.60	9.88	10.05	4.58	4.08
1963	22.80	23.57	2.19	1.21	1.84	3.12	1.65	2008	-37.00	-38.72	8.78	25.87	13.11	1.80	0.09
1964	16.48	23.52	4.77	3.51	4.04	3.54	1.19	2009	26.46	28.09	3.02	-14.80	-2.40	0.10	2.72
1965	12.45	41.75	-0.46	0.71	1.02	3.93	1.82	2010	15.06	31.25	12.44	10.14	7.12	0.12	1.50
1966	-10.06	-7.01	0.20	3.65	4.69	4.76	3.35	2011	2.11	-3.25	17.55	28.23	9.46	0.04	2.96
1967	23.96	83.57	-4.95	-9.18	1.01	4.21	3.04	2012	16.00	18.24	10.88	3.31	2.07	0.06	1.74
1968	11.06	35.97	2.57	-0.26	4.54	5.21	4.72	2013	32.39	45.07	-7.07	-11.36	-1.07	0.02	1.50
1969	-8.50	-25.05	-8.09	-5.07	-0.74	6.58	8.11	2014	13.69	2.92	17.28	23.87	3.12	0.02	0.76
1970	3.86	-17.43	18.37	12.11	16.86	6.52	5.49								

Company Size and Return

One of the most remarkable discoveries of modern finance is the finding of a relationship between company size and return.¹ Historically on average, small companies have higher returns than those of large ones. Earlier chapters of this book document this phenomenon for the smallest stocks on the New York Stock Exchange, or NYSE. The relationship between company size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. This chapter examines returns across the entire range of company size.

Construction of the Size Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices, or CRSP, at the University of Chicago's Booth School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The NYSE universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of all their eligible equity securities. The companies are then split into 10 equally populated groups or deciles. Eligible companies traded on the NYSE, the NYSE MKT LLC (formerly known as the American Stock Exchange, or AMEX), and the NASDAQ Stock Market (formerly the NASDAQ National Market) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the

decile that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the portfolio. When a month-end NYSE price is missing, the month-end value is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value is not available, the last available daily price is used.

In October 2008, NYSE Euronext acquired the American Stock Exchange and rebranded the index as NYSE Amex. Later, in May 2012, it was renamed NYSE MKT LLC. For the sake of continuity, we refer to this index as AMEX, its historical name.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices. Appropriate adjustments are made to prices to account for stock splits and dividends. The return on a portfolio for one month is calculated as the value weighted average of the returns for the individual stocks in the portfolio. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Aspects of the Company Size Effect

The company size phenomenon is remarkable in several ways. First, the greater risk of small-cap does not, in the context of the capital asset pricing model, fully account for their higher returns over the long term. In the CAPM only systematic, or beta risk, is rewarded; small-cap stock returns have exceeded those implied by their betas.

Second, the calendar annual return differences between small- and large-cap companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large-cap stocks and in most other equity markets but is evident in the size premium series.

Third, the size effect is seasonal. For example, small-cap stocks outperformed large-cap stocks in January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These ~~the impact of the size effect—long-term returns in~~ excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles and size groupings from 1926 to 2014 are presented in Table 7-1. Note that the average return in this table tends to increase as one moves from the largest decile to the smallest.

Because securities are ranked quarterly, returns on the ninth and 10th deciles are different than those suggested by the small-cap stock index presented in earlier chapters. A detailed methodology for the small-cap stock index is included in Chapter 3.

The total risk, or standard deviation of annual returns, also increases with decreasing company size. The serial correlations of returns are near zero for all but the smallest decile.

Table 7-2 is a year-by-year history of the returns for the different size categories. Table 7-3 shows the growth of \$1.00 invested in each of the categories at year-end 1925. Please note that decile data from CRSP was updated for the 2015 edition of the Classic Yearbook. The update resulted in some significant differences in the decile data, most notably in the 2014 index values in Table 7-3.

The sheer magnitude of the size effect in some years is noteworthy. While the largest stocks actually declined in 2001, the smallest stocks rose more than 30%. A more extreme case occurred in the depression-recovery year of 1933, when the difference between the first and 10th decile returns was far more substantial.

The divergence in the performance of small- and large-cap stocks is evident. In 30 of the 89 years since 1926, the difference between the total returns of the largest stocks (decile 1) and the smallest stocks (decile 10) has been greater than 25 percentage points.

Table 7-1: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ
Summary Statistics of Annual Returns

Decile	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
1-Largest	9.4	11.2	15.1	0.07
2	10.7	13.0	21.7	0.01
3	11.1	13.7	23.5	-0.03
4	11.0	14.0	25.8	-0.03
5	11.7	14.8	26.4	-0.03
6	11.5	15.0	27.3	0.01
7	11.6	15.5	29.2	0.01
8	11.7	16.3	33.3	0.00
9	11.6	17.1	37.4	0.06
10-Smallest	13.5	20.6	42.8	0.14
Mid Cap	11.2	14.0	24.6	-0.03
Low Cap	11.6	15.4	26.9	0.01
Micro	12.3	18.3	39.1	0.08
Total Value Weighted Index	9.9	11.9	20.2	0.01

Data from 1926–2014. Source: Morningstar and CRSP. Calculated (or derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP), The University of Chicago Booth School of Business. Used with permission.

Results are for quarterly re-ranking for the deciles. The small-cap stock summary statistics presented in earlier chapters include a re-ranking of the portfolios every five years prior to 1982.

Third, the size effect is seasonal. For example, small-cap stocks outperformed large-cap stocks in January in a large majority of the years. Such predictability is surprising and suspicious in light of modern capital market theory. These three aspects of the size effect—long-term returns in excess of systematic risk, serial correlation, and seasonality—will be analyzed thoroughly in the following sections.

Presentation of the Decile Data

Summary statistics of annual returns of the 10 deciles and size groupings from 1926 to 2014 are presented in Table 7-1. Note that the average return in this table tends to increase as one moves from the largest decile to the smallest.

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The total risk, or standard deviation of annual returns, also increases with decreasing company size. The serial correlations of returns are near zero for all but the smallest decile.

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5	11.7	14.8	26.4	-0.03
6	11.5	15.0	27.3	0.01
7	11.6	15.5	29.2	0.01
8	11.7	16.3	33.3	0.00
9	11.8	17.1	37.4	0.06
10-Smallest	13.5	20.5	42.8	0.14
Mid Cap	11.2	14.0	24.6	-0.03
Low Cap	11.6	15.4	28.9	0.01
Micro	12.3	18.3	39.1	0.08
Total Value Weighted Index	9.9	11.9	20.2	0.01

Date from 1926–2014. Source: Morningstar and CRSP. Calculated for Derived based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

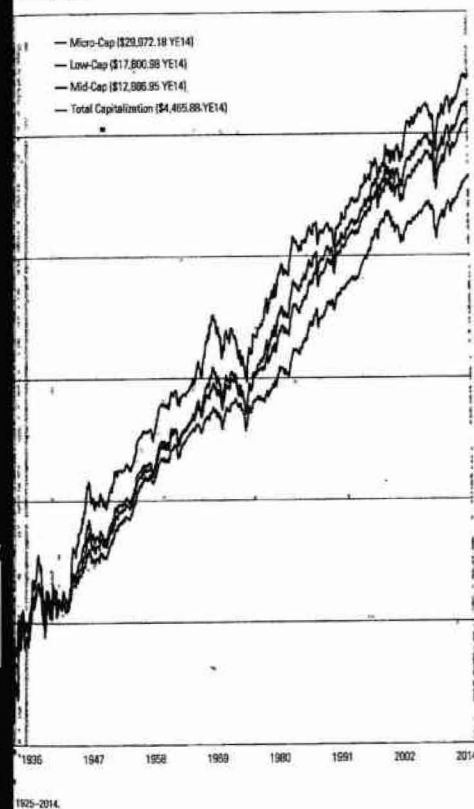
Results are for quarterly re-ranking for the deciles. The small-cap stock category includes firms not in either portfolio including a re-ranking of the portfolios every five years prior to 1982.

Table 7-4: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ (Continued)
Mid-, Low-, Micro-, and Total Capitalization Returns and Index Value

Year	Total Return		
	Mid-Cap	Low-Cap	Micro-Cap
	Stocks	Stocks	Stocks
1971	0.2123	0.2032	0.1787
1972	0.0906	0.0558	-0.0138
1973	-0.2594	-0.3435	-0.4078
1974	-0.2513	-0.2587	-0.2676
1975	0.5709	0.6092	0.7150
1976	0.3979	0.5074	0.5395
1977	0.0395	0.1708	0.2177
1978	0.1075	0.1663	0.2245
1979	0.3298	0.4626	0.4369
1980	0.3144	0.3310	0.3464
1981	0.0409	0.0305	0.0618
1982	0.2443	0.2939	0.2723
1983	0.2644	0.2882	0.3410
1984	-0.0103	-0.0224	-0.1403
1985	0.3115	0.3283	0.2833
1986	0.1837	0.0677	0.0320
1987	0.0130	-0.0689	-0.1381
1988	0.2167	0.2476	0.2192
1989	0.2479	0.1923	0.0815
1990	-0.1053	-0.1779	-0.2745
1991	0.4191	0.4865	0.5005
1992	0.1611	0.1738	0.2814
1993	0.1627	0.1830	0.2010
1994	-0.0263	-0.0152	-0.0314
1995	0.3405	0.2943	0.3320
1996	0.1683	0.1806	0.1930
1997	0.2327	0.2799	0.2402
1998	0.0578	0.0052	-0.0813
1999	0.3068	0.3291	0.3145
2000	-0.0783	-0.1107	-0.1331
2001	-0.0277	0.1313	0.3372
2002	-0.1853	-0.2164	-0.1386
2003	0.4150	0.5155	0.7832
2004	0.1817	0.2109	0.1861
2005	0.1104	0.0677	0.0386
2006	0.1391	0.1619	0.1798
2007	0.0489	0.0002	-0.0789
2008	-0.3817	-0.3756	-0.4157
2009	0.4181	0.4356	0.6124
2010	0.2746	0.3034	0.2900
2011	-0.0078	-0.0388	-0.1050
2012	0.1627	0.1836	0.1742
2013	0.3917	0.4337	0.4971
2014	0.0835	0.0433	0.0241

Source: Morningstar and CRSP. Calculated (or Derived) based on data from ©2015 Center for Research in Security Prices (CRSP), The University of C

Size Decile Portfolios of the NYSE/AMEX/NASDAQ
Index Values of Investments in Mid-, Low-, Micro-, and Total Capitalization Stocks
End 1925 = \$1.00



In Table 7-4, the decile returns and index values of the NYSE/AMEX/NASDAQ population are broken down into mid-cap, low-cap, and micro-cap stocks. Mid-cap stocks are defined here as the aggregate of deciles three through five. Based on the most recent data, as shown in the bottom section of Table 7-5, companies within the mid-cap range have market capitalizations at or below \$10,105,622,000 but greater than \$2,552,441,000. Low-cap stocks include deciles 6-8, and currently include all companies in the NYSE/AMEX/NASDAQ with market capitalizations at or below \$2,542,913,000 but greater than \$549,056,000. Micro-cap stocks include deciles 9-10, and include companies with market capitalizations at or below \$548,839,000. The returns and index values of the entire NYSE/AMEX/NASDAQ population are also included. All returns presented are value-weighted based on the market capitalizations of the deciles contained in each subgroup. Graph 7-1 depicts the growth of \$1.00 invested in each of these capitalization groups as well as the entire NYSE/AMEX/NASDAQ.

Size of the Deciles

Table 7-5 reveals that the top three deciles of the NYSE/AMEX/NASDAQ account for most of the total market value of its stocks. More than 60% of the market value is represented by the first decile, which consists of 185 stocks, while the smallest decile accounts for less than 1% of the market value. The data in the second column of Table 7-5 are averages across all 99 years. Of course, the proportion of market value represented by the various deciles varies from year to year.

Columns three and four give recent figures on the number of companies and their market capitalization, presenting a snapshot of the structure of the deciles as of Sept. 30, 2014.

The lower portion of Table 7-5 shows the largest firm in each decile and its market capitalization.

Table 7-5: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Number of Companies, Historical and Recent Market Capitalization

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in Thousands)	Recent Percentage of Total Capitalization
1-Largest	64.03%	185	14,808,784,274	64.25%
2	14.04	199	3,247,447,914	14.09
3	6.88	194	1,579,432,904	6.85
4	4.56	221	1,042,428,212	4.52
5	3.03	215	694,147,086	3.01
6	2.56	265	585,657,120	2.54
7	1.99	317	449,325,255	1.95
8	1.51	417	333,731,801	1.45
9	0.80	395	173,673,205	0.75
10-Smallest	0.61	948	135,401,288	0.59
Mid-Cap 3-5	14.47	630	3,916,008,202	14.39
Low-Cap 6-8	6.05	999	1,368,714,176	5.94
Micro-Cap 9-10	1.41	1,343	309,074,493	1.34

Data from 1926-2014. Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

Historical average percentage of total capitalization shows the average, over the last 89 years, of the decile market values as a percentage of the total NYSE/AMEX/NASDAQ calculated each month. Number of companies in deciles, recent market capitalization of deciles, and recent percentage of total capitalization are as of Sept. 30, 2014.

Decile	Recent Market Capitalization (in Thousands)	Company Name
1-Largest	\$591,015,721	Apple Inc
2	24,272,637	Cummins Inc
3	10,105,622	Murphy Oil Corp
4	5,844,592	Alaska Airgroup Inc
5	3,724,186	Great Plains Energy Inc
6	2,542,913	Wolverine World Wide Inc
7	1,686,860	Wesco Aircraft Holdings Inc
8	1,010,634	First Bancorp P R
9	548,839	G P Strategies Corp
10-Smallest	360,725	M V Oil Trust

Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission. Market capitalization and name of largest company in each decile are as of Sept. 30, 2014.

Long-Term Returns in Excess of Systematic Risk

The capital asset pricing model, or CAPM, does not fully account for the higher returns of small-cap stocks. Table 7-6 shows the returns in excess of the riskless rate over the past 89 years for each decile of the NYSE/AMEX/NASDAQ.

The CAPM can be expressed as follows:

$$k_s = r_f + (\beta_s \times ERP) \quad (28)$$

where,

- k_s = the expected return for company s ;
- r_f = the expected return of the riskless asset;
- β_s = the beta of the stock of company s ; and,
- ERP = the expected equity risk premium, or the amount by which investors expect the future return on equities to exceed that on the riskless asset.

Table 7-6 uses the CAPM to estimate the return in excess of the riskless rate and compares this estimate to historical performance. According to the CAPM, the expected return on a security should consist of the riskless rate plus an additional return to compensate for the systematic risk of the security. The return in excess of the riskless rate is estimated in the context of the CAPM by multiplying the equity risk premium by β (beta). The equity risk premium is the return that compensates investors for taking on risk equal to the risk of the market as a whole (systematic risk). Beta measures the extent to which a security or portfolio is exposed to systematic risk. The beta of each decile indicates the degree to which the decile's return moves with that of the overall market.

A beta greater than one indicates that the security or portfolio has greater systematic risk than the market; according to the CAPM equation, investors are compensated for taking on this additional risk. Yet, Table 7-6 illustrates that the smaller deciles have had returns that are not fully explained by their higher betas. This return in excess that predicted by CAPM increases as one moves from the largest companies in decile 1 to the smallest in decile 10. The excess return is especially pronounced for micro cap stocks (deciles 9-10). This size-related phenomenon has prompted a revision to the CAPM, which includes a size premium.

Table 7-5: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Number of Companies, Historical and Recent Market Capitalization

Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in Thousands)	Recent Percentage of Total Capitalization
1-Largest	84.03%	185	14,808,784,274	84.25%
2	14.04	199	3,247,447,914	14.09
3	6.88	194	1,579,432,904	6.85
4	4.56	221	1,042,428,212	4.52
5	3.03	215	694,147,086	3.01
6	2.58	265	585,657,120	2.54
7	1.99	317	449,325,255	1.96
8	1.51	417	333,731,801	1.45
9	0.80	385	173,673,205	0.75
10-Smallest	0.61	948	135,401,286	0.59
Mid-Cap 3-5	14.47	630	3,316,008,202	14.39
Low-Cap 6-8	6.05	999	1,368,714,176	5.94
Micro-Cap 9-10	1.41	1,343	309,074,493	1.34

Data from 1926-2014. Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

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Decile	Recent Market Capitalization (in Thousands)	Company Name
1-Largest	\$591,015,721	Apple Inc.
2	24,272,837	Cummins Inc.
3	10,105,622	Murphy Oil Corp.
4	5,844,582	Alaska Airgroup Inc.
5	3,724,186	Great Plains Energy Inc.
6	2,542,913	Wolverine World Wide Inc.
7	1,686,880	Wesco Aircraft Holdings Inc.
8	1,010,634	First Bancorp P R.
9	548,839	G P Strategies Corp.
10-Smallest	300,725	M V Oil Trust

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Decile	Historical Average Percentage of Total Capitalization	Recent Number of Companies	Recent Decile Market Capitalization (in Thousands)	Recent Percentage of Total Capitalization
1-Largest	64.03%	185	14,808,784,274	64.25%
2	14.04	199	3,247,447,914	14.09
3	6.88	194	1,578,432,904	6.85
4	4.56	221	1,042,428,212	4.52
5	3.03	215	694,147,086	3.01
6	2.56	265	585,657,120	2.54
7	1.99	317	449,325,255	1.95
8	1.51	417	333,731,801	1.45
9	0.80	395	173,673,205	0.75
10-Smallest	0.61	948	135,401,288	0.58
Mid-Cap 3-5	14.47	630	3,316,008,202	14.39
Low-Cap 6-8	6.05	999	1,368,714,176	5.94
Micro-Cap 9-10	1.41	1,343	309,074,493	1.34

Data from 1976-2014. Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indicas Database ©2015 Center for Research in Security Prices (CRSP®). The University of Chicago Booth School of Business. Used with permission.

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3	10,105,622	Murphy Oil Corp.
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Table 7-6, Graph 7-2

This phenomenon can also be viewed graphically, as depicted in the Graph 7-2. The security market line is based on the pure CAPM without adjusting for the size premium. Based on the risk (or beta) of a security, the expected return should fluctuate along the security market line. However, the expected returns for the smaller deciles of the NYSE/AMEX/NASDAQ lie above the line, indicating that these deciles have had returns in excess of those appropriate for their systematic risk.

Table 7-6: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Long-Term Returns in Excess of CAPM

Decile	Beta*	Arithmetic Mean Return (%)	Actual Return in Excess of Riskless Rate** (%)	CAPM Return in Excess of Riskless Rate† (%)	Size Premium (Return in Excess of CAPM) (%)
1	0.92	11.15	6.08	6.44	-0.36
2	1.04	12.96	7.89	7.26	0.63
3	1.11	13.71	8.64	7.73	0.91
4	1.13	14.01	8.93	7.88	1.06
5	1.17	14.84	9.76	8.16	1.60
6	1.17	15.01	9.94	8.21	1.74
7	1.25	15.53	10.46	8.75	1.71
8	1.30	16.35	11.27	9.12	2.15
9	1.34	17.13	12.06	9.36	2.69
10	1.40	20.62	15.54	9.76	5.78
Mid-Cap, 3-5	1.12	14.00	8.93	7.86	1.07
Low-Cap, 6-9	1.22	15.44	10.36	8.56	1.80
Micro-Cap, 9-10	1.35	18.26	13.18	9.45	3.74

Data from 1926–2014.

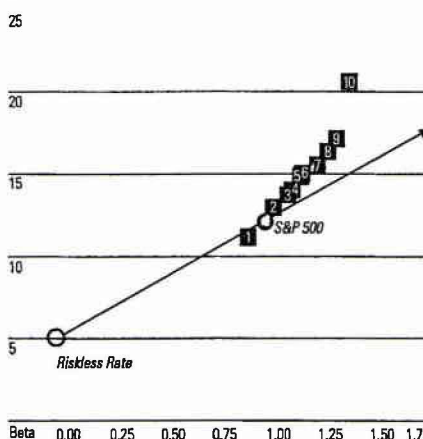
* Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1926–December 2014.

** Historical riskless rate measured by the 89-year arithmetic mean income return component of 20-year government bonds (5.07%).

† Calculated in the context of the CAPM by multiplying the equity risk premium by beta. The equity risk premium is estimated by the arithmetic mean total return of the S&P 500 (12.07%) minus the arithmetic mean income return component of 20-year government bonds (5.07%) from 1926–2014.

Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database ©2015 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Used with permission.

Graph 7-2: Security Market Line Versus Size-Decile Portfolios of the NYSE/AMEX/NASDAQ



Data from 1926–2014.

Serial Correlation in Small-Cap Stock Returns

In four of the last 10 years, large-capitalization stocks (deciles 1-2 of NYSE/AMEX/NASDAQ) have outperformed small-capitalization stocks (deciles 9-10). This has led some market observers to speculate that there is no size premium. But statistical evidence suggests that periods of underperformance should be expected. For instance, large-cap stocks have outperformed small-cap stocks in nearly half of the years since 1926. It should be noted, however, that large-cap stocks' average historical outperformance has been less than the average historical outperformance of small-cap stocks.

History tells us that small companies are riskier than large companies. Table 7-1 [see page 100] shows the standard deviation (a measure of risk) for each decile of the NYSE/AMEX/NASDAQ. As one moves from larger to smaller deciles, the standard deviation of return grows. Investors are compensated for taking on this additional risk by the higher returns provided by small companies. It is important to note, however, that the risk/return profile is over the long term. If small companies did not provide higher long-term returns, investors would be more inclined to invest in the less-risky stocks of large companies.

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Table 7-6: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Long-Term Returns in Excess of CAPM

Decile	Beta*	Arithmetic Mean Return (%)	Actual Return in Excess of Riskless Rate** (%)	CAPM Return in Excess of Riskless Rate* (%)	Size Premium (Return in Excess of CAPM) (%)
1	0.91	11.15	6.08	6.40	-0.32
2	1.04	12.96	7.89	7.24	0.65
3	1.10	13.71	8.64	7.70	0.94
4	1.13	14.01	8.93	7.88	1.05
5	1.16	14.84	9.76	8.11	1.65
6	1.19	15.01	9.94	8.31	1.63
7	1.24	15.53	10.46	8.69	1.77
8	1.30	16.35	11.27	9.10	2.18
9	1.35	17.13	12.06	9.42	2.64
10	1.40	20.62	15.54	9.82	5.72
Mid-Cap, 3-5	1.12	14.00	8.93	7.83	1.10
Low-Cap, 6-8	1.23	15.44	10.36	8.59	1.77
Micro-Cap, 9-10	1.36	18.26	13.18	9.49	3.69

Data from 1928-2014.

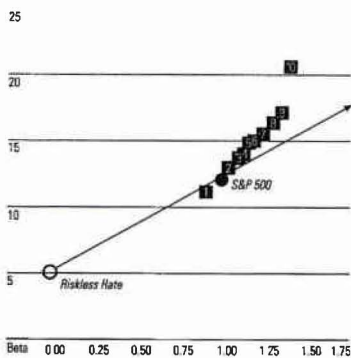
*Betas are estimated from monthly returns in excess of the 30-day U.S. Treasury bill total return, January 1928-December 2014.

**Historical riskless rate measured by the 89-year arithmetic mean income return component of 20-year government bonds (5.07%).

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12/31/2016

		Company Name	AMERICAN STATES WATER CO	AMERICAN WATER WORKS CO INC	AQUA AMERICA INC	ARTESIAN RESOURCES -CL A	CALIFORNIA WATER SERVICE GP	CONNECTICUT WATER SVC INC	MIDDLESEX WATER CO	SJW GROUP	YORK WATER CO	
Month End	12/31/2016	0	Enterprise value to Net PPE	1,827	1,472	1,465	0,941	1,223	1,438	1,679	1,332	2,138
Month End	11/30/2016	-1	Enterprise value to Net PPE	1,724	1,474	1,454	0,928	1,240	1,413	1,608	1,292	2,051
Month End	10/31/2016	-2	Enterprise value to Net PPE	1,645	1,494	1,489	0,863	1,147	1,367	1,458	1,240	1,821
Month End	9/30/2016	-3	Enterprise value to Net PPE	1,666	1,531	1,501	0,885	1,202	1,341	1,453	1,147	1,745
Month End	8/31/2016	-4	Enterprise value to Net PPE	1,631	1,520	1,499	0,863	1,159	1,276	1,392	1,130	1,678
Month End	7/31/2016	-5	Enterprise value to Net PPE	1,770	1,635	1,654	0,997	1,246	1,365	1,648	1,123	1,829
Month End	6/30/2016	-6	Enterprise value to Net PPE	1,814	1,673	1,708	1,015	1,289	1,480	1,732	1,078	1,877
Month End	5/31/2016	-7	Enterprise value to Net PPE	1,652	1,531	1,583	0,895	1,130	1,322	1,517	0,990	1,631
Month End	4/30/2016	-8	Enterprise value to Net PPE	1,741	1,514	1,559	0,868	1,096	1,297	1,505	0,988	1,758
Month End	3/31/2016	-9	Enterprise value to Net PPE	1,685	1,464	1,585	0,901	1,079	1,267	1,338	1,052	1,815
Month End	2/29/2016	-10	Enterprise value to Net PPE	1,790	1,407	1,537	0,905	1,022	1,198	1,241	1,051	1,677
Month End	1/31/2016	-11	Enterprise value to Net PPE	1,901	1,416	1,569	0,946	1,033	1,223	1,274	0,982	1,623
Month End	12/31/2015	-12	Enterprise value to Net PPE	1,797	1,374	1,522	0,894	0,976	1,147	1,228	0,933	1,553
Month End	11/30/2015	-13	Enterprise value to Net PPE	1,792	1,345	1,505	0,867	0,954	1,112	1,198	0,947	1,501
Month End	10/31/2015	-14	Enterprise value to Net PPE	1,774	1,343	1,479	0,826	0,949	1,121	1,200	0,972	1,474
Month End	9/30/2015	-15	Enterprise value to Net PPE	1,796	1,325	1,418	0,834	0,968	1,129	1,144	0,973	1,373
Month End	8/31/2015	-16	Enterprise value to Net PPE	1,662	1,278	1,374	0,791	0,925	1,091	1,107	0,934	1,383
Month End	7/31/2015	-17	Enterprise value to Net PPE	1,712	1,277	1,379	0,775	0,951	1,075	1,105	0,954	1,388
Month End	6/30/2015	-18	Enterprise value to Net PPE	1,651	1,239	1,354	0,774	0,993	1,099	1,111	0,977	1,381
Month End	5/31/2015	-19	Enterprise value to Net PPE	1,690	1,304	1,427	0,781	1,024	1,122	1,086	0,966	1,457
Month End	4/30/2015	-20	Enterprise value to Net PPE	1,696	1,328	1,447	0,784	1,024	1,137	1,118	0,949	1,596
Month End	3/31/2015	-21	Enterprise value to Net PPE	1,769	1,326	1,431	0,795	1,049	1,137	1,134	0,999	1,556
Month End	2/28/2015	-22	Enterprise value to Net PPE	1,778	1,323	1,432	0,801	1,077	1,152	1,151	1,045	1,522
Month End	1/31/2015	-23	Enterprise value to Net PPE	1,766	1,352	1,456	0,809	1,050	1,128	1,102	1,053	1,522
Month End	12/31/2014	-24	Enterprise value to Net PPE	1,713	1,327	1,476	0,815	1,050	1,154	1,170	1,025	1,508
Month End	11/30/2014	-25	Enterprise value to Net PPE	1,606	1,323	1,471	0,793	1,064	1,122	1,134	0,981	1,355
Month End	10/31/2014	-26	Enterprise value to Net PPE	1,652	1,327	1,458	0,808	1,093	1,173	1,149	1,021	1,447
Month End	9/30/2014	-27	Enterprise value to Net PPE	1,448	1,276	1,371	0,770	1,009	1,080	1,058	0,927	1,370
Month End	8/31/2014	-28	Enterprise value to Net PPE	1,522	1,314	1,433	0,792	1,069	1,090	1,092	0,937	1,379
Month End	7/31/2014	-29	Enterprise value to Net PPE	1,456	1,268	1,381	0,803	1,020	1,065	1,081	0,926	1,328
Month End	6/30/2014	-30	Enterprise value to Net PPE	1,596	1,300	1,502	0,821	1,072	1,124	1,110	0,938	1,418
Month End	5/31/2014	-31	Enterprise value to Net PPE	1,479	1,287	1,467	0,818	1,005	1,083	1,085	0,935	1,395
Month End	4/30/2014	-32	Enterprise value to Net PPE	1,482	1,237	1,454	0,808	1,019	1,092	1,080	0,939	1,380
Month End	3/31/2014	-33	Enterprise value to Net PPE	1,574	1,244	1,446	0,823	1,062	1,129	1,143	0,986	1,398
Month End	2/28/2014	-34	Enterprise value to Net PPE	1,485	1,235	1,449	0,806	1,048	1,097	1,083	0,985	1,381
Month End	1/31/2014	-35	Enterprise value to Net PPE	1,420	1,197	1,396	0,822	1,041	1,117	1,072	0,965	1,391
Month End	12/31/2013	-36	Enterprise value to Net PPE	1,468	1,203	1,416	0,838	1,025	1,224	1,128	0,992	1,434
Month End	11/30/2013	-37	Enterprise value to Net PPE	1,486	1,205	1,437	0,853	1,018	1,206	1,166	0,943	1,485
Month End	10/31/2013	-38	Enterprise value to Net PPE	1,457	1,212	1,483	0,836	0,984	1,142	1,118	0,958	1,420
Month End	9/30/2013	-39	Enterprise value to Net PPE	1,472	1,215	1,493	0,830	0,966	1,146	1,148	0,962	1,403
Month End	8/31/2013	-40	Enterprise value to Net PPE	1,420	1,206	1,474	0,821	0,954	1,105	1,099	0,922	1,374
Month End	7/31/2013	-41	Enterprise value to Net PPE	1,654	1,237	1,592	0,855	1,013	1,102	1,138	0,956	1,459
Month End	6/30/2013	-42	Enterprise value to Net PPE	1,439	1,215	1,518	0,837	0,938	1,084	1,090	0,963	1,353
Month End	5/31/2013	-43	Enterprise value to Net PPE	1,428	1,194	1,511	0,833	0,945	1,075	1,066	0,982	1,356
Month End	4/30/2013	-44	Enterprise value to Net PPE	1,477	1,226	1,529	0,862	0,956	1,078	1,079	0,945	1,339
Month End	3/31/2013	-45	Enterprise value to Net PPE	1,549	1,218	1,542	0,846	1,015	1,093	1,102	0,947	1,350
Month End	2/28/2013	-46	Enterprise value to Net PPE	1,449	1,182	1,458	0,840	0,951	1,082	1,097	0,946	1,327
Month End	1/31/2013	-47	Enterprise value to Net PPE	1,399	1,162	1,391	0,848	0,935	1,077	1,092	0,959	1,351
Month End	12/31/2012	-48	Enterprise value to Net PPE	1,341	1,155	1,348	0,851	0,900	1,236	1,096	0,947	1,286
Month End	11/30/2012	-49	Enterprise value to Net PPE	1,289	1,173	1,353	0,815	0,890	1,138	1,065	0,901	1,279
Month End	10/31/2012	-50	Enterprise value to Net PPE	1,244	1,147	1,346	0,852	0,902	1,131	1,088	0,896	1,273
Month End	9/30/2012	-51	Enterprise value to Net PPE	1,285	1,185	1,327	0,865	0,941	1,174	1,087	0,937	1,345
Month End	8/31/2012	-52	Enterprise value to Net PPE	1,267	1,181	1,335	0,841	0,930	1,152	1,072	0,894	1,309
Month End	7/31/2012	-53	Enterprise value to Net PPE	1,203	1,170	1,354	0,827	0,936	1,138	1,069	0,893	1,326
Month End	6/30/2012	-54	Enterprise value to Net PPE	1,203	1,153	1,382	0,837	0,926	1,128	1,082	0,910	1,326
Month End	5/31/2012	-55	Enterprise value to Net PPE	1,145	1,152	1,311	0,774	0,894	1,103	1,053	0,891	1,278
Month End	4/30/2012	-56	Enterprise value to Net PPE	1,137	1,152	1,296	0,782	0,915	1,108	1,065	0,912	1,301
Month End	3/31/2012	-57	Enterprise value to Net PPE	1,141	1,196	1,293	0,787	0,928	1,125	1,084	0,919	1,299
Month End	2/29/2012	-58	Enterprise value to Net PPE	1,151	1,200	1,290	0,792	0,958	1,134	1,064	0,913	1,298
Month End	1/31/2012	-59	Enterprise value to Net PPE	1,137	1,190	1,282	0,788	0,935	1,172	1,081	0,909	1,323
Month End	12/31/2011	-60	Enterprise value to Net PPE	1,115	1,169	1,323	0,793	0,918	1,069	1,084	0,911	1,323
Month End	11/30/2011	-61	Enterprise value to Net PPE	1,123	1,155	1,317	0,786	0,923	1,115	1,078	0,935	1,338
Month End	10/31/2011	-62	Enterprise value to Net PPE	1,114	1,145	1,328	0,774	0,927	1,058	1,094	0,903	1,285
Month End	9/30/2011	-63	Enterprise value to Net PPE	1,105	1,162	1,310	0,803	0,919	1,019	1,030	0,876	1,252
Month End	8/31/2011	-64	Enterprise value to Net PPE	1,138	1,155	1,329	0,819	0,955	1,057	1,073	0,911	1,343
Month End	7/31/2011	-65	Enterprise value to Net PPE	1,109	1,121	1,292	0,818	0,938	1,025	1,075	0,915	1,297
Month End	6/30/2011	-66	Enterprise value to Net PPE	1,158	1,138	1,339	0,777	0,956	1,045	1,105	0,938	1,280
Month End	5/31/2011	-67	Enterprise value to Net PPE	1,157	1,148	1,370	0,809	0,962	1,036	1,112	0,916	1,337
Month End	4/30/2011	-68	Enterprise value to Net PPE	1,164	1,136	1,361	0,809	0,959	1,049	1,116	0,915	1,328
Month End	3/31/2011	-69	Enterprise value to Net PPE	1,200	1,048	1,384	0,817	0,966	1,067	1,103	0,917	1,335
Month End	2/28/2011	-70	Enterprise value to Net PPE	1,148	1,042	1,370	0,814	0,935	1,041	1,124	0,955	1,307
Month End	1/31/2011	-71	Enterprise value to Net PPE	1,158	1,002	1,391	0,799	0,955	1,016	1,085	0,946	1,301



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Company Name	AMERICAN STATES WATER CO	AMERICAN WATER WORKS CO INC	AQUA AMERICA INC	ARTESIAN RESOURCES -CL A	CALIFORNIA WATER SERVICE GP	CONNECTICUT WATER SVC INC	MIDDLESEX WATER CO	SJW GROUP	YORK WATER CO
Enterprise value to Inv Cap	2.319	1.626	1.946	1.630	1.750	1.812	2.292	1.841	2.870
Enterprise value to Inv Cap	2.189	1.628	1.931	1.607	1.774	1.781	2.196	1.785	2.753
Enterprise value to Inv Cap	2.089	1.650	1.978	1.495	1.640	1.723	1.991	1.714	2.445
Enterprise value to Inv Cap	2.141	1.673	1.994	1.507	1.684	1.709	1.995	1.585	2.347
Enterprise value to Inv Cap	2.096	1.660	1.990	1.469	1.624	1.626	1.911	1.561	2.258
Enterprise value to Inv Cap	2.275	1.786	2.196	1.697	1.746	1.740	2.264	1.552	2.460
Enterprise value to Inv Cap	2.354	1.832	2.279	1.700	1.822	1.909	2.405	1.512	2.530
Enterprise value to Inv Cap	2.145	1.676	2.113	1.499	1.597	1.705	2.106	1.387	2.198
Enterprise value to Inv Cap	2.260	1.657	2.080	1.454	1.549	1.673	2.089	1.385	2.369
Enterprise value to Inv Cap	2.180	1.617	2.110	1.487	1.526	1.643	1.820	1.440	2.423
Enterprise value to Inv Cap	2.316	1.554	2.046	1.493	1.446	1.553	1.689	1.438	2.240
Enterprise value to Inv Cap	2.460	1.563	2.089	1.561	1.461	1.585	1.734	1.343	2.167
Enterprise value to Inv Cap	2.287	1.474	2.011	1.470	1.352	1.463	1.603	1.292	2.085
Enterprise value to Inv Cap	2.281	1.443	1.989	1.426	1.322	1.418	1.562	1.311	2.014
Enterprise value to Inv Cap	2.258	1.440	1.954	1.358	1.316	1.431	1.565	1.346	1.978
Enterprise value to Inv Cap	2.270	1.414	1.865	1.355	1.351	1.453	1.493	1.333	1.843
Enterprise value to Inv Cap	2.101	1.364	1.807	1.285	1.290	1.404	1.444	1.280	1.858
Enterprise value to Inv Cap	2.164	1.362	1.814	1.260	1.327	1.384	1.442	1.308	1.864
Enterprise value to Inv Cap	2.021	1.336	1.791	1.262	1.381	1.407	1.447	1.340	1.850
Enterprise value to Inv Cap	2.069	1.405	1.888	1.273	1.424	1.437	1.415	1.324	1.951
Enterprise value to Inv Cap	2.076	1.432	1.914	1.278	1.423	1.455	1.457	1.301	2.137
Enterprise value to Inv Cap	2.131	1.441	1.913	1.263	1.464	1.473	1.463	1.351	2.086
Enterprise value to Inv Cap	2.142	1.439	1.914	1.272	1.503	1.493	1.485	1.413	2.041
Enterprise value to Inv Cap	2.128	1.470	1.947	1.286	1.466	1.461	1.422	1.423	2.041
Enterprise value to Inv Cap	2.061	1.419	1.947	1.317	1.471	1.477	1.468	1.384	2.018
Enterprise value to Inv Cap	1.933	1.415	1.940	1.280	1.491	1.436	1.423	1.325	1.813
Enterprise value to Inv Cap	1.987	1.419	1.924	1.306	1.532	1.500	1.442	1.379	1.937
Enterprise value to Inv Cap	1.731	1.343	1.799	1.236	1.404	1.364	1.327	1.304	1.820
Enterprise value to Inv Cap	1.819	1.382	1.881	1.272	1.487	1.377	1.368	1.318	1.832
Enterprise value to Inv Cap	1.739	1.335	1.812	1.290	1.418	1.345	1.355	1.302	1.765
Enterprise value to Inv Cap	1.842	1.374	1.966	1.321	1.507	1.409	1.405	1.328	1.845
Enterprise value to Inv Cap	1.708	1.360	1.919	1.315	1.412	1.357	1.373	1.324	1.815
Enterprise value to Inv Cap	1.712	1.307	1.903	1.301	1.432	1.369	1.366	1.329	1.796
Enterprise value to Inv Cap	1.874	1.314	1.927	1.317	1.479	1.411	1.436	1.403	1.817
Enterprise value to Inv Cap	1.767	1.305	1.931	1.290	1.460	1.371	1.361	1.402	1.795
Enterprise value to Inv Cap	1.690	1.265	1.861	1.315	1.450	1.396	1.347	1.373	1.809
Enterprise value to Inv Cap	1.729	1.275	1.850	1.342	1.415	1.496	1.398	1.420	1.869
Enterprise value to Inv Cap	1.750	1.277	1.877	1.367	1.406	1.474	1.444	1.349	1.936
Enterprise value to Inv Cap	1.716	1.285	1.938	1.339	1.359	1.396	1.385	1.371	1.851
Enterprise value to Inv Cap	1.739	1.264	1.953	1.313	1.325	1.413	1.428	1.380	1.835
Enterprise value to Inv Cap	1.679	1.255	1.928	1.298	1.309	1.363	1.366	1.322	1.796
Enterprise value to Inv Cap	1.954	1.287	2.083	1.352	1.390	1.359	1.415	1.371	1.907
Enterprise value to Inv Cap	1.678	1.272	1.968	1.318	1.202	1.328	1.368	1.394	1.758
Enterprise value to Inv Cap	1.665	1.250	1.959	1.313	1.211	1.317	1.338	1.421	1.762
Enterprise value to Inv Cap	1.721	1.283	1.982	1.359	1.224	1.320	1.354	1.368	1.740
Enterprise value to Inv Cap	1.798	1.284	1.987	1.322	1.403	1.332	1.349	1.346	1.755
Enterprise value to Inv Cap	1.683	1.247	1.879	1.313	1.314	1.318	1.343	1.345	1.726
Enterprise value to Inv Cap	1.624	1.226	1.792	1.326	1.292	1.312	1.336	1.363	1.757
Enterprise value to Inv Cap	1.542	1.201	1.752	1.334	1.271	1.543	1.357	1.355	1.676
Enterprise value to Inv Cap	1.482	1.220	1.758	1.278	1.257	1.420	1.319	1.290	1.666
Enterprise value to Inv Cap	1.430	1.193	1.749	1.336	1.274	1.411	1.347	1.283	1.659
Enterprise value to Inv Cap	1.505	1.210	1.723	1.344	1.302	1.467	1.349	1.327	1.746
Enterprise value to Inv Cap	1.484	1.207	1.734	1.308	1.287	1.439	1.331	1.266	1.699
Enterprise value to Inv Cap	1.408	1.195	1.759	1.286	1.294	1.422	1.327	1.264	1.721
Enterprise value to Inv Cap	1.430	1.179	1.766	1.294	1.319	1.388	1.357	1.273	1.714
Enterprise value to Inv Cap	1.360	1.178	1.676	1.198	1.274	1.357	1.321	1.246	1.653
Enterprise value to Inv Cap	1.352	1.177	1.657	1.210	1.303	1.363	1.336	1.276	1.683
Enterprise value to Inv Cap	1.361	1.167	1.647	1.206	1.289	1.469	1.341	1.260	1.678
Enterprise value to Inv Cap	1.373	1.172	1.643	1.214	1.331	1.482	1.316	1.252	1.677
Enterprise value to Inv Cap	1.356	1.161	1.634	1.207	1.299	1.531	1.338	1.246	1.710
Enterprise value to Inv Cap	1.325	1.126	1.652	1.217	1.270	1.453	1.322	1.223	1.707
Enterprise value to Inv Cap	1.334	1.112	1.645	1.206	1.277	1.516	1.314	1.254	1.728
Enterprise value to Inv Cap	1.323	1.103	1.658	1.187	1.283	1.438	1.334	1.211	1.659
Enterprise value to Inv Cap	1.308	1.106	1.611	1.230	1.282	1.399	1.259	1.171	1.615
Enterprise value to Inv Cap	1.348	1.099	1.636	1.254	1.333	1.452	1.311	1.218	1.733
Enterprise value to Inv Cap	1.314	1.067	1.590	1.254	1.308	1.408	1.314	1.224	1.674
Enterprise value to Inv Cap	1.355	1.094	1.646	1.186	1.327	1.426	1.339	1.348	1.653
Enterprise value to Inv Cap	1.353	1.104	1.685	1.234	1.336	1.413	1.347	1.316	1.727
Enterprise value to Inv Cap	1.361	1.092	1.674	1.235	1.332	1.431	1.352	1.315	1.716
Enterprise value to Inv Cap	1.389	1.069	1.700	1.234	1.315	1.457	1.325	1.312	1.728
Enterprise value to Inv Cap	1.329	1.064	1.682	1.229	1.273	1.422	1.350	1.366	1.692
Enterprise value to Inv Cap	1.340	1.023	1.708	1.207	1.300	1.387	1.304	1.353	1.685

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Month End 12/31/2016	0	Enterprise value to Net PPE	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Month End 11/30/2016	-1	Enterprise value to Net PPE	0.944	1.001	0.992	0.986	1.014	0.983	0.958
Month End 10/31/2016	-2	Enterprise value to Net PPE	0.901	1.015	1.016	0.917	0.937	0.950	0.869
Month End 9/30/2016	-3	Enterprise value to Net PPE	0.912	1.040	1.024	0.941	0.983	0.932	0.866
Month End 8/31/2016	-4	Enterprise value to Net PPE	0.893	1.032	1.023	0.917	0.947	0.887	0.829
Month End 7/31/2016	-5	Enterprise value to Net PPE	0.969	1.111	1.128	1.059	1.019	0.949	0.982
Month End 6/30/2016	-6	Enterprise value to Net PPE	0.993	1.137	1.166	1.079	1.054	1.029	1.032
Month End 5/31/2016	-7	Enterprise value to Net PPE	0.905	1.040	1.080	0.951	0.924	0.919	0.904
Month End 4/30/2016	-8	Enterprise value to Net PPE	0.953	1.028	1.064	0.923	0.896	0.902	0.896
Month End 3/31/2016	-9	Enterprise value to Net PPE	0.922	0.995	1.082	0.958	0.882	0.881	0.797
Month End 2/29/2016	-10	Enterprise value to Net PPE	0.980	0.956	1.049	0.962	0.836	0.833	0.740
Month End 1/31/2016	-11	Enterprise value to Net PPE	1.041	0.962	1.071	1.005	0.844	0.850	0.759
Month End 12/31/2015	-12	Enterprise value to Net PPE	0.984	0.934	1.039	0.950	0.798	0.797	0.732
Month End 11/30/2015	-13	Enterprise value to Net PPE	0.981	0.914	1.027	0.921	0.780	0.773	0.713
Month End 10/31/2015	-14	Enterprise value to Net PPE	0.971	0.913	1.009	0.878	0.776	0.780	0.715
Month End 9/30/2015	-15	Enterprise value to Net PPE	0.983	0.900	0.967	0.886	0.791	0.785	0.682
Month End 8/31/2015	-16	Enterprise value to Net PPE	0.910	0.868	0.938	0.840	0.756	0.759	0.660
Month End 7/31/2015	-17	Enterprise value to Net PPE	0.937	0.867	0.941	0.824	0.777	0.747	0.659
Month End 6/30/2015	-18	Enterprise value to Net PPE	0.904	0.842	0.924	0.823	0.812	0.764	0.662
Month End 5/31/2015	-19	Enterprise value to Net PPE	0.925	0.886	0.974	0.830	0.837	0.780	0.647
Month End 4/30/2015	-20	Enterprise value to Net PPE	0.929	0.902	0.987	0.833	0.837	0.790	0.666
Month End 3/31/2015	-21	Enterprise value to Net PPE	0.968	0.901	0.976	0.845	0.858	0.790	0.676
Month End 2/28/2015	-22	Enterprise value to Net PPE	0.973	0.899	0.977	0.851	0.881	0.801	0.685
Month End 1/31/2015	-23	Enterprise value to Net PPE	0.967	0.919	0.994	0.860	0.859	0.784	0.657
Month End 12/31/2014	-24	Enterprise value to Net PPE	0.938	0.901	1.007	0.866	0.858	0.802	0.697
Month End 11/30/2014	-25	Enterprise value to Net PPE	0.879	0.899	1.004	0.842	0.870	0.780	0.676
Month End 10/31/2014	-26	Enterprise value to Net PPE	0.904	0.901	0.995	0.859	0.894	0.815	0.685
Month End 9/30/2014	-27	Enterprise value to Net PPE	0.793	0.867	0.936	0.818	0.825	0.751	0.631
Month End 8/31/2014	-28	Enterprise value to Net PPE	0.833	0.892	0.978	0.841	0.874	0.758	0.650
Month End 7/31/2014	-29	Enterprise value to Net PPE	0.797	0.862	0.942	0.853	0.834	0.741	0.644
Month End 6/30/2014	-30	Enterprise value to Net PPE	0.874	0.883	1.025	0.873	0.876	0.782	0.662
Month End 5/31/2014	-31	Enterprise value to Net PPE	0.810	0.874	1.001	0.869	0.821	0.753	0.646
Month End 4/30/2014	-32	Enterprise value to Net PPE	0.812	0.840	0.992	0.859	0.833	0.759	0.643
Month End 3/31/2014	-33	Enterprise value to Net PPE	0.862	0.845	0.987	0.875	0.868	0.785	0.681
Month End 2/28/2014	-34	Enterprise value to Net PPE	0.813	0.839	0.989	0.857	0.857	0.763	0.645
Month End 1/31/2014	-35	Enterprise value to Net PPE	0.777	0.813	0.953	0.874	0.851	0.777	0.638
Month End 12/31/2013	-36	Enterprise value to Net PPE	0.804	0.817	0.966	0.890	0.838	0.851	0.672
Month End 11/30/2013	-37	Enterprise value to Net PPE	0.813	0.818	0.981	0.907	0.832	0.839	0.695
Month End 10/31/2013	-38	Enterprise value to Net PPE	0.798	0.823	1.012	0.888	0.805	0.794	0.666
Month End 9/30/2013	-39	Enterprise value to Net PPE	0.806	0.825	1.019	0.882	0.789	0.797	0.684
Month End 8/31/2013	-40	Enterprise value to Net PPE	0.778	0.819	1.006	0.872	0.780	0.769	0.655
Month End 7/31/2013	-41	Enterprise value to Net PPE	0.905	0.840	1.087	0.908	0.828	0.766	0.678
Month End 6/30/2013	-42	Enterprise value to Net PPE	0.788	0.825	1.036	0.889	0.767	0.753	0.649
Month End 5/31/2013	-43	Enterprise value to Net PPE	0.782	0.811	1.031	0.885	0.773	0.747	0.635
Month End 4/30/2013	-44	Enterprise value to Net PPE	0.809	0.833	1.044	0.916	0.781	0.749	0.643
Month End 3/31/2013	-45	Enterprise value to Net PPE	0.848	0.827	1.052	0.898	0.830	0.760	0.656
Month End 2/28/2013	-46	Enterprise value to Net PPE	0.793	0.803	0.995	0.892	0.778	0.752	0.654
Month End 1/31/2013	-47	Enterprise value to Net PPE	0.766	0.790	0.949	0.901	0.764	0.749	0.650
Month End 12/31/2012	-48	Enterprise value to Net PPE	0.734	0.785	0.920	0.904	0.736	0.860	0.653
Month End 11/30/2012	-49	Enterprise value to Net PPE	0.706	0.797	0.923	0.866	0.727	0.791	0.635
Month End 10/31/2012	-50	Enterprise value to Net PPE	0.681	0.779	0.919	0.905	0.738	0.786	0.648
Month End 9/30/2012	-51	Enterprise value to Net PPE	0.704	0.805	0.905	0.919	0.769	0.816	0.648
Month End 8/31/2012	-52	Enterprise value to Net PPE	0.694	0.802	0.911	0.894	0.760	0.801	0.639
Month End 7/31/2012	-53	Enterprise value to Net PPE	0.658	0.795	0.924	0.879	0.765	0.791	0.637
Month End 6/30/2012	-54	Enterprise value to Net PPE	0.659	0.784	0.943	0.889	0.757	0.785	0.644
Month End 5/31/2012	-55	Enterprise value to Net PPE	0.627	0.783	0.895	0.823	0.731	0.767	0.627
Month End 4/30/2012	-56	Enterprise value to Net PPE	0.623	0.783	0.885	0.831	0.748	0.771	0.635
Month End 3/31/2012	-57	Enterprise value to Net PPE	0.624	0.812	0.882	0.836	0.758	0.782	0.646
Month End 2/29/2012	-58	Enterprise value to Net PPE	0.630	0.815	0.880	0.841	0.783	0.789	0.634
Month End 1/31/2012	-59	Enterprise value to Net PPE	0.622	0.808	0.875	0.837	0.764	0.815	0.644
Month End 12/31/2011	-60	Enterprise value to Net PPE	0.611	0.794	0.903	0.843	0.750	0.743	0.646
Month End 11/30/2011	-61	Enterprise value to Net PPE	0.615	0.784	0.899	0.835	0.755	0.775	0.642
Month End 10/31/2011	-62	Enterprise value to Net PPE	0.610	0.778	0.906	0.822	0.758	0.735	0.652
Month End 9/30/2011	-63	Enterprise value to Net PPE	0.605	0.789	0.894	0.853	0.751	0.708	0.614
Month End 8/31/2011	-64	Enterprise value to Net PPE	0.623	0.784	0.907	0.870	0.781	0.735	0.639
Month End 7/31/2011	-65	Enterprise value to Net PPE	0.607	0.762	0.882	0.870	0.766	0.713	0.641
Month End 6/30/2011	-66	Enterprise value to Net PPE	0.634	0.773	0.914	0.825	0.781	0.727	0.658
Month End 5/31/2011	-67	Enterprise value to Net PPE	0.633	0.780	0.935	0.859	0.787	0.720	0.662
Month End 4/30/2011	-68	Enterprise value to Net PPE	0.637	0.772	0.929	0.859	0.784	0.729	0.665
Month End 3/31/2011	-69	Enterprise value to Net PPE	0.657	0.712	0.945	0.868	0.790	0.742	0.657
Month End 2/28/2011	-70	Enterprise value to Net PPE	0.628	0.708	0.935	0.865	0.764	0.724	0.669
Month End 1/31/2011	-71	Enterprise value to Net PPE	0.634	0.681	0.949	0.849	0.781	0.706	0.646

Company Name	AMERICAN STATES WATER CO	AMERICAN WATER WORKS CO INC	AQUA AMERICA INC	ARTESIAN RESOURCES -CL A	CALIFORNIA WATER SERVICE GP	CONNECTICUT WATER SVC INC	MIDDLESEX WATER CO	YORK SOW GROUP	YORK WATER CO	12/31/2016	Enterprise value to Net PPE	Enterprise value to Inv Cap
Enterprise value to Inv Cap	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	Month End 12/31/2016	100%	100%
Enterprise value to Inv Cap	0.944	1.001	0.992	0.986	1.014	0.983	0.958	0.970	0.959	Month End 11/30/2016	98%	98%
Enterprise value to Inv Cap	0.901	1.015	1.016	0.917	0.937	0.950	0.869	0.931	0.852	Month End 10/31/2016	93%	93%
Enterprise value to Inv Cap	0.923	1.029	1.024	0.924	0.963	0.943	0.871	0.861	0.818	Month End 9/30/2016	93%	92%
Enterprise value to Inv Cap	0.904	1.021	1.023	0.901	0.928	0.897	0.834	0.848	0.787	Month End 8/31/2016	89%	90%
Enterprise value to Inv Cap	0.981	1.098	1.129	1.041	0.998	0.960	0.988	0.843	0.857	Month End 7/31/2016	98%	99%
Enterprise value to Inv Cap	1.015	1.127	1.171	1.043	1.041	1.053	1.049	0.821	0.882	Month End 6/30/2016	103%	104%
Enterprise value to Inv Cap	0.925	1.031	1.085	0.919	0.912	0.941	0.919	0.754	0.766	Month End 5/31/2016	92%	92%
Enterprise value to Inv Cap	0.975	1.019	1.069	0.892	0.885	0.923	0.911	0.752	0.825	Month End 4/30/2016	90%	91%
Enterprise value to Inv Cap	0.940	0.994	1.084	0.912	0.872	0.907	0.794	0.782	0.844	Month End 3/31/2016	88%	91%
Enterprise value to Inv Cap	0.999	0.955	1.051	0.916	0.826	0.857	0.737	0.781	0.780	Month End 2/29/2016	84%	86%
Enterprise value to Inv Cap	1.061	0.961	1.073	0.957	0.835	0.875	0.756	0.730	0.755	Month End 1/31/2016	85%	87%
Enterprise value to Inv Cap	0.986	0.906	1.033	0.902	0.773	0.807	0.699	0.702	0.726	Month End 12/31/2015	80%	81%
Enterprise value to Inv Cap	0.984	0.887	1.022	0.875	0.756	0.783	0.682	0.712	0.702	Month End 11/30/2015	78%	78%
Enterprise value to Inv Cap	0.974	0.886	1.004	0.833	0.752	0.789	0.683	0.731	0.689	Month End 10/31/2015	78%	79%
Enterprise value to Inv Cap	0.979	0.869	0.958	0.831	0.772	0.802	0.651	0.724	0.642	Month End 9/30/2015	79%	80%
Enterprise value to Inv Cap	0.906	0.839	0.929	0.788	0.737	0.775	0.630	0.695	0.647	Month End 8/31/2015	76%	77%
Enterprise value to Inv Cap	0.933	0.838	0.932	0.773	0.758	0.763	0.629	0.711	0.649	Month End 7/31/2015	78%	76%
Enterprise value to Inv Cap	0.871	0.822	0.920	0.774	0.789	0.776	0.631	0.728	0.645	Month End 6/30/2015	81%	78%
Enterprise value to Inv Cap	0.892	0.864	0.970	0.781	0.814	0.793	0.617	0.719	0.680	Month End 5/31/2015	83%	79%
Enterprise value to Inv Cap	0.895	0.881	0.983	0.784	0.813	0.803	0.635	0.707	0.745	Month End 4/30/2015	83%	80%
Enterprise value to Inv Cap	0.919	0.886	0.983	0.775	0.837	0.813	0.638	0.734	0.727	Month End 3/31/2015	84%	81%
Enterprise value to Inv Cap	0.924	0.885	0.984	0.780	0.859	0.824	0.648	0.768	0.711	Month End 2/28/2015	85%	82%
Enterprise value to Inv Cap	0.918	0.904	1.000	0.789	0.838	0.806	0.621	0.773	0.711	Month End 1/31/2015	86%	81%
Enterprise value to Inv Cap	0.889	0.873	1.000	0.808	0.841	0.815	0.640	0.752	0.703	Month End 12/31/2014	86%	81%
Enterprise value to Inv Cap	0.833	0.870	0.997	0.785	0.852	0.792	0.621	0.720	0.632	Month End 11/30/2014	84%	79%
Enterprise value to Inv Cap	0.857	0.873	0.989	0.801	0.876	0.828	0.629	0.749	0.675	Month End 10/31/2014	86%	83%
Enterprise value to Inv Cap	0.746	0.826	0.925	0.758	0.802	0.753	0.579	0.709	0.634	Month End 9/30/2014	79%	75%
Enterprise value to Inv Cap	0.784	0.850	0.966	0.780	0.850	0.760	0.597	0.716	0.639	Month End 8/31/2014	83%	78%
Enterprise value to Inv Cap	0.750	0.821	0.931	0.791	0.810	0.742	0.591	0.707	0.615	Month End 7/31/2014	80%	75%
Enterprise value to Inv Cap	0.795	0.845	1.010	0.810	0.861	0.778	0.613	0.722	0.643	Month End 6/30/2014	87%	79%
Enterprise value to Inv Cap	0.737	0.836	0.986	0.807	0.807	0.749	0.599	0.719	0.632	Month End 5/31/2014	81%	75%
Enterprise value to Inv Cap	0.738	0.804	0.978	0.798	0.818	0.755	0.596	0.722	0.626	Month End 4/30/2014	81%	76%
Enterprise value to Inv Cap	0.808	0.808	0.990	0.808	0.845	0.779	0.626	0.762	0.633	Month End 3/31/2014	84%	81%
Enterprise value to Inv Cap	0.762	0.802	0.992	0.791	0.834	0.756	0.594	0.762	0.626	Month End 2/28/2014	81%	76%
Enterprise value to Inv Cap	0.729	0.778	0.956	0.807	0.829	0.770	0.588	0.746	0.630	Month End 1/31/2014	78%	77%
Enterprise value to Inv Cap	0.746	0.784	0.951	0.823	0.809	0.825	0.610	0.771	0.651	Month End 12/31/2013	82%	78%
Enterprise value to Inv Cap	0.755	0.785	0.965	0.838	0.803	0.813	0.630	0.733	0.675	Month End 11/30/2013	82%	79%
Enterprise value to Inv Cap	0.740	0.790	0.996	0.821	0.777	0.770	0.604	0.745	0.645	Month End 10/31/2013	80%	77%
Enterprise value to Inv Cap	0.750	0.777	1.003	0.805	0.757	0.780	0.623	0.750	0.639	Month End 9/30/2013	80%	76%
Enterprise value to Inv Cap	0.724	0.772	0.991	0.796	0.748	0.752	0.596	0.718	0.626	Month End 8/31/2013	78%	75%
Enterprise value to Inv Cap	0.843	0.792	1.070	0.829	0.794	0.750	0.617	0.745	0.665	Month End 7/31/2013	83%	79%
Enterprise value to Inv Cap	0.723	0.782	1.011	0.809	0.687	0.733	0.597	0.757	0.613	Month End 6/30/2013	77%	73%
Enterprise value to Inv Cap	0.718	0.768	1.007	0.805	0.692	0.727	0.584	0.772	0.614	Month End 5/31/2013	77%	73%
Enterprise value to Inv Cap	0.742	0.789	1.019	0.833	0.700	0.728	0.591	0.743	0.606	Month End 4/30/2013	78%	74%
Enterprise value to Inv Cap	0.775	0.790	1.021	0.811	0.802	0.735	0.588	0.731	0.612	Month End 3/31/2013	83%	78%
Enterprise value to Inv Cap	0.726	0.767	0.965	0.805	0.751	0.727	0.586	0.730	0.601	Month End 2/28/2013	78%	73%
Enterprise value to Inv Cap	0.700	0.754	0.921	0.813	0.738	0.724	0.583	0.740	0.612	Month End 1/31/2013	76%	74%
Enterprise value to Inv Cap	0.665	0.739	0.900	0.818	0.726	0.852	0.592	0.736	0.584	Month End 12/31/2012	74%	74%
Enterprise value to Inv Cap	0.639	0.750	0.903	0.784	0.718	0.783	0.575	0.701	0.581	Month End 11/30/2012	73%	72%
Enterprise value to Inv Cap	0.617	0.734	0.899	0.819	0.728	0.779	0.588	0.697	0.578	Month End 10/31/2012	74%	73%
Enterprise value to Inv Cap	0.649	0.744	0.885	0.825	0.744	0.809	0.589	0.721	0.608	Month End 9/30/2012	77%	74%
Enterprise value to Inv Cap	0.640	0.742	0.891	0.802	0.736	0.794	0.580	0.688	0.592	Month End 8/31/2012	76%	74%
Enterprise value to Inv Cap	0.607	0.735	0.904	0.789	0.740	0.784	0.579	0.687	0.600	Month End 7/31/2012	76%	73%
Enterprise value to Inv Cap	0.617	0.725	0.908	0.794	0.754	0.766	0.592	0.691	0.597	Month End 6/30/2012	76%	72%
Enterprise value to Inv Cap	0.587	0.724	0.861	0.735	0.728	0.749	0.576	0.677	0.576	Month End 5/31/2012	73%	72%
Enterprise value to Inv Cap	0.583	0.724	0.851	0.742	0.745	0.752	0.583	0.693	0.586	Month End 4/30/2012	75%	72%
Enterprise value to Inv Cap	0.587	0.718	0.846	0.739	0.737	0.811	0.585	0.685	0.585	Month End 3/31/2012	76%	72%
Enterprise value to Inv Cap	0.592	0.720	0.844	0.744	0.761	0.818	0.574	0.680	0.584	Month End 2/29/2012	78%	72%
Enterprise value to Inv Cap	0.585	0.714	0.839	0.741	0.742	0.845	0.584	0.677	0.596	Month End 1/31/2012	76%	71%
Enterprise value to Inv Cap	0.571	0.693	0.849	0.746	0.726	0.802	0.577	0.664	0.595	Month End 12/31/2011	74%	69%
Enterprise value to Inv Cap	0.575	0.684	0.845	0.739	0.730	0.836	0.573	0.681	0.602	Month End 11/30/2011	75%	68%
Enterprise value to Inv Cap	0.571	0.678	0.852	0.728	0.733	0.793	0.582	0.658	0.578	Month End 10/31/2011	74%	68%
Enterprise value to Inv Cap	0.564	0.680	0.828	0.755	0.733	0.772	0.549	0.636	0.563	Month End 9/30/2011	71%	68%
Enterprise value to Inv Cap	0.581	0.676	0.840	0.769	0.762	0.801	0.572	0.662	0.604	Month End 8/31/2011	74%	68%
Enterprise value to Inv Cap	0.567	0.656	0.817	0.769	0.748	0.777	0.573	0.665	0.583	Month End 7/31/2011	71%	67%
Enterprise value to Inv Cap	0.584	0.673	0.846	0.727	0.758	0.787	0.584	0.732	0.576	Month End 6/30/2011	73%	73%
Enterprise value to Inv Cap	0.584	0.679	0.866	0.757	0.764	0.780	0.588	0.715	0.602	Month End 5/31/2011	72%	72%
Enterprise value to Inv Cap	0.587	0.672	0.860	0.757	0.761	0.790	0.590	0.714	0.598	Month End 4/30/2011	73%	71%
Enterprise value to Inv Cap	0.599	0.658	0.873	0.757	0.752	0.804	0.578	0.713	0.602	Month End 3/31/2011	71%	71%
Enterprise value to Inv Cap	0.573	0.654	0.864	0.754	0.728	0.785	0.589	0.742	0.590	Month End 2/28/2011	72%	73%
Enterprise value to Inv Cap	0.578	0.629	0.877	0.740	0.743	0.766	0.569	0.735	0.587	Month End 1/31/2011	71%	74%

VERIFICATION

I, Harold Walker, III, Manager of Financial Studies of Gannett Fleming Valuation and Rate Consultants, LLC, a Utility Valuation Expert in the Commonwealth of Pennsylvania, hereby state that Gannett Fleming Valuation and Rate Consultants, LLC was selected by Aqua Pennsylvania Wastewater, Inc. to perform a fair market value appraisal of Limerick Township's sanitary wastewater collection and treatment system assets ("Wastewater System"); that, as Manager of Financial Studies of Gannett Fleming Valuation and Rate Consultants, LLC, I prepared the foregoing Fair Market Value Appraisal of Limerick Township's sanitary wastewater collection and treatment system assets, dated April 21, 2017; that the facts set forth in the Fair Market Value Appraisal are true and correct to the best of my knowledge, information, and belief; that, as Manager of Financial Studies of Gannett Fleming Valuation and Rate Consultants, LLC, I determined the fair market value of the System in compliance with the Uniform Standards of Professional Appraisal Practices, employing the cost, market and income approaches; that neither Gannett Fleming Valuation and Rate Consultants, LLC nor I have derived any material benefit from the sale of the selling utility other than fees for services rendered; that I am not an immediate family member of a director, officer or employee of either Aqua Pennsylvania Wastewater, Inc. or Limerick Township within a 12-month period of the date Gannett Fleming Valuation and Rate Consultants, LLC was engaged to perform the appraisal; and that I make this verification subject to the penalties of 18 Pa. Cons. Stat. § 4904 (relating to unsworn falsification to authorities).



Harold Walker, III
Gannett Fleming Valuation and Rate
Consultants, LLC.

Dated: April 21, 2017