PRELIMINARY OFFICIAL STATEMENT DATED MARCH 23, 2015

NEW ISSUE – BOOK-ENTRY ONLY

RATINGS:
Fitch: "A+", stable outlook
Moody's: "A1", stable outlook
S&P: "A", positive outlook

In the opinions of Co-Bond Counsel, under existing law, interest on the Bonds is excludable from gross income for purposes of federal income tax, assuming continuing compliance with the requirements of the federal tax law. Interest on the Bonds is not a preference item for purposes of either individual or corporate federal alternative minimum tax; however, interest paid to corporate holders of the Bonds may be indirectly subject to alternative minimum tax under circumstances described under "TAX EXEMPTION" herein. Under the laws of the Commonwealth of Pennsylvania, as enacted and construed on the date of initial delivery of the Bonds, the Bonds are exempt from personal property taxes and interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax. For a more complete discussion of federal and state tax exemptions, see "TAX EXEMPTION" herein.

$367,400,000*
CITY OF PHILADELPHIA, PENNSYLVANIA

$269,745,000*	$97,655,000*
Water and Wastewater Revenue Bonds, Series 2015A	**Water and Wastewater Revenue Refunding Bonds, Series 2015B**

Dated: Date of Delivery **Due: As shown on the inside front cover**

The City of Philadelphia, Pennsylvania, a corporation, body politic and city of the first class existing under the laws of the Commonwealth of Pennsylvania (the "City") is issuing its $269,745,000* Water and Wastewater Revenue Bonds, Series 2015A (the "2015A Bonds") and its $97,655,000* Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "2015B Bonds", and together with the 2015A Bonds, the "Bonds") pursuant to (i) the First Class City Revenue Bond Act and (ii) the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (as supplemented and amended, collectively referred to as the "General Ordinance"). The 2015A Bonds are being issued for the purpose of providing funds which, together with other available funds of the City's Water Department (the "Water Department"), will be used to finance a portion of the costs of (i) capital improvements to the City's Water System and Wastewater System (as such terms are defined herein), (ii) a deposit to the Debt Reserve Account of the Sinking Fund, and (iii) the costs of issuance relating to the 2015A Bonds. The 2015B Bonds are being issued for the purpose of providing funds which, together with other available funds of the Water Department, will be used to finance a portion of the costs of (i) the refunding, on a current basis, of a portion of the City's outstanding Water and Wastewater Revenue Bonds, Series 2005A and (ii) the costs of issuance relating to the 2015B Bonds. See "PLAN OF FINANCE" herein. Capitalized terms used but not otherwise defined in this Official Statement have the meanings ascribed to them in Appendix III hereof.

The Bonds are special obligations of the City secured, equally and ratably, with the City's outstanding Water and Wastewater Revenue Bonds (other than Subordinated Bonds) in the aggregate principal amount of $1,779,781,224 (as of February 27, 2015) issued under the General Ordinance and all Water and Wastewater Revenue Bonds hereafter issued under the General Ordinance (the "Water and Wastewater Revenue Bonds"). All Water and Wastewater Revenue Bonds are secured by a pledge of and security interest in all Project Revenues derived from the City's Water and Wastewater Systems (the "System") and by moneys deposited in the funds and accounts (other than the Rebate Fund) established by the City under the General Ordinance (the "Water and Wastewater Funds"). Project Revenues means: (i) all rents, rates, fees and charges imposed or charged for connection to, or use or product of or services generated by the System to the ultimate users thereof, (ii) all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, (iii) all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the System, (iv) all grants, payments and contributions made in aid or on account of the System exclusive of grants and similar payments and contributions solely in aid of construction and (v) all accounts, contract rights and general intangibles representing the foregoing.

THE BONDS ARE PAYABLE SOLELY FROM PROJECT REVENUES AND MONEYS DEPOSITED IN THE WATER AND WASTEWATER FUNDS. THE BONDS ARE SPECIAL OBLIGATIONS OF THE CITY AND DO NOT PLEDGE THE FULL FAITH, CREDIT OR TAXING POWER OF THE CITY, OR CREATE ANY DEBT OR CHARGE AGAINST THE TAX OR GENERAL REVENUES OF THE CITY, OR CREATE ANY LIEN OR CHARGE AGAINST ANY PROPERTY OF THE CITY, OTHER THAN AGAINST THE PROJECT REVENUES AND AMOUNTS, IF ANY, AT ANY TIME ON DEPOSIT IN THE WATER AND WASTEWATER FUNDS.

The Bonds will be issued only as fully registered bonds and, when issued, will be registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"), which will act as securities depository for the Bonds. Purchasers will not receive certificates representing their ownership interests in the Bonds purchased. Disbursements of principal, interest or redemption payments are the responsibility of DTC.

The Bonds will be dated and will bear interest from the date of delivery thereof. Interest on Bonds will be payable semiannually on January 1 and July 1 of each year, beginning January 1, 2016. The Bonds are subject to optional and mandatory sinking fund redemption prior to maturity as described herein.

This cover page contains information for quick reference only. It is not a summary of this issue. Investors must read the entire Official Statement, including the Appendices, which are an integral part hereof, to obtain information essential to making an informed investment decision regarding the Bonds.

The 2015A Bonds are offered when, as and if issued and delivered to and received by the 2015A Underwriters (defined herein), and subject to the legal opinions of Ballard Spahr LLP and Andre C. Dasent, P.C., both of Philadelphia, Pennsylvania, Co-Bond Counsel. Certain legal matters for the 2015A Bonds will be passed upon for the 2015A Underwriters by Saul Ewing LLP, of Philadelphia, Pennsylvania and Gonzalez Saggio & Harlan, of New York, New York. The 2015B Bonds are offered when, as and if issued and delivered to and received by the 2015B Underwriters (defined herein), and subject to the legal opinions of Ballard Spahr LLP and Ahmad Zaffarese LLC, both of Philadelphia, Pennsylvania, Co-Bond Counsel. Certain legal matters for the 2015B Bonds will be passed upon for the 2015B Underwriters by Dilworth Paxson LLP, of Philadelphia, Pennsylvania and Gonzalez Saggio & Harlan, of New York, New York. Certain legal matters will be passed upon for the City by the City Solicitor. Certain other legal matters respecting the Bonds will be passed upon for the City by Greenberg Traurig, LLP, Philadelphia, Pennsylvania, Disclosure Counsel. It is expected that the Bonds will be available for delivery through the facilities of DTC on or about April 16, 2015.

2015A Bonds			2015B Bonds	
J.P. Morgan	**Loop Capital Markets**		**BofA Merrill Lynch**	**Ramirez & Co., Inc.**
Janney Montgomery Scott	**Morgan Stanley**	**PNC Capital Markets LLC**	**Drexel Hamilton**	**RBC Capital Markets**
Siebert Brandford Shank & Co., L.L.C.	**Wells Fargo Securities**		**Siebert Brandford Shank & Co., L.L.C.**	**TD Securities**

The date of this Official Statement is April __, 2015.

* Preliminary, subject to change.

$367,400,000*
CITY OF PHILADELPHIA, PENNSYLVANIA

$269,745,000*
Water and Wastewater Revenue Bonds,
Series 2015A

$97,655,000*
Water and Wastewater Revenue Refunding Bonds,
Series 2015B

MATURITIES, AMOUNTS, INTEREST RATES, PRICES, YIELDS AND CUSIPS†

$269,745,000*
Water and Wastewater Revenue Bonds,
Series 2015A

$118,095,000*, ____% Term Bonds due July 1, 2040*, Yield: ____%, Price _____, CUSIP† 717893___

$151,650,000*, ____% Term Bonds due July 1, 2045*, Yield: ____%, Price _____, CUSIP† 717893___

$97,655,000*
Water and Wastewater Revenue Refunding Bonds,
Series 2015B

Maturity Date July 1*	Principal*	Interest Rate	Yield	Price	CUSIP† (717893)
2028	$10,310,000				
2029	10,730,000				
2030	11,265,000				
2031	11,830,000				
2032	12,420,000				
2033	13,040,000				
2034	13,690,000				
2035	14,370,000				

* Preliminary, subject to change.
† The above CUSIP (Committee on Uniform Securities Identification Procedures) numbers have been assigned by an organization not affiliated with the City or the Underwriters, and such parties are not responsible for the selection or use of the CUSIP numbers. The CUSIP numbers are included solely for the convenience of bondholders and no representation is made as to the correctness of such CUSIP numbers. CUSIP numbers assigned to securities may be changed during the term of such securities based on a number of factors including, but not limited to, the refunding or defeasance of such issue or the use of secondary market financial products. Neither the City nor the Underwriters have agreed to, and there is no duty or obligation to, update this Official Statement to reflect any change or correction in the CUSIP numbers set forth above. CUSIP is a registered trademark of the American Bankers Association (the "ABA"). CUSIP data is provided by CUSIP Global Services, which is managed on behalf of the ABA by S&P Capital IQ, a division of McGraw Hill Financial, Inc.

CITY OF PHILADELPHIA, PENNSYLVANIA

MAYOR
HONORABLE MICHAEL A. NUTTER

MAYOR'S CHIEF OF STAFF
EVERETT A. GILLISON

MAYOR'S CABINET

Richard Negrin, Esquire	Managing Director
Rob Dubow	Director of Finance
Shelley R. Smith	City Solicitor
Rina Cutler	Deputy Mayor Transportation and Utilities
Alan Greenberger	Deputy Mayor for Planning and Economic Development and Commerce Director
Susan Kretsge	Deputy Mayor for Health and Opportunity
Michael DiBerardinis	Deputy Mayor for Environmental and Community Resources
Desiree Peterkin Bell	Director of Communications and Strategic Partnerships/City Representative
Lori A. Shorr, Ph.D	Chief Education Officer
Tumar Alexander	First Deputy Chief of Staff
Adel Ebeid	Chief Information Officer
Katherine Gajewski	Director of Sustainability
Eva Gladstein	Executive Director, Mayor's Office of Community Engagement & Opportunity
Helen Haynes	Chief Cultural Officer
Amy L. Kurland	Inspector General
Hope Caldwell	Chief Integrity Officer
Michael Resnick	Director of Public Safety
Robert Murken	Director, Legislative and Government Affairs
David G. Wilson	First Deputy Managing Director
Maia Jachimowicz	Director of Policy

CITY TREASURER
Nancy E. Winkler

CITY CONTROLLER
Alan L. Butkovitz

PHILADELPHIA WATER DEPARTMENT
Aramark Tower at One Reading Center
Philadelphia, Pennsylvania 19107
Howard M. Neukrug, Water Commissioner
Michelle L. Bethel, Deputy Revenue Commissioner
Christopher Crockett, Deputy Water Commissioner
Joanne Dahme, General Manager, Public Affairs
Stephen J. Furtek, General Manager, Engineering and Construction
James George, Assistant Deputy Water Commissioner
Mami Hara, Deputy Water Commissioner and Chief of Staff
David A. Katz, Deputy Water Commissioner
Melissa LaBuda, Deputy Water Commissioner
Gerald D. Leatherman, Deputy Water Commissioner
Debra A. McCarty, Deputy Water Commissioner
Scott J. Schwarz, General Counsel to the Water Department

Consulting Engineer
Black & Veatch Corporation, Kansas City, Missouri

Financial Advisors
Phoenix Capital Partners, LLP and
Public Financial Management, Inc.

For purposes of compliance with Rule 15c2-12 of the United States Securities and Exchange Commission (the "Rule"), this document constitutes an Official Statement of the City of Philadelphia, Pennsylvania (the "City") with respect to the Bonds that has been deemed final by the City as of its date, except for the omission of no more than the information permitted to be so omitted by the Rule.

No dealer, broker, salesperson or other person has been authorized by the City or the Underwriters (defined herein) to give any information or to make any representations with respect to the Bonds other than those contained in this Official Statement, and, if given or made, such other information or representations must not be relied upon. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Bonds by any person in any jurisdiction in which it is unlawful for such person to make such offer, solicitation or sale.

This Official Statement is not to be construed as a contract with the purchasers of the Bonds. The information set forth herein has been obtained from the City and other sources believed to be reliable but is not guaranteed as to accuracy or completeness by the Underwriters. This information and expressions of opinions herein are subject to change without notice, and neither delivery of this Official Statement nor any sale made hereunder shall, under any circumstances, create any implication that there has been no change in the affairs of the City or the Water Department since the date hereof.

Statements contained in this Official Statement, including the Appendices hereto, which involve estimates, forecasts or other matters of opinion, whether or not expressly so described herein, are intended solely as such and are not to be construed as representations of fact. If and when included in this Official Statement, the words "expects," "forecasts," "projects," "intends," "anticipates," "estimates," "assumes" and analogous expressions are intended to identify forward-looking statements and any such statements inherently are subject to a variety of risks and uncertainties that could cause actual results to differ materially from those that have been projected. Such risks and uncertainties which could affect the amount of revenue collected by the City or the Water Department include, among others, changes in economic conditions and various other events, conditions and circumstances, many of which are beyond the control of the City and the Water Department. Such forward-looking statements speak only as of the date of this Official Statement. The City disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statement contained herein to reflect any changes in the City's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Upon issuance, the Bonds will not be registered under the Securities Act of 1933, as amended, will not be listed on any stock or other securities exchange and neither the Securities and Exchange Commission nor any other federal, state, municipal or other governmental entity, other than the City (subject to the limitations set forth herein), will have passed upon the accuracy or adequacy of this Official Statement.

This Official Statement is submitted in connection with the sale of the securities referred to herein and may not be reproduced or used, in whole or in part, for any other purpose.

The order and placement of materials in this Official Statement, including the Appendices hereto, are not to be deemed to be a determination of relevance, materiality or importance, and this Official Statement, including the Appendices, must be considered in its entirety.

IN MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE CITY, THE WATER DEPARTMENT AND THE TERMS OF THE OFFERING, INCLUDING THE MERITS AND RISKS INVOLVED. THESE SECURITIES HAVE NOT BEEN RECOMMENDED BY ANY FEDERAL OR STATE SECURITIES COMMISSION OR REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS DOCUMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

IN CONNECTION WITH THE OFFERING OF THE BONDS, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE BONDS AT A LEVEL ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN

THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME WITHOUT PRIOR NOTICE.

This Official Statement speaks only as of the date printed on the cover page hereof. This Official Statement, and any supplement or amendment thereto, will be delivered to the Municipal Securities Rulemaking Board through the Electronic Municipal Market Access System.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with and as part of their responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

TABLE OF CONTENTS

OFFICIAL STATEMENT SUMMARY

This summary is furnished to provide limited introductory information regarding the terms of the Bonds and is qualified by the more detailed descriptions appearing in this Official Statement and the appendices hereto. The offering of the Bonds is made only by means of this entire Official Statement, and no person is authorized to make offers to sell or solicit offers to buy the Bonds unless the entire Official Statement is delivered. Certain terms used in this summary are defined elsewhere in this Official Statement.

The City	The City of Philadelphia, Pennsylvania (the "City") is a political subdivision of the Commonwealth of Pennsylvania.
The Bonds	$269,745,000* City of Philadelphia, Pennsylvania Water and Wastewater Revenue Bonds, Series 2015A (the "2015A Bonds") and $97,655,000* City of Philadelphia, Pennsylvania Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "2015B Bonds" and, together with the 2015A Bonds, the "Bonds"), as shown on the inside cover page of this Official Statement.
Use of Proceeds	The 2015A Bonds are being issued for the purpose of providing funds which, together with other available funds of the City's Water Department (the "Water Department"), will be used to finance a portion of the costs of (i) capital improvements to the City's Water System and Wastewater System, (ii) a deposit to the Debt Reserve Account of the Sinking Fund and (iii) the costs of issuance relating to the 2015A Bonds. The 2015B Bonds are being issued for the purpose of providing funds which, together with other available funds of the Water Department, will be used to finance a portion of the costs of (i) the refunding, on a current basis, of a portion of the City's outstanding Water and Wastewater Revenue Bonds, Series 2005A and (ii) the costs of issuance relating to the 2015B Bonds. See "PLAN OF FINANCE" and "ESTIMATED SOURCES AND USES OF FUNDS" contained herein.
Maturity	The Bonds mature on the dates in the principal amounts set forth in the inside cover page hereof.
Interest	Interest on the Bonds accrues from their date of delivery and is payable on January 1 and July 1, commencing January 1, 2016, until maturity or earlier redemption.
Redemption	The Bonds are subject to optional and mandatory redemption prior to maturity as described herein. See "THE BONDS – Redemption Provisions" contained herein.
Ratings	Fitch Ratings, Inc. ("Fitch"), Moody's Investors Service, Inc. ("Moody's") and Standard & Poor's Rating Services ("S&P") have assigned credit ratings of "A+", with a stable outlook, "A1", with a stable outlook and "A", with a positive outlook, respectively, to the Bonds. See "RATINGS" contained herein.
Security for the Bonds	The Bonds, together with other Water and Wastewater Revenue Bonds currently outstanding or hereafter issued under the General Ordinance, are revenue bonds secured by and payable from (i) all rents, rates, fees and charges imposed or charged for connection to, or use or product of or services generated by the System to the ultimate users thereof, (ii) all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, (iii) all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the System, (iv) all grants, payments and

* Preliminary, subject to change.

	contributions made in aid or on account of the System exclusive of grants and similar payments and contributions solely in aid of construction and (v) all accounts, contract rights and general intangibles representing the foregoing (collectively referred to as, the "Project Revenues"). The City pledges, assigns and grants to the Fiscal Agent, in trust for the security and payment of all Water and Wastewater Revenue Bonds, a lien on and security interest in all Project Revenues and all amounts on deposit in or standing to the credit of the Water and Wastewater Funds, for the equal and ratable benefit of all present and future holders of Water and Wastewater Revenue Bonds issued under the General Ordinance. See "SECURITY FOR THE BONDS" contained herein.
Debt Reserve Account	The City is required to deposit in the Debt Reserve Account a portion of the proceeds of the 2015A Bonds in an amount which, when added to the Outstanding balance in the Debt Reserve Account, will be equal to the Debt Reserve Requirement immediately after the issuance of the Bonds. If at any time and for any reason, the moneys in the Debt Service Account of the Sinking Fund are insufficient to pay as and when due, the principal of (and premium, if any) or interest on any Bond, the Fiscal Agent is authorized and directed to withdraw from the Debt Reserve Account and pay over the amount of such deficiency for deposit in the Debt Service Account. As of February 27, 2015, the balance in the Debt Reserve Account was $212,659,929.52, which is in excess of the Debt Reserve Requirement. See "SECURITY FOR THE BONDS – Debt Reserve Account."
Debt Service Coverage Ratio	The General Ordinance mandates a debt service coverage ratio of at least 1.20 for revenue bond debt service and at least 1.00 for "total debt service" (defined below).
Equally and Ratably Secured	All Water and Wastewater Revenue Bonds (other than Subordinated Bonds) are equally and ratably secured under the General Ordinance. As of the date of this Official Statement, no Subordinated Bonds are Outstanding under the General Ordinance.
Rate Covenant	The City covenants to Bondholders that it will establish rents, rates, fees and charges for the use of the System sufficient to yield Net Revenues in each Fiscal Year at least equal to 1.20 times the Debt Service Requirements for such Fiscal Year. In addition, the City covenants with Bondholders that Net Revenues, in each Fiscal Year, will be at least equal to 1.00 times the following, referred to as "total debt service" for such Fiscal Year: (i) the Debt Service Requirements; (ii) amounts required to be deposited into the Debt Reserve Account; (iii) debt service payable on General Obligation Bonds issued for the System; (iv) debt service due on Interim Debt; and (v) the Capital Account Deposit Amount, less any amounts transferred from the Residual Fund to the Capital Account. As of the date hereof, no General Obligation Bonds issued for the System are outstanding, and no Interim Debt is outstanding. See "SECURITY FOR THE BONDS – Rate Covenant" contained herein.
Consulting Engineer's Report	Prior to and as a condition of the enactment of a supplemental ordinance authorizing the issuance and delivery of a series of Water and Wastewater Revenue Bonds, the City is required, under the General Ordinance, to deliver a Consulting Engineer's Report to City Council. Black & Veatch Corporation has performed engineering evaluations of the current condition and financial operations of the System providing the basis for the required findings that Net Revenues are sufficient to comply with the Rate Covenant and that the System is in good operating condition. See "INTRODUCTORY STATEMENT – Consulting Engineer's Report" and APPENDIX II for a copy of the Consulting Engineer's Report.

Book-Entry Only System	The Bonds are initially issuable only to Cede & Co., the nominee of The Depository Trust Company, New York, New York ("DTC"), pursuant to a book-entry only system. No physical delivery of the Bonds will be made to the beneficial owners of the Bonds. Principal of and interest on the Bonds will be paid to Cede & Co., which will distribute such payments to the participating members of DTC for remittance to the beneficial owners of the Bonds. See APPENDIX VIII herein.
Payment Record	The City has never failed to make a payment of principal of or interest on its Water and Wastewater Revenue Bonds.
Fiscal Agent/Registrar	The fiscal agent for the Bonds is U.S. Bank National Association, Philadelphia, Pennsylvania, a national banking association.
Tax Exemption	In the opinions of Co-Bond Counsel, interest on the Bonds is excludable from gross income for purposes of federal income tax, assuming continuing compliance with the requirements of the federal tax laws. Interest on the Bonds is not a preference item for purposes of either individual or corporate federal alternative minimum tax; however, interest paid to corporate holders of the Bonds may be indirectly subject to alternative minimum tax under certain circumstances described under "TAX EXEMPTION" herein. Under the laws of the Commonwealth of Pennsylvania, the Bonds are exempt from personal property taxes and interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax. For a more complete discussion of federal and state tax exemptions, see "TAX EXEMPTION" contained herein.
Investment Considerations	For certain investment considerations relating to the decision to purchase the Bonds, see "INVESTMENT CONSIDERATIONS."

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PRELIMINARY OFFICIAL STATEMENT
relating to

$367,400,000*
City of Philadelphia, Pennsylvania

$269,745,000*	**$97,655,000***
Water and Wastewater Revenue Bonds, Series 2015A	**Water and Wastewater Revenue Refunding Bonds, Series 2015B**

INTRODUCTORY STATEMENT

General

This Official Statement, including the cover page and appendices attached hereto, sets forth certain information in connection with the issuance by the City of Philadelphia, Pennsylvania, a corporation, body politic and city of the first class existing under the laws of the Commonwealth of Pennsylvania (the "City") of its Water and Wastewater Revenue Bonds, Series 2015A (the "2015A Bonds") and its Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "2015B Bonds", and together with the 2015A Bonds, the "Bonds"). Capitalized terms used but not otherwise defined in this Official Statement have the meaning ascribed to them in APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS – Certain Definitions."

The 2015A Bonds are being issued for the purpose of providing funds which, together with other available funds of the City's Water Department (defined herein), will be used to finance a portion of the costs of (i) capital improvements to the City's Water System and Wastewater System (as such terms are defined herein), (ii) a deposit to the Debt Reserve Account of the Sinking Fund, (iii) the costs of issuance relating to the 2015A Bonds. The 2015B Bonds are being issued for the purpose of providing funds which, together with other available funds of the City's Water Department, will be used to finance a portion of the costs of (i) the refunding, on a current basis, of a portion of the City's outstanding Water and Wastewater Revenue Bonds, Series 2005A (the "2005A Bonds") and (ii) the costs of issuance relating to the 2015B Bonds. See "PLAN OF FINANCE" herein.

The Bonds are being issued under (i) The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972 (the "Act") and (ii) the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989, approved June 24, 1993 (the "Restated General Ordinance"), as supplemented and amended by seventeen (17) supplemental ordinances including the Fourteenth Supplemental Ordinance approved by the Mayor on July 5, 2011 (the "Fourteenth Supplemental Ordinance") and the Seventeenth Supplemental Ordinance approved by the Mayor on April 4, 2014 (the "Seventeenth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, including the 2015A Bonds, and the Fifteenth Supplemental Ordinance approved by the Mayor on July 5, 2011 (the "Fifteenth Supplemental Ordinance") and the Sixteenth Supplemental Ordinance approved by the Mayor on April 24, 2013 (the "Sixteenth Supplemental Ordinance"), authorizing the issuance of Water and Wastewater Revenue Bonds, including the 2015B Bonds. The Restated General Ordinance, as supplemented or amended from time to time, is referred to as the "General Ordinance." All bonds issued under the General Ordinance (whether prior to or following the date hereof) are referred to herein as "Water and Wastewater Revenue Bonds." U.S. Bank National Association, Philadelphia, Pennsylvania, is acting as Fiscal Agent (the "Fiscal Agent") for the Water and Wastewater Revenue Bonds.

* Preliminary, subject to change.

The Water Department

Pursuant to the Philadelphia Home Rule Charter (the "Charter"), the City's Water Department (the "Water Department") has the power and duty to operate, maintain, repair and improve the City's water system (the "Water System") and the City's wastewater system (the "Wastewater System" and together with the Water System, the "Water and Wastewater Systems" or the "System"). The Water Department, which began water service in 1801, supplies water to the City and to portions of Montgomery and Delaware Counties, Pennsylvania, and provides wastewater services to the City and to certain municipalities and authorities located in Montgomery, Bucks and Delaware Counties. Under the General Ordinance, the Water and Wastewater Systems are treated as one combined utility for the purpose of revenue bond financing. This has the effect, among other things, of making all revenues of the two systems available for debt service for all Water and Wastewater Revenue Bonds. See "THE WATER DEPARTMENT" herein.

Rate Covenant Under the General Ordinance

Under the General Ordinance, the City must set rates and charges at levels that provide sufficient revenue to meet Operating Expenses (defined herein) of the System, including Interdepartmental Charges (defined herein) for services provided to the Water Department, and debt service requirements on all obligations issued for the Water Department, as well as to meet other specific covenants contained in the General Ordinance. For a more detailed discussion, see "SECURITY FOR THE BONDS – Rate Covenant" and "RATES" contained herein.

Rate Setting Ordinance and Ratemaking Board

Ordinance #130251-A (the "Rate Ordinance") became effective as of January 20, 2014. The Rate Ordinance amended the Philadelphia Code to establish an independent rate making body known as the Philadelphia Water, Sewer, and Stormwater Rate Board (the "Board") responsible for fixing and regulating rates and charges for supplying water, sewer and stormwater services. Any changes to the process for determination of rates and charges to be implemented by the Board pursuant to the Rate Ordinance are expected to take effect in future rate proceedings and not during the pendency of the issuance and delivery of the Bonds. While Water and Wastewater Bonds are outstanding, the Board also will be required to set rates and charges in amounts sufficient to comply with the provisions of the General Ordinance. For a further discussion of the Rate Ordinance and the Board, see "RATES – Charter Amendment and Rate Ordinance" and "RATES – Philadelphia Water, Sewer, and Stormwater Rate Board" herein.

Security for the Bonds

The Bonds are payable from and secured by a pledge of all Project Revenues and amounts on deposit in the Water and Wastewater Funds. See "SECURITY FOR THE BONDS" herein and APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS." Under the General Ordinance, a Debt Reserve Account of the Sinking Fund has been established to secure the Water and Wastewater Revenue Bonds, other than Subordinated Bonds (as defined herein). For a discussion of the Debt Reserve Account, see "SECURITY FOR THE BONDS – Debt Reserve Account" herein.

On the date of issuance of the Bonds, the City will deposit, from a portion of the proceeds of the 2015A Bonds, the amount of $[_________] to the Debt Reserve Account which, together with sums on deposit therein, will be sufficient to meet the Debt Reserve Requirement (as defined herein) for all Water and Wastewater Revenue Bonds outstanding after the issuance of the Bonds. See "SECURITY FOR THE BONDS – Debt Reserve Account."

Consulting Engineer's Report

As required under the General Ordinance, as a condition to the enactment of the supplemental ordinance authorizing the issuance of the Bonds, Black & Veatch Corporation (the "Consulting Engineer") performed engineering evaluations of the condition and financial operations of the System, which, based upon the assumptions recognized in the Consulting Engineer's Report regarding the estimated future annual financial operations of the Water and Wastewater Systems, provide the basis for the following findings: (i) that Project Revenues will be sufficient to meet payment or deposit requirements of the operation, maintenance, repair and replacement of the System, reserve funds, principal or redemption price and interest on outstanding Water and Wastewater Revenue Bonds (including the Bonds); (ii) that Net Revenues (including projected revenue increases as indicated in the Consulting Engineer's Report) are currently sufficient to comply with the Rate Covenant and are projected to be sufficient to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year the Bonds are issued; and (iii) that the System is in good operating condition or that adequate steps are being taken to return it to good operating condition. In connection with the enactment of the Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance, the Consulting Engineer delivered the reports required by the General Ordinance. In connection with the issuance of the Bonds, the Consulting Engineer has delivered to the City its report dated March 18, 2015 (the "Consulting Engineer's Report"), a copy of which is attached hereto and incorporated herein by reference as APPENDIX II.

Capital Improvement Program

As required by the Charter, the City has adopted a six-year capital improvement program for the Water Department to plan and manage the capital investments necessary to fulfill the Water Department's service missions, comply with regulatory requirements and preserve and upgrade the System (the "Capital Improvement Program"). The Water Department updates the Capital Improvement Program annually as part of its annual budget process, based on a detailed project review by engineering staff, external engineering consultants, and senior management. For a more detailed discussion of the Water Department's Capital Improvement Program, see "CAPITAL IMPROVEMENT PROGRAM" herein.

Financial Information

The operations of the Water Department are accounted for in the Water Fund, which is an enterprise fund of the City. The Water Fund is an accounting convention established pursuant to the Charter for the purpose of accounting for the assets, liabilities, revenues, expenses and Rate Covenant compliance for the Water and Wastewater System.

The City reports its financial performance on a consolidated basis in its audited Comprehensive Annual Financial Report ("CAFR"). The CAFR is audited by the City Controller. In addition, the City is required, under the Charter, to issue within one hundred and twenty (120) days after the close of each fiscal year, a statement as of the end of the fiscal year showing the balances in all funds of the City, including the Water Fund, the amounts of the City's known liabilities, and such other information as is necessary to furnish a true picture of the financial condition of the City and its component units, including the Water Department (the "Annual Financial Report"). The Annual Financial Report is intended to meet these requirements and is not audited. It also contains a budgetary comparison schedule for the Water Fund in the required supplementary information. The Annual Financial Report and the CAFR are available on the City's Investor Website (defined below).

The financial information of the Water Fund for the Fiscal Year ended June 30, 2014 attached hereto as APPENDIX I is derived from the CAFR for the Fiscal Year ended June 30, 2014. The financial information pertaining to the Water Fund is extracted from the City's audited financial information contained in the CAFR in order to present the financial condition of the Water Department separately from the financial condition of the City and its other funds and units as a whole. The City Controller has neither examined nor expressed an opinion on the financial statements for the Water Fund contained in APPENDIX I to this Official Statement or on any other financial data contained in this Official Statement. The City Controller has examined and expressed opinions on the basic financial statements of the City contained in the CAFR for Fiscal Years 2012, 2013 and 2014. See "GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA – Summary Financial Information – Independent Audit and Opinion of the City Controller" in APPENDIX IV.

The City Controller has neither participated in the preparation of this Official Statement nor in the preparation of the budget estimates and projections and cash flow statements and forecasts set forth in various tables contained in this Official Statement. The City Controller expresses no opinion with respect to any of the data contained in this Official Statement.

Miscellaneous

Brief descriptions of the Water Department, the Bonds and the security therefor, and certain information about the City are included herein. All references herein to the Act, the Charter, the General Ordinance and the Consulting Engineer's Report are qualified in their entirety by reference to each such document. A copy of the CAFR for the Fiscal Year ended June 30, 2014, which includes audited financials of and other information relating to the Water Fund, may be downloaded at http://www.phila.gov/investor (the "City's Investor Website") or at the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System (http://www.emma.msrb.org).

The "Terms of Use" statement of the City's Investor Website, which applies to all users of the City's Investor Website, provides, among other things, that the information contained therein is provided for the convenience of the user, that the City is not obligated to update such information, and that the information may not provide all information that may be of interest to investors. The information contained on the City's Investor Website does not constitute an offer to buy or sell securities, nor is it a solicitation therefor. The information contained in the City's Investor Website is not incorporated by reference in this Official Statement and persons considering the purchase of the Bonds should rely only on information contained in this Official Statement or incorporated by reference herein.

The foregoing statement as to filing or furnishing of additional information reflects the City's current practices, but is not a contractual obligation to the holders of the City's bonds.

The financial statements of the Water Fund derived from the CAFR for the Fiscal Year ended June 30, 2014 are attached hereto as APPENDIX I. The Consulting Engineer's Report is attached hereto as APPENDIX II. Summaries of certain provisions of the Act, the General Ordinance, the Fourteenth and Seventeenth Supplemental Ordinance, pursuant to which the 2015A Bonds will be issued and the Fifteenth and Sixteenth Supplemental Ordinances, pursuant to which the 2015B Bonds will be issued (including definitions of certain terms) are attached hereto as APPENDIX III. The Government and Financial Information of the City is attached hereto as APPENDIX IV. The City of Philadelphia Socioeconomic Information is attached hereto as APPENDIX V. The forms of opinions of Co-Bond Counsel to be delivered in connection with the issuance and delivery of the Bonds are attached hereto as APPENDIX VI. The form of Continuing Disclosure Agreement related to the Bonds is attached hereto as APPENDIX VII. Information relating to the Depository Trust Company is attached hereto as APPENDIX VIII.

The foregoing information is furnished solely to provide limited introductory information with respect to the Bonds and does not purport to be comprehensive or definitive. All such information is qualified in its entirety by reference to the more detailed descriptions appearing elsewhere in this Official Statement, inclusive of the Appendices, which should be read in its entirety, and to the complete documents referenced herein. The sale of the Bonds is made only by means of this entire Official Statement.

THE BONDS

General

The Bonds will be issued in the aggregate principal amount, will be dated, will bear interest at the rates and will mature on the dates and in the amounts shown on the inside front cover page of this Official Statement. The Bonds will be issued in fully-registered form, registered in the name of Cede & Co., as nominee of The Depository Trust Company ("DTC") pursuant to DTC's Book-Entry Only System. See APPENDIX VIII herein.

The Bonds will be dated and will bear interest from their date of delivery and will be issued in denominations of $5,000 or any integral multiple thereof. Interest on the Bonds, calculated on the basis of a 360-day year comprised of twelve 30 day months, will be payable semiannually on January 1 and July 1 of each year, beginning January 1, 2016 (each, an "Interest Payment Date"). The Record Date for the Bonds will be each June 15 and December 15.

Redemption Provisions

2015A Bonds

Optional Redemption. The 2015A Bonds maturing on or prior to July 1, 20__ are not subject to optional redemption prior to maturity. The 2015A Bonds maturing on or after July 1, 20__ are subject to optional redemption prior to maturity on or after July 1, 20__, at the option of the City, as a whole or in part on any date in the maturities selected by the City and within a maturity and a given interest rate by lot as determined by the Fiscal Agent at the redemption price of 100% of the principal amount of the 2015A Bonds to be redeemed, plus accrued interest to the redemption date.

Mandatory Sinking Fund Redemption. The 2015A Bonds maturing on July 1, 20__ and July 1, 20__ are subject to mandatory sinking fund redemption prior to maturity, as drawn by lot by the Fiscal Agent, in the following years at a redemption price equal to 100% of the principal amounts set forth below.

Year (July 1)*	Principal Amount
20__	$__________
20__	__________
20__**	__________

**Final maturity

Year (July 1)*	Principal Amount
20__	$__________
20__	__________
20__**	__________

**Final maturity

The principal amount of the 2015A Bonds required to be redeemed on each mandatory sinking fund redemption date may be reduced by the principal amount of the 2015A Bonds theretofore redeemed (otherwise than by mandatory sinking fund redemption) or delivered to the Fiscal Agent for cancellation, and not theretofore applied as a credit against any mandatory sinking fund redemption obligation. Any such reduction will be applied as a credit against the mandatory sinking fund obligation for the year or years selected by the City.

2015B Bonds

Optional Redemption. The 2015B Bonds maturing on or prior to July 1, 20__ are not subject to optional redemption prior to maturity. The 2015B Bonds maturing on or after July 1, 20__ are subject to optional redemption prior to maturity on or after July 1, 20__, at the option of the City, as a whole or in part on any date in the maturities selected by the City and within a maturity and a given interest rate by lot as determined by the Fiscal Agent at the redemption price of 100% of the principal amount of the 2015B Bonds to be redeemed, plus accrued interest to the redemption date.

* Preliminary, subject to change.

Debt Service Requirements

The following table sets forth the existing aggregate debt service requirements for all Outstanding Water and Wastewater Revenue Bonds, including the 2005A Bonds to be refunded with the proceeds of the 2015B Bonds.

Table 1
Debt Service Requirements

Fiscal Year Ending June 30	Aggregate Debt Service on Outstanding Bonds (1)(2)(3)(4)(5)	2015A Bonds Principal	2015A Bonds Interest	2015B Bonds Principal	2015B Bonds Interest	Aggregate Debt Service
2015	$ 204,910,294	$	$	$	$	$
2016	212,067,661					
2017	193,168,697					
2018	195,033,281					
2019	145,866,578					
2020	135,610,630					
2021	135,925,642					
2022	124,961,846					
2023	125,820,815					
2024	100,767,787					
2025	100,620,220					
2026	97,726,308					
2027	95,361,837					
2028	80,159,099					
2029	89,662,222					
2030	89,539,631					
2031	89,530,424					
2032	89,526,837					
2033	59,321,681					
2034	59,197,438					
2035	59,183,581					
2036	59,163,969					
2037	31,736,375					
2038	31,736,625					
2039	31,736,625					
2040	31,738,250					
2041	47,578,625					
2042	29,173,075					
2043	29,167,131					
2044	10,767,625					
Total(6)	**$2,786,760,810**	**$**	**$**	**$**	**$**	**$**

(1) Includes total debt service requirements for Fiscal Year 2015. As of February 27, 2015, $135,073,404 has been paid.
(2) Interest on the Series 1997B Bonds is assumed at a rate of 0.0547%, the average interest rate on the Series 1997B Bonds for the 24 consecutive months immediately preceding the date of calculation.
(3) Interest for the Series 2005B Bonds is calculated at a fixed swap rate of 4.53% per annum; actual rate may vary.
(4) Includes debt service for the 1999 Pennvest Bond, 2009 Pennvest Bonds, and 2010 Pennvest Bond.
(5) Reflects debt service outstanding as of June 30, 2014 and draw downs for Fiscal Year 2015 on Pennvest Loan 2010B.
(6) Totals may not add due to rounding.

SECURITY FOR THE BONDS

Equally and Ratably Secured

All Water and Wastewater Revenue Bonds (other than Subordinated Bonds) are equally and ratably secured under the General Ordinance. **AS OF THE DATE OF THIS OFFICIAL STATEMENT, NO SUBORDINATED BONDS ARE OUTSTANDING UNDER THE GENERAL ORDINANCE.**

Pledge of Project Revenues

Pursuant to the General Ordinance, the City pledges and assigns to the Fiscal Agent, in trust, for the security and payment of all Water and Wastewater Revenue Bonds (other than Subordinated Bonds) issued under or subject to the General Ordinance, and grants to the Fiscal Agent, in trust, a lien on and security interest in all Project Revenues and amounts on deposit in or standing to the credit of the Water and Wastewater Funds. The Fiscal Agent must hold and apply the security interest in and lien on Project Revenues and funds and accounts, in trust, for the equal and ratable benefit and security of all present and future holders of Water and Wastewater Revenue Bonds (other than Subordinated Bonds). The General Ordinance provides that such pledge also may be for the benefit of the provider of a Credit Facility or a Qualified Swap (as defined therein), or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price of and interest on any series of Water and Wastewater Revenue Bonds (other than Subordinated Bonds), on an equal and ratable basis with the holders of Water and Wastewater Revenue Bonds (other than Subordinated Bonds).

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Priority and Application of Project Revenues

The priority and application of Project Revenues under the terms of the General Ordinance and other amounts deposited into the Revenue Fund are set forth below:

Payment of Operating Expenses;

↓

Payment of the principal or redemption price of and interest on Water and Wastewater Revenue Bonds issued under the General Ordinance (except Subordinated Bonds), regularly scheduled payments under any Swap Agreement, payments under any Credit Facility to repay advances thereunder to pay any of the foregoing and payments with respect to fees and expenses in respect of any Credit Facility;

↓

Payments into the Debt Reserve Account to the extent necessary to cure a deficiency therein;

↓

Payments into any debt reserve account established within the Sinking Fund and not held for the equal and ratable benefit of all Water and Wastewater Revenue Bonds (other than Subordinated Bonds) to the extent necessary to cure a deficiency therein;

↓

Payment of principal or redemption price of and interest on any Subordinated Bonds;

↓

All payments due under a Qualified Swap, other than regularly scheduled swap payments, including, without limitation, any payments due to a Swap Provider upon the early termination of a Swap Agreement;

↓

Transfer to the City of the amount necessary to pay General Obligation Bonds issued for the System;

↓

Transfer to the Rate Stabilization Fund of the amount determined by the Water Commissioner;

↓

Transfer to the Capital Account of the Construction Fund the sum of the Capital Account Deposit Amount, the Debt Service Withdrawal and the Operating Expense Withdrawal, less any amounts transferred to the Capital Account from the Residual Fund; and

↓

After providing for repayment of any inter-Fund loans, transfer to the Residual Fund of any amount remaining on deposit in the Revenue Fund.

The General Ordinance permits the application of Project Revenues to pay Interdepartmental Charges and permits moneys to be transferred in each Fiscal Year from the Residual Fund to the City's General Fund in an amount not to exceed the lower of (A) all Net Reserve Earnings (as defined below) or (B) $4,994,000. In Fiscal Years 2012, 2013 and 2014, the Water Department transferred $1,086,164.69,

$560,156.08 and $400,363.54, respectively, to the City's General Fund. "Net Reserve Earnings" means the amount of interest earnings during the Fiscal Year on amounts in the Debt Reserve Account and the Subordinated Bond Fund less the amount of interest earnings during the Fiscal Year on amounts in any such reserve funds and accounts giving rise to a rebate obligation pursuant to Section 148(f) of the Internal Revenue Code of 1986, as amended.

Water and Wastewater Funds

Funds and Accounts. The Act and the General Ordinance establish the following funds and accounts to be held by the Fiscal Agent:

(a) Revenue Fund;

(b) Sinking Fund and within such fund a Debt Service Account, a Charges Account and a Debt Reserve Account;

(c) Subordinated Bond Fund;

(d) Rate Stabilization Fund;

(e) Construction Fund and within such fund an Existing Projects Account, a Bonds Proceeds Account and a Capital Account; and

(f) Residual Fund and within such fund a Special Water Infrastructure Account.

The foregoing funds are referred to herein as the "Water and Wastewater Funds." The Water and Wastewater Funds are required under the General Ordinance to be held separate and apart from all other funds and accounts of the City and the Fiscal Agent, and the funds and accounts therein shall not be commingled with, loaned or transferred among themselves or to any other City funds or accounts except as expressly permitted by the General Ordinance. The General Ordinance also establishes a Rebate Fund, which is not held for the benefit of the holders of the Water and Wastewater Revenue Bonds.

Project Revenues. The City is required by the General Ordinance to cause all Project Revenues received by it on any date to be deposited into the Revenue Fund upon receipt thereof by the City, and the Fiscal Agent shall, upon receipt of Project Revenues, deposit such Project Revenues into the Revenue Fund. The City and Fiscal Agent also shall cause to be deposited into the Revenue Fund such portion of the proceeds of the Bonds as are designated by Supplemental Ordinance or Bond Committee Determination and any other funds directed to be deposited into the Revenue Fund by the City. Except for the transfer to the Residual Fund, the City has covenanted in the General Ordinance that it will not direct the Fiscal Agent to transfer, loan or advance proceeds of the Bonds or Project Revenues from the Water and Wastewater Funds to any City account for application other than as permitted under the General Ordinance.

Project Revenues include, among other things, rents, rates, fees and charges from users of the products and services generated by the System (collectively, "rates and charges"). Collection and accounting of rates and charges are administered by the Water Revenue Bureau within the City's Department of Revenue. (See "THE WATER DEPARTMENT – Administration" herein.) Historically, all rates and charges collected by the Water Revenue Bureau, whether by cashier, mail, or electronic payment, are recorded upon receipt, and are held temporarily by the City's fiscal agent in a consolidated cash account of the City. The City generates a report of rates and charges collected at each day's end and transfers, typically on the next day, all rates and charges so held to one or more accounts controlled by the Fiscal Agent for the Water and Wastewater Funds for deposit by the Fiscal Agent into the Revenue Fund. The City is undertaking an examination of this collection and accounting process with a view towards effecting deposit of rates and charges with the Fiscal Agent into the Revenue Fund as and when received.

See APPENDIX I — "FINANCIAL STATEMENTS OF THE WATER FUND DERIVED FROM THE CAFR FOR FISCAL YEAR ENDED JUNE 30, 2014" and APPENDIX III — "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS" for additional information concerning the application of Project Revenues and further description of the funds and accounts established under the General Ordinance and their purposes.

Interfund Loans. If at any time sufficient moneys are not available in the Revenue Fund to pay Operating Expenses (defined herein) and to make the transfers described above under "Application of Project Revenues," then amounts on deposit in the Construction Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Revenue Fund, for the payment of such Operating Expenses to the extent of the deficiency, until such loaned amounts are required by the Water Department for purposes of the Fund making the loan. "Operating Expenses" means all costs and expenses of the Water Department necessary to operate and maintain the System in good operating condition, including, without limitation, salaries and wages, purchases of services by contract, costs of materials, supplies and expendable equipment, maintenance costs, costs of any property or the replacement thereof or for any work or project, related to the System (that is not properly chargeable to property, plant and equipment), pension and welfare plan and workers' compensation requirements, provisions for claims, refunds and uncollectible receivables and services performed for the Water Department by other City departments or commissions or required to be charged to the Water Department under the Charter. If a similar deficiency exists in the Construction Fund, amounts on deposit in the Revenue Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Construction Fund, to the extent of the deficiency, until required by the Water Department for purposes of the Fund making the loan.

The Water Department typically makes an interfund loan in each Fiscal Year from the Rate Stabilization Fund to the Revenue Fund to provide working capital, which loan is repaid at the end of such Fiscal Year. Additionally, the interfund loan provisions of the General Ordinance were exercised in Fiscal Year 2013 in connection with the replenishment of the Debt Reserve Account after the provider of the surety policy on deposit in the Debt Reserve Account was downgraded and no longer eligible to be included in the calculation of the Debt Reserve Requirement under the General Ordinance. See " – Debt Reserve Account" below for additional information concerning the Debt Reserve Account and the surety policy. The Water Department may make other interfund loans from time to time in accordance with the provisions of the General Ordinance.

Debt Reserve Account

The General Ordinance establishes within the Sinking Fund a Debt Reserve Account that will be funded (if required to be funded) with the proceeds of each series of Water and Wastewater Revenue Bonds; provided, however, that if the Supplemental Ordinance authorizing a series of Water and Wastewater Revenue Bonds shall so authorize, the deposit to the Debt Reserve Account in respect of such Water and Wastewater Revenue Bonds may be accumulated from Project Revenues over a period of not more than three Fiscal Years after the issuance and delivery of the related Water and Wastewater Revenue Bonds. The moneys and investments in the Debt Reserve Account will be held and maintained in an amount equal at all times to the Debt Reserve Requirement. "Debt Reserve Requirement" means, with respect to all Water and Wastewater Revenue Bonds, an amount equal to the lesser of (i) the greatest amount of Debt Service Requirements payable in any one Fiscal Year (except that such Debt Service Requirement will be computed as if any Qualified Swap did not exist and the Debt Service Requirements attributable to any Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Supplemental Ordinance or Bond Committee Determination for such bonds), determined as of any particular date and (ii) the maximum amount to be financed with proceeds of bonds permitted by Section 148(d)(1) of the Code. Debt Service Requirements, with reference to a specified period, means: (a) amounts required to be paid into any mandatory sinking fund established for the benefit of each series of Water and Wastewater Revenue Bonds during such period; (b) amounts needed to pay the principal or redemption price of such Water and Wastewater Revenue Bonds maturing during such period and not to be redeemed at or prior to maturity through any sinking fund established for the benefit of such series of Water and Wastewater Revenue Bonds; (c) interest payable on such series of Water and Wastewater Revenue Bonds during such period, with adjustment for capitalized interest or redemption through any sinking fund established for the benefit of such Water and Wastewater Revenue Bonds; and (d) all net amounts, if any, due and payable by the City under a Qualified Swap during such period. If at any time the moneys in the Debt Service Account of the Sinking Fund are insufficient to pay as and when due the principal of (and premium, if any) or interest on any series of Water and Wastewater Revenue Bonds or other obligations payable from the Debt Service Account (including obligations arising in connection with Qualified Swap Agreements and Credit Facilities), the Fiscal Agent is required to transfer from the Debt Reserve Account the amount of such deficiency for deposit in the Debt Service Account.

With respect to any issue of Water and Wastewater Revenue Bonds, in lieu of the required deposit into the Debt Reserve Account, the City may cause to be deposited into the Debt Reserve Account a surety bond, an insurance policy or an irrevocable letter of credit. Under the terms of the General Ordinance, any surety bond, insurance policy or letter of credit provided by the City in lieu of required deposits within the Debt Reserve Account would, at the time of issuance thereof, have to meet the credit quality requirements of the General Ordinance as follows:

- The bond insurer must be an insurer whose municipal bond insurance policies results in such issues being rated not lower than the second highest rating category (without distinction) by either Moody's or S&P.

- The letter of credit issuer must be a bank or trust company which is rated not lower than the second highest rating category (without distinction) by either Moody's or S&P. See APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS – The Restated General Water and Wastewater Revenue Bond Ordinance of 1989 – Debt Reserve Account."

The Mayor approved the Debt Reserve Account Amendment on January 23, 2007 (the "Debt Reserve Account Amendment"), pursuant to which the Director of Finance is authorized to apply moneys currently on deposit in the Debt Reserve Account to purchase a qualified surety bond or insurance policy, to transfer the resulting excess moneys in the Debt Reserve Account to the Special Water Infrastructure Account within the Residual Fund and to apply the moneys deposited therein to the cost of renewals, replacements and improvements to the System. The Debt Reserve Account has been funded with the proceeds of Water and Wastewater Revenue Bonds, funds of the Water Department, earnings on investments in the Debt Reserve Account and a surety policy (the "Surety Policy") issued on November 26, 2007 by Assured Guaranty Municipal Corp. (formerly known as Financial Security Assurance Inc., "AGM") in the aggregate principal amount of $67,000,000. On January 17, 2013, Moody's downgraded the insurance financial strength rating of AGM to "A2" from "Aa3". As a result of the downgrade, the Surety Policy no longer met the requirements of the General Ordinance. In response, the Water Department, through the Fiscal Agent, transferred U.S. Treasury securities and cash from the Residual Fund to the Debt Reserve Account to meet the Debt Reserve Requirement. The Surety Policy, which expires on July 1, 2035 remains in effect, and in the event of a draw on the Debt Reserve Account, the Surety Policy requires that cash available in the Debt Reserve Account be applied first, before the Surety Policy is drawn upon. If in the future AGM's rating were to meet the requirements of the General Ordinance and the Surety Policy remains in effect, the Water Department will have the right, but not the obligation, to transfer from the Debt Reserve Account such cash and U.S. Treasury securities on deposit in excess of the Debt Reserve Requirement to the Revenue Fund; and any portion of such excess that constitutes Bond proceeds may be applied only to pay debt service on Water and Wastewater Bonds or costs of eligible capital projects of the Water Department. See APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS – The Restated General Water and Wastewater Revenue Bond Ordinance of 1989 – Residual Fund" for a discussion of the Residual Fund and the permitted uses of amounts on deposit therein.

The Debt Reserve Requirement for all Outstanding Water and Wastewater Revenue Bonds, as of February 27, 2015 was $212,067,661.35. The balance on account in the Debt Reserve Account as of February 27, 2015, was $212,659,929.52, of which $714,670.57 is accrued interest. PFM Asset Management LLC, in its capacity as investment advisor, calculated the foregoing amounts. On the date of issuance of the Bonds, the amount on deposit in the Debt Reserve Account, which will include the deposit related to the 2015A Bonds, will be sufficient to meet the Debt Reserve Requirement for all Water and Wastewater Revenue Bonds outstanding after the issuance of the Bonds. **THE VALUE OF THE SURETY POLICY DESCRIBED IN THE PRECEDING PARAGRAPH IS EXCLUDED IN CALCULATING THE AMOUNT ON DEPOSIT IN THE DEBT RESERVE ACCOUNT, EVEN THOUGH SUCH SURETY POLICY REMAINS IN EFFECT.**

Rate Covenant

The Rate Covenant contained in Section 5.01 of the General Ordinance (the "Rate Covenant") requires, while any Water and Wastewater Revenue Bonds remain outstanding, the City to establish rents, rates, fees and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues in each Fiscal Year at least equal to 1.20 times the Debt Service Requirements for such Fiscal Year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds, of which none exist). In addition, Net Revenues (defined herein), in each Fiscal Year, must be at least equal to 1.00 times the sum of the following for such Fiscal Year: (i) the Debt Service Requirements (including Debt Service Requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account; (iii) debt service payable on General Obligation Bonds issued for the System; (iv) debt service due on Interim Debt; and (v) the Capital Account Deposit Amount, less any amounts transferred from the Residual Fund to the Capital Account. As of the date hereof, no general obligation bonds issued for the System are outstanding, and no Interim Debt is outstanding. Net Revenues for any period means: the Project Revenues collected during such period and deposited into the Revenue Fund plus (x) the amounts, if any, transferred from the Rate Stabilization Fund into the Revenue Fund as of the end of such period and (y) interest earnings during such period on moneys in any of the funds or accounts established under the General Ordinance to the extent such interest earnings are credited to the Revenue Fund pursuant to the General Ordinance, and minus the sum of (a) Operating Expenses incurred during such period and (b) the amounts, if any, transferred from the Revenue Fund to the Rate Stabilization Fund as of the end of such period; provided, however that in determining such Net Revenues, the Initial Deposit shall not reduce such Net Revenues. To ensure compliance with the Rate Covenant, the General Ordinance requires that the City review its rents, rates, fees and charges promptly upon any material change in the circumstances which were contemplated at the time such rents, rates, fees and charges were reviewed, but not less frequently than once each Fiscal Year. For a discussion of the Water Department's experience in meeting the Rate Covenant, see "HISTORICAL AND PROJECTED FINANCIAL INFORMATION – Compliance with Rate Covenant" herein. Notwithstanding any future changes in the rate making process, while any Water and Wastewater Bonds remain outstanding, the City is required to comply with the Rate Covenant.

Rate Ordinance

The Rate Ordinance established the Board, an independent rate making body responsible for setting prospective rates and charges for water, sewer and stormwater services in accordance with the standards set forth in the Philadelphia Code. The City and the Water Department processes and procedures remain in force consistent with the Rate Ordinance, until such time as the Board establishes new processes and procedures. Changes, if any, by the Board to the process for setting rates and charges shall take effect after the issuance and delivery of the Bonds. For a further discussion of the Rate Ordinance, see "RATES – Charter Amendment and Rate Ordinance" herein.

Insurance Covenants

In addition to the Rate Covenant described above, for each Fiscal Year, the City has covenanted to AGM that, for so long as any of the Series 2005A Bonds, the Series 2005B Bonds or the portion of the Series 2010A Bonds insured by AGM are outstanding, the City will establish rates and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund as of the end of such Fiscal Year) at least equal to 90% of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such Fiscal Year (the "90% Test"). The City also has covenanted that in addition to the conditions described below under "- Additional Bonds," any calculation by a Consulting Engineer of the City's projected compliance with the Rate Covenant in connection with the proposed issuance of Additional Bonds must state that Net Revenues (excluding amounts transferred from the Rate Stabilization Fund to the Revenue Fund as of the end of such Fiscal Year) for such Fiscal Year included in the projection period are projected to be at least equal to 90% of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) for such Fiscal Year. The foregoing agreement is for the benefit of AGM only and may be amended or waived by AGM in its sole discretion without the consent of holders of the Bonds.

The Water Department has met these additional rate covenants for each of the Fiscal Years such covenants have been in effect.

Additional Bonds

The General Ordinance permits the issuance of additional bonds, which may be secured on a parity basis with the outstanding bonds issued under thereunder. The General Ordinance imposes certain conditions on the issuance of additional bonds, including the condition that a report of a Consulting Engineer be delivered to City Council stating that the Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the additional bonds are to be issued; provided that, if interest on any of the additional bonds is to be capitalized, the projection shall extend to the two Fiscal Years following the Fiscal Year up to which interest is capitalized. See APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS" for a discussion of the circumstances under which additional bonds may be issued under the General Ordinance.

Transfer to an Authority

The City is authorized under the General Ordinance, upon the satisfaction of the conditions specified in the General Ordinance, to convey and assign to a municipal authority or another entity (the "Transferee") all or substantially all of the City's right, title and interest in and to the System, so long as such Transferee assumes the City's obligations under the General Ordinance. Thereafter, the City would be released from all of its obligations under the General Ordinance and under the outstanding Water and Wastewater Revenue Bonds and the Transferee would assume such obligations. For more information on the conditions precedent to such a transfer, see APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS – Summary of Operative Provisions of the General Ordinance – Conveyance of System and Assignment, Assumption and Release."

Limitations on Effectiveness of Pledge of Project Revenues and Water and Wastewater Funds

The effectiveness of the pledge of the Project Revenues and the Water and Wastewater Funds may be limited because, while the Fiscal Agent will have custody of the Water and Wastewater Funds, the City will have complete control of deposits into and expenditures from the Water and Wastewater Funds, except for amounts on deposit in the Sinking Fund, including the Debt Reserve Account. No requisition procedure or other similar procedure will be established for the expenditure of moneys by the City from the Water and Wastewater Funds, and no consent or approval of the Fiscal Agent is required to be obtained by the City as a condition of the City's expenditure of such moneys. The Fiscal Agent will not monitor deposits into or withdrawals from the Water and Wastewater Funds (other than the Sinking Fund, including the Debt Reserve Account) or the purposes for which such moneys are utilized.

The General Ordinance provides that if the City fails to make a deposit of Project Revenues as required under the General Ordinance, the Fiscal Agent is authorized to and shall seek, by mandamus or other suit, action or proceeding at law or in equity, the specific enforcement or performance of the obligation of the City to cause the Project Revenues to be transferred to the Revenue Fund.

No daily, monthly or other periodic deposits are required to be made into the Sinking Fund prior to the dates on which debt service payments on the Water and Wastewater Revenue Bonds are due.

The enforcement of remedies available to Bondholders (or the Fiscal Agent or any trustee for Bondholders) under the Act or the General Ordinance may be limited by the Federal Bankruptcy Code, as now or hereafter enacted, and other laws or legal or equitable principles which may affect the enforcement of creditors' rights. Examples of limitations on the remedies of Bondholders are discussed below.

OUTSTANDING INDEBTEDNESS AND OTHER LONG-TERM AGREEMENTS

Outstanding Indebtedness

As set forth in the table below, as of February 27, 2015, there was outstanding $1,779,781,224 aggregate principal amount of Water and Wastewater Revenue Bonds, referred to collectively as the "Outstanding Bonds." The Water Department's maximum annual debt service requirement is $212,067,661 and occurs in Fiscal Year 2016. See APPENDIX I – Bonded Debt for Fiscal Year Ended June 30, 2014.

Table 2
Outstanding Indebtedness

Series of Bonds	Original Principal Amount (in thousands)	Outstanding Principal Amount (in thousands) **	Fixed/Variable Rate	Year of Maturity
1997B	$ 100,000	$ 60,400	Variable	2027
Pennvest 1999*	6,700	357	Fixed	2019
2005A	250,000	111,715	Fixed	2035
2005B	86,105	51,640	Variable	2017
2007A	191,440	137,010	Fixed	2027
2007B	153,595	151,975	Fixed	2031
2009A	140,000	140,000	Fixed	2036
2010A	396,460	251,830	Fixed	2019
2010C	185,000	185,000	Fixed	2040
2011A	135,000	135,000	Fixed	2041
2011B	49,855	49,855	Fixed	2026
2012	70,370	65,005	Fixed	2028
2013A	170,000	170,000	Fixed	2043
2014A	123,170	30,000	Fixed	2043
Pennvest 2009B*	42,886	23,677	Fixed	2025
Pennvest 2009C*	57,268	34,366	Fixed	2026
Pennvest 2009D*	84,759	61,750	Fixed	2028
Pennvest 2010B*	30,000	27,031	Fixed	2032
TOTAL	**$2,272,608**	**$1,779,781**		

* The interest rate on the Pennvest Bonds is 1.193% during the first 5 years of amortization and thereafter 2.107% until maturity.
** Inclusive of outstanding principal of the 2005A Bonds to be refunded using the proceeds of the 2015B Bonds.

On May 15, 2013, in connection with the purchase of the Series 2005B Bonds by Banc of America Preferred Funding Corporation ("Banc of America") the City and Banc of America entered into a Continuing Covenants Agreement dated as of May 1, 2013 (the "Continuing Covenants Agreement"). To review the events of default contained in the Continuing Covenants Agreement and certain remedies available to Banc of America upon the occurrence of such an event of default, please refer to the Municipal Securities Rulemaking Board's Electronic Municipal Market Access System (http://www.emma.msrb.org), where a redacted version of the Continuing Covenants Agreement has been made available to the public.

Swap Agreement

On December 5, 2002, the City entered into an ISDA Master Agreement, Schedule and a Confirmation (collectively, the "Swap Agreement") with Citigroup Financial Products Inc., as successor to

Salomon Brothers Holding Company, Inc. (the "Swap Provider"). Pursuant to the terms of the Swap Agreement, the City pays to the Swap Provider a fixed rate of 4.53% and receives from the Swap Provider a floating rate equal to the variable interest rate due on the Series 2005B Bonds. The initial notional amount under the Swap Agreement was $86,105,000, and as of February 27, 2015, the outstanding notional amount was $51,640,000. Upon entering into the Swap Agreement, the City received an upfront payment of $4,000,000. As of February 27, 2015, if the Swap Agreement were to be terminated early, the City would be required to pay a termination payment to the Swap Provider in the approximate amount of $3,195,396. The Series 2005B Bonds associated with the Swap Agreement represent approximately 2.9% of the Water Department's outstanding debt. The termination date of the Swap Agreement is August 1, 2018. The City has no other swap agreements outstanding.

Other Obligations

Contract for Biosolids Treatment with Philadelphia Biosolids Services, LLC

In 2008, the City entered into a long-term contract and lease with the Philadelphia Municipal Authority (the "PMA") for the PMA to operate the Water Department's existing Biosolids Recycling Center (the "BRC"). The PMA and Philadelphia Biosolids Services, LLC ("PBS") entered into a Service Agreement (the "PBS Service Contract"), pursuant to which PBS designed and built, and currently operates, a facility at the BRC to dispose of biosolids captured during wastewater treatment. The PMA is required to make annual payments to PBS for operating the BRC. Pursuant to a Service Agreement between the PMA and the City (the "City Service Contract"), the City assumed all of PMA's obligations under the PBS Service Contract. The obligations under the City Service Contract constitute Operating Expenses of the Water Department. Fiscal Year 2013 was the first full year of operation of the BRC, and the City paid to PMA, from revenues generated from the Water Department, $21,275,441. In Fiscal Year 2014, the City paid, from revenues generated from the Water Department, $20,364,249 to PMA. The Water Department's payment obligation for Fiscal Year 2015 is budgeted to be $21,650,000. The Water Department's payment obligation for Fiscal Year 2016 is expected to be $22,170,000. The City Service Contract contains adjusters for the Consumer Price Index, Producer Price Index and fluctuations in diesel prices, among others; thus, expenditures under the City Service Contract may vary over time. The contract expires on October 13, 2028, and contains the possibility of a five-year renewal term at the option of the Water Department. See "THE SYSTEM – Wastewater System – Environmental Compliance" for more information on biosolids treatment and utilization at the BRC.

Northeast Water Pollution Control Plant Cogeneration Facility

In 2011, the City entered into a long-term contract and lease with the PMA for the PMA to arrange the construction, financing, maintenance and sublease of a digester gas cogeneration facility at the Northeast Water Pollution Control Plant. The PMA entered into a lease (the "Lease") with BAL Green Biogas I, LLC, a special purpose entity of Bank of America (the "Lessor"), which requires the PMA to make certain lease payments to the Lessor. Pursuant to a sublease dated December 23, 2011 (the "Sublease"), the City assumed all of the PMA's obligations under the Lease. The obligations under this contract constitute Operating Expenses of the Water Department. During Fiscal Year 2013, no payments were made by the Water Department for this facility. In Fiscal Year 2014, the City paid to the Lessor from revenues generated from the Water Department, $3,773,819, including lease payments of $2,427,767, maintenance fees of $1,291,352, and legal, administrative, and other miscellaneous fees of $54,700. The Water Department's payment obligation for Fiscal Year 2015 is budgeted to be $4,707,000. The Water Department's payment obligation for Fiscal Year 2016 is expected to be $5,706,000. Expenditures, including maintenance fees, may vary during the term of the contract. The Sublease expires on September 25, 2029, unless renewed by PMA for an additional term of eighteen months.

Automatic Meter Reading

In 1997, the City, through the PMA, entered into a long-term contract with ITRON for the replacement of residential water meters with new meters equipped with radio transmitter devices and for services and materials required to implement, operate and maintain the Automatic Meter Reading System. Unless renewed, the contract terminates in 2017, and includes the option of two one-year renewal terms through 2019. The Water Department paid ITRON, through the PMA, $1,984,362 and $1,964,275 in Fiscal Years 2014 and 2013, respectively, for meter reading services. This obligation constitutes an Operating Expense of the Water Department. Additionally, the Water Department paid ITRON, through the PMA, $1,809,838 and $1,732,516 in Fiscal Year 2014 and 2013, respectively, for the purchase of new water meters. This obligation constitutes a capital expenditure of the Water Department. The Water Department's payment obligation to ITRON for Fiscal Year 2015 is budgeted to be $2,200,000 for meter reading services and $2,000,000 for the purchase of new water meters. The Water Department's payment obligation for Fiscal Year 2016 is expected to remain the same as Fiscal Year 2015.

Laurel Street Combined Sewer Overflow Project

In 2011, the City entered into an Amended and Restated Development and Tax and Claim Settlement Agreement (the "Sugarhouse Agreement") with Sugarhouse HSP Gaming, L.P. ("HSP"). In accordance with the Sugarhouse Agreement, HSP is required to fund the development and expansion of the Laurel Street Combined Sewer Overflow Project. As compensation for the development and expansion of the project, HSP has been allotted a five-year credit against real estate taxes and settlement payments otherwise due to the City. This credit is equal to 28 percent of the amount expended by HSP on the Laurel Street Combined Sewer Overflow Project. If the credit exceeds the amount of real estate taxes and settlement payments otherwise due to the City, the credit carries over to the following year. The Laurel Street Combined Sewer Overflow Project is a capital asset of the Water Department; thus, the Water Department is required to transfer to the General Fund of the City the amount of the credit. To the extent that the credit is attributable to the development and expansion of the project, which is an improvement of the System, the Water Department's obligation constitutes a capital expenditure. The Water Department's obligation is expected to be approximately $3.5 million per year from Fiscal Year 2014 through Fiscal Year 2018.

REMEDIES OF BONDHOLDERS

Remedies under the Act and the General Ordinance available to Bondholders and to any trustee for Bondholders appointed by the holders of 25% of the outstanding principal amount of any series of Water and Wastewater Revenue Bonds in default are described in APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS." In addition to the remedies therein described, Bondholders or a trustee therefor are entitled under the Pennsylvania Uniform Commercial Code to remedies as secured parties with respect to the Project Revenues and the funds on deposit in the Water and Wastewater Funds. See "INVESTMENT CONSIDERATIONS – Limited Recourse on Default."

Enforcement of Bondholders' rights may be limited by and is subject to the provisions of the Federal Bankruptcy Code, as now or hereafter enacted, and to other laws or legal or equitable principles which may affect the enforcement of creditors' rights. References to the Federal Bankruptcy Code should not be construed as implying that the City expects to resort to the provisions of such statute or that, if it did, any proposed restructuring would include a dilution of the sources of payment of and security for the Bonds. See "INVESTMENT CONSIDERATIONS – Bankruptcy" herein.

PLAN OF FINANCE

The City is issuing the 2015A Bonds in furtherance of the Water Department's Capital Improvement Program. The 2015A Bonds are being issued for the purpose of providing funds which, together with other available funds of the Water Department, will be used to finance a portion of the costs of (i) capital improvements to the Water and Wastewater System, (ii) a deposit to the Debt Reserve Account of the Sinking Fund and (iii) the costs of issuance relating to the 2015A Bonds. The City is issuing the 2015B Bonds to provide funds which, together with other available funds of the Water Department, will be used to finance a portion of the costs of (i) the refunding, on a current basis, of a portion of the 2005A Bonds and (ii) the costs of issuance relating to the 2015B Bonds.

A portion of the proceeds of the 2015B Bonds will be irrevocably deposited with the Fiscal Agent to be held in the Sinking Fund for redemption of the 2005A Bonds on July 1, 2015.

ESTIMATED SOURCES AND USES OF FUNDS

The following table sets forth estimated sources and uses of the proceeds of the Bonds.

Sources of Funds	**2015A Bonds**	**2015B Bonds**	**Total**
Principal Amount of the Bonds			$____________
Net Original Issue Premium/ Discount			____________
Total Sources of Funds			$____________
Uses of Funds			
Redemption of 2005A Bonds			$____________
Deposit to Project Fund			____________
Deposit to Debt Reserve Account			____________
Costs of Issuance*			____________
Total Uses of Funds			$____________

* Includes Underwriters' discount; legal, printing, rating agency, consultant, Fiscal Agent and financial advisor fees; and other expenses of the issuance and offering of the Bonds.

THE WATER DEPARTMENT

General

The Water Department was established by the City pursuant to the Charter with the power and duty to operate, maintain, repair and improve the Water and Wastewater Systems. The Charter requires that rates and charges for supplying water and for wastewater treatment service be fixed and regulated in accordance with standards established by City Council. Such standards must enable the City to realize from rates and charges an amount at least equal to operating expenses and debt service requirements on any debt incurred or to be incurred for the Water and Wastewater Systems, including general obligations and revenue bond obligations, and proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City. See "HISTORICAL AND PROJECTED FINANCIAL INFORMATION – Compliance with Rate Covenant" below. The Charter also authorizes the Water Department, with the approval of City Council, to enter into contracts for supplying water service and sewer and sewage disposal service to users outside the limits of the City.

The operations of the Water Department are accounted for in the Water Fund, which is an enterprise fund of the City. The Water Fund is an accounting convention established pursuant to the Charter for the purpose of accounting for the assets, liabilities, revenues, expenses and Rate Covenant compliance for the Water and Wastewater Systems. See APPENDIX I – "FINANCIAL STATEMENTS OF THE WATER FUND DERIVED FROM THE CAFR FOR FISCAL YEAR ENDED JUNE 30, 2014" attached hereto.

Administration

The Water Department is managed by a Commissioner appointed by the Managing Director of the City with the approval of the Mayor. The Commissioner then appoints deputies with the approval of the City's Managing Director. Substantially all other employees of the Water Department are appointed under the City's Civil Service Regulations.

Under the Charter, the City's Department of Revenue performs all functions relating to meter reading, customer accounts and collections for the Water Department through the Water Revenue Bureau. The Department of Revenue and the Water Revenue Bureau are under the direction of the Director of Finance. The Director of Finance, as the chief financial, accounting and budget officer of the City, has overall responsibility for the fiscal administration of all City departments, including the Water Department. Audits of all City departments, including the Water Department, are performed annually by the Office of the City Controller. The Law Department of the City, headed by the City Solicitor, handles all legal matters affecting the Water Department.

The following are brief biographical descriptions of the Commissioner, his deputies and the senior management of the Water Department:

Howard M. Neukrug, P.E. was appointed Water Commissioner in February, 2011. He has served the Water Department for 36 years in various capacities, including Deputy Commissioner of Planning and Environmental Services; Director, Office of Watersheds; and Director, Planning and Technical Services. He is a recognized national leader in the United States water industry and has specific expertise in utility management; water quality – regulations and policy; infrastructure renewal, replacement and resiliency; and long-term capital and system planning. Mr. Neukrug has served on numerous national, state and local boards and advisory councils. He is a Professional Engineer, with a degree in Civil and Urban Engineering from the University of Pennsylvania, where he currently teaches.

Mami Hara, AICP, ASLA was appointed Deputy Commissioner/Chief of Staff of the Philadelphia Water Department in April, 2012. Previously, Ms. Hara was a leader of a national private practice in urban planning and urban design for 24 years. She specialized in large scale civic projects, green infrastructure and sustainability plans, and water corridor planning around the U.S. and abroad. She has been an instructor in planning and design at the University of Pennsylvania and Temple University and an advisor to the Urban Land Institute, the Sustainable Cities Design Academy, U.S. Green Building Council, The Conservation Fund and the Mayors' Institute on City Design. She is a certified planner, with a B.A. in Design of the Environment from the University of Pennsylvania and a Masters in Landscape Architecture from Harvard University.

Debra A. McCarty was appointed Deputy Water Commissioner in April, 2004. She is principally responsible for managing the Water Department's Operations Division. She received a Bachelor of Engineering Sciences in Environmental Engineering from Johns Hopkins University. After serving in a private engineering firm for several years, she began her employment with the Water Department in 1982. Since her initial appointment, Ms. McCarty has held a number of increasingly responsible engineering and managerial positions, such as holding the position of Chief of Wastewater, which included responsibility for the operation of the City's three largest wastewater treatment plants. She also served as plant manager of the Southwest Water Pollution Control Plant and Process Manager for the Northeast Water Pollution Control Plant.

David A. Katz was appointed Deputy Water Commissioner in June, 2001, managing the Water Department's environmental compliance efforts. Previously, Mr. Katz had served as Divisional Deputy City Solicitor. He has been with the City's Law Department since 1987 and has served as the General Counsel to the Water Department since April, 1992. He holds a B.S. in Economics from the Wharton School, University of Pennsylvania and a J.D. from the Washington College of Law, American University. Prior to joining the Law Department, Mr. Katz served in a variety of public and private legal positions.

Christopher Crockett was appointed Deputy Water Commissioner in February, 2011, managing the Water Department's Planning and Environmental Services efforts. Since 2007, he had served as head of the Water Department's Planning and Research Unit. He has held a number of increasingly responsible positions since joining the Water Department in 1995, primarily in research, planning, regulatory compliance, and laboratory services, and has become a nationally-known expert on many aspects of the water and stormwater industries. He holds a bachelor's degree in Civil Engineering, a Masters in Environmental Engineering, and a Doctorate in Environmental Engineering from Drexel University and is Registered Professional Engineer in Pennsylvania.

Scott J. Schwarz was appointed as Divisional Deputy City Solicitor and General Counsel to the Philadelphia Water Department in March, 2013. He joined the City's Law Department in 2009, serving as a Senior Attorney in the Law Department's Regulatory Affairs Unit. Prior to that, he spent over 25 years working in the environmental law divisions of law firms in Philadelphia and Washington, D.C. and gained government experience working for the State of Alabama's Office of the Attorney General and the U.S. Environmental Protection Agency. Mr. Schwarz received a B.S. in biology from Bucknell University and a J.D. from George Washington University.

Gerald D. Leatherman was appointed Deputy Water Commissioner for Human Resources & Administration in April, 2013. Since March 2008, Mr. Leatherman was Divisional Deputy City Solicitor and General Counsel to the Water Department. He joined the City's Law Department in 2003, serving as a Deputy City Solicitor in the Housing Code Enforcement and Neighborhood Transformation Divisions. Prior to that, Mr. Leatherman worked in the General Counsel's Office of the Philadelphia Housing Development Corporation and in private practice. Mr. Leatherman received a B.A. from American University and a J.D. from the Temple University Beasley School of Law.

Joanne Dahme was appointed General Manager of the Public Affairs Division in January, 2009. She holds a B.C.E. degree in Civil Engineering from Villanova University and an M.J. in Journalism and a Masters in Creative Writing, both from Temple University. Ms. Dahme joined the Water Department in 1980 and served as the Manager of the Public Affairs Division from 1994 to 1999. She later served as a Watersheds Programs Manager for the Water Department's Office of Watersheds until returning to assume her current position in Public Affairs. She currently serves on the board of the Delaware Estuary Program in addition to several regional watershed planning committees.

Melissa LaBuda was appointed Deputy Commissioner in August, 2014 and Assistant Deputy Commissioner in October, 2013. Melissa has overall responsibility for the Water Department's financial management including: accounting operations and financial reporting; budget formulation and execution; and financial planning. Ms. LaBuda joined the Water Department from a global financial institution where she was an investment banker to Public Power and Combined Utility systems. Previously, Ms. LaBuda worked for Public Financial Management, Inc. as both a financial advisor and a fixed income trader. In these roles, Ms. LaBuda has raised in excess of $25 billion in the capital markets. Melissa received her B.S. from Bloomsburg University in 1995.

James George was appointed Assistant Deputy Commissioner in October 2013. He has 27 years of experience in the areas of budgeting, accounting, cash management, contract management and information systems. Prior to joining the Water Department, Mr. George was appointed as Assistant Director – Management and Budget Department for Wayne County, Pennsylvania for five years. From 1987 to 2005 Mr. George worked for the City of Detroit in various capacities, including as Assistant Director – Financial Services and as Financial Manager for Detroit Water and Sewerage Department. He holds a Bachelor of Arts in Accounting from Kerala University, India and a Master of Commerce in Accounting from Himachal Pradesh University, India.

Stephen J. Furtek was appointed General Manager of Planning and Engineering (now Engineering and Construction) in March, 2005. Mr. Furtek is a registered Professional Engineer and holds a B.S. in Civil and Urban Engineering from the University of Pennsylvania. He has held a number of increasingly responsible positions since joining the Water Department in 1982, including Supervisor of the Water and Sewer Design Section and Manager of the Design Branch.

Geoffrey L. Brock was appointed Water IT Director in May, 2012. He is responsible for directing Information Sciences and Technology services for the Water Department. Prior to this position, Mr. Brock had been Director of the Bureau of Laboratory Services for 27 years. In addition to these responsibilities, Mr. Brock served as Director of a federally funded Contamination Warning System Demonstration Pilot, a multi-year, $12,000,000 project developed to prevent, detect and respond to threats to the drinking water supply and serves as a model for water utilities across the United States. Mr. Brock holds a B.S. in Civil and Environmental Engineering from Cornell University.

Michelle L. Bethel was appointed Deputy Revenue Commissioner in charge of the Water Revenue Bureau in July, 2008. She holds a B.S. in Accounting with a Minor in Public Relations from Kutztown University and an M.B.A. in Human Resource Management from the University of Phoenix. Prior to her appointment as Deputy Revenue Commissioner, Ms. Bethel worked for the Commonwealth of Pennsylvania

Department of Revenue in Harrisburg for 14 years. Ms. Bethel has extensive knowledge of and experience with customer service, collections, and compliance issues gained through working in increasingly responsible management positions.

Personnel Information

As of December 31, 2014, the Water Department employed approximately 1,947 permanent employees, of whom 1,430 are represented by District Council 33 and 299 by District Council 47, both of the American Federation of State, County and Municipal Employees. The balance (218 permanent employees) represents the Water Department's upper management, supervisory and senior engineering and administrative personnel who are not eligible for union membership. The wages and salaries of approximately 232 employees in the Water Revenue Bureau are funded by the Water Department. Union representation in the Water Revenue Bureau parallels that of the Water Department. The City recently entered into new collective bargaining agreements with District Councils 33 and 47, and the Water Department has accounted for its corresponding financial obligations under the terms of these new labor agreements in its budget. For a summary of the terms of such labor agreements, see APPENDIX IV – "GOVERNMENT AND FINANCIAL INFORMATION – Expenditures of the City – Overview of Current Labor Situation."

Pension Obligations of the Water Department

The City maintains a single employer defined-benefit pension program (the "Municipal Pension Plan"), which provides benefits to police officers, firefighters, non-uniformed employees, and non-represented appointed and elected officials, including employees of the Water Department. Contributions are made by the City to the Municipal Pension Fund from (i) the City's General Fund, (ii) funds that are received by the City from the Commonwealth for deposit into the Municipal Pension Fund, and (iii) various City inter-fund transfers, representing amounts contributed, or reimbursed, to the City's General Fund for pensions from the Water Fund, Aviation Fund, and certain other City funds or agencies. For a more complete discussion of the City's Pension System, see APPENDIX IV – GOVERNMENT AND FINANCIAL INFORMATION - "Pension System."

For Fiscal Years 2012, 2013 and 2014, payments from the Water Fund to the City's General Fund for the Municipal Pension Fund were $48,613,215, $55,959,398, and $60,755,454, respectively. The Water Department has budgeted for a payment from the Water Fund to the City's General Fund for the Municipal Pension Fund of $53,700,000 for Fiscal Year 2015.

Relationship to the City

The Water Department is one of the City's ten operating departments. As such, the Water Department reports to the Office of the Managing Director. The Water Department relies on other City departments and agencies for support of its operations. Eight departments receive a direct appropriation ("interdepartmental direct obligations") from the Water Department's operating budget at the beginning of each fiscal year to fund the support services to be rendered to the Water Department in such fiscal year. The eight departments are: the Revenue Department (Water Revenue Bureau) for meter reading, billing and collection services; the Law Department for legal services; the Department of Public Property for the rental of office space and parking; the Office of Fleet Management for vehicle acquisition, fuel, and vehicle maintenance; the Office of Innovation and Technology for communications and computer support services; the Procurement Department for services related to the acquisition of goods and services; the Office of the Director of Finance for fringe benefits, indemnities and support services; and the Sinking Fund Commission for the payment of debt service.

Approximately 15 City departments and agencies, including the Revenue Department and the Department of Public Property, provide additional services to the Water Department during the year for which the Water Department pays them at the close of each fiscal year ("Interfund Charges"). Total Interfund Charges to the Water Department for the services provided by these departments totaled $7,714,419 for Fiscal Year 2014, $10,792,914 for Fiscal Year 2013, and $9,074,727 for Fiscal Year 2012. These services include purchasing of services, supplies and equipment by the Procurement Department; certain communication services by Office of Innovation and Technology; street repairs by the Streets Department; disbursements and cash management by the Director of Finance; auditing services by the Office of the City Controller; debt management services by the Office of the City Treasurer; testing and hiring services from the Office of Human Resources and Labor Relations unit and other support services provided by the Managing Director's Office, Civil Service Commission, Department of Licenses & Inspections, and the Police Department.

The City is the Water Department's largest customer. (See Table 3 – Top 10 Retail Customers for Fiscal Year Ending June 30, 2014.) For Fiscal Year 2014, the City paid $29,209,108 from its General Fund and $3,712,191 from the Aviation Fund, for total interfund transfers to the Water Department of $32,921,294. Water, sewer, stormwater, fire connection and ground water charges (collectively referred to as, "Standard Services") totaled $23,394,458. Other services provided by the Water Department, including standard pressure fire hydrants, inlet cleaning and snow removal (collectively referred to as, "Other Services") totaled $9,526,836 for Fiscal Year 2014. For Fiscal Year 2013, the City paid $29,207,732 from its General Fund and $3,125,300 from the Aviation Fund, for total interfund transfers to the Water Department of $32,333,032. Charges totaled $23,524,413 and $8,808,619 for Standard Services and Other Services, respectively, for Fiscal Year 2013. For Fiscal Year 2012, the City paid $25,994,297 from its General Fund and $2,282,880 from the Aviation Fund, for total interfund transfers to the Water Department of $28,277,177. Charges totaled $20,173,350 and $8,103,827 for Standard Services and Other Services, respectively, for Fiscal Year 2012. The Fiscal Year 2015 budget includes an estimate of $29,866,349 for charges to the City's General Fund and an additional $3,897,481 for charges to the City's Aviation Fund, for a total estimated interfund transfers to the Water Department of $33,763,830. Such payments are credited to the Water Fund for each Fiscal Year as of the last day of such Fiscal Year; and payment occurs on or before October 31 in the same calendar year. See APPENDIX IV – "GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA."

THE SYSTEM

The Water Department provides water, wastewater and stormwater services to the City and certain municipalities in the Philadelphia metropolitan area. The Water Department's service area for wastewater service and treatment is larger than its service area for water services and includes the City and certain municipalities in the Philadelphia metropolitan area. The following sections describe the largest customers of the Water Department, the Water Department's wholesale contracts and the Water and Wastewater Systems, including certain environmental matters corresponding to each.

The City and Other Large Customers

The City is the largest customer of the Water Department. In addition to charges for general service customers, which are based on metered water consumption, the Water Department charges the City for water and wastewater services provided to City properties and for operation and maintenance of the fire system (consisting of hydrants and pumping stations).

The ten largest customers of the Water Department for water, wastewater and stormwater services for Fiscal Year 2014 are set forth in the table below. The Water Department does not charge itself or include in revenue the retail value of the water, sewer and stormwater services used by the Water Department.

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Table 3
Top 10 Retail Customers
Fiscal Year Ending June 30, 2014

	Customer	Billing ($)	% Total Billings	Consumption (ccf)	% Total Consumption
1	CITY OF PHILADELPHIA*	$23,394,457.95	3.73%	2,162,437	3.01%
2	PHILADELPHIA HOUSING AUTHORITY	12,057,791.00	1.92%	1,662,824	2.31%
3	PHILADELPHIA SCHOOL DISTRICT	6,134,544.00	0.98%	546,777	0.76%
4	VEOLIA ENERGY PHILADELPHIA	5,770,029.00	0.92%	1,189,253	1.66%
5	UNIVERSITY OF PENNSYLVANIA	4,336,676.00	0.69%	818,803	1.14%
6	FEDERAL GOVERNMENT	4,039,235.00	0.64%	366,470	0.51%
7	HONEYWELL RESIN & CHEMICALS LLC	3,551,780.00	0.57%	2,238,629	3.12%
8	TEMPLE UNIVERSITY	2,689,143.00	0.43%	525,019	0.73%
9	PAPERWORKS INDUSTRIES INC	2,358,277.00	0.38%	1,318,240	1.84%
10	UNIV. OF PA. HEALTH SYSTEM	2,099,849.00	0.33%	461,883	0.64%
	TOTAL	$66,431,781.95	10.59%	11,290,335	15.72%
	Total Overall Billing/Consumption	$627,033,728.00	100%	71,828,877	100%

*The total above for the City of Philadelphia includes the following charges for Standard Services only: (i) $16,162,777.04 – General Fund; (ii) $3,711,886.43 – Aviation Fund; (iii) $1,742,215.51 – Philadelphia Zoo; and (iv) $1,777,578.97 – Ground Water. Charges for Other Services totaled $9,526,836. In Fiscal Year 2014, the City paid the Water Department a total of $32,921,294 for Standard Services and Other Services.

The table on the following page presents revenues as of June 30, 2014 and describes certain terms of the Water Department's wholesale contracts for water and wastewater services as of December 31, 2014. The last column sets forth each wholesale customer's proportional share of the Water Department's Combined Sewer Overflow Long Term Control Plan ("LTCP") expenditures under its consent order and agreement ("COA LTCP Expenditures") with the PaDEP (defined below). The revenues, as reported below, are as of June 30, 2014.

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Table 4
Wholesale Water and Wastewater Customer Revenues and Contract Terms
Fiscal Year Ending June 30, 2014

	O&M	Capital	Total	Original Contract Start Date	Contract End Date	COA LTCP Cost (%)
Wastewater						
Delcora[1]	$ 7,680,973	-	$ 7,680,973	03/04/1974	04/1/2028	9.44%
Bucks County Water & Sewer Authority (BCWSA)	6,690,793	$ 105,000	6,795,793	02/08/1971	3/31/2038	N/A
Upper Darby Township	2,914,748	144,774	3,059,522	01/10/1957	8/08/2023	N/A
Lower Southampton Township	2,040,003	828,589	2,868,592	02/18/1957	6/30/2024	N/A
Cheltenham Township	1,807,829	1,071,000	2,878,829	11/20/1923	6/30/2025	2.43%
Lower Merion Township	2,455,957	138,762	2,594,719	09/02/1903	N/A	N/A
Springfield Township Erdenheim	1,500,437	551,000	2,051,436	08/05/1931	6/30/2023	7.79%
Springfield Township Wyndmoor	145,047	116,000	261,047	08/05/1931	6/30/2023	N/A[2]
BCWSA (for Bensalem)[3]	1,434,476	126,168	1,560,644	01/03/1955	6/30/2023	N/A
Abington Township	610,428	469,000	1,079,428	12/09/1958	6/30/2023	0.58%
Lower Moreland Township	492,027	236,000	728,027	06/12/1967	3/31/2017	N/A
Total	**$27,772,718**	**$3,786,293**	**$31,559,011**	-	-	**13.25%**
Water						
Bucks County Water & Sewer Authority[4]	$ 5,055,771	$2,812,000	$7,867,771	03/15/1966	6/30/2014	N/A
Aqua Pennsylvania, Inc.	2,581,031	1,088,000	3,669,031	06/29/2000	3/01/2026	N/A
Total	**$ 7,636,802**	**$3,900,000**	**$11,536,802**	-	-	-
Total Wholesale Revenues	**$35,409,520**	**$7,686,293**	**$43,095,813**	-	-	-

Note: All customers other than Bensalem, Lower Merion, and Upper Darby have capital charges included in their operation and maintenance bills.

[1]Delcora allocated Capital based on assets in service after 7/4/11.
[2]The total amount of COA LTCP Expenditures covered by the Springfield-Wyndmoor contract is reflected in the Springfield Erdenheim amount.
[3]Bucks County Water and Sewer Authority maintains and operates the Bensalem Township Sewer System.
[4]BCWSA terminated their wholesale water contract on 6/30/2014.

The Water System

The Water System's service area includes the City and several municipalities in the Philadelphia metropolitan area. Based on the 2013 U.S. Census Bureau estimate, the Water System served approximately 1,610,165 individuals, of which 1,553,165 live in the City and approximately 57,000 live in Montgomery and Delaware Counties.

As of June 30 2014, the Water System served approximately 475,000 active retail customer accounts using 3,028 miles of mains and 25,321 fire hydrants. As of June 30, 2014, approximately 53,000 water and/or wastewater accounts were in non-service status for a variety of reasons but largely because of non-payment.

The City obtains approximately 58% of its water from the Delaware River and the balance from the Schuylkill River. The City is authorized by the Pennsylvania Department of Environmental Protection (the "PaDEP") to withdraw up to 423 million gallons per day ("MGD") from the Delaware River and up to 258 MGD from the Schuylkill River. The Water Department and PaDEP are in the process of renewing the Water Department's water allocation permits. Once the permits are renewed, the Water Department will begin discussions with the Delaware River Basin Commission to ratify it.

Water treatment is provided by the Samuel S. Baxter Water Treatment Plant on the Delaware River and by the Belmont and Queen Lane Water Treatment Plants on the Schuylkill River. The combined rated treatment capacity of these plants under the Water Department's Partnership for Safe Water procedures is 546 MGD, and their combined maximum treatment capacity is 680 MGD. The storage capacity for treated and untreated water in the combined plant and distribution system totals 1,065.5 million gallons ("MG"). In Fiscal Year 2014, the Water System distributed 90,213 MG of water at an average daily rate of 239.5 MGD. In Fiscal Year 2014, the maximum water production experienced by the Water System in one day was 295.5 MG.

The following sections include a discussion of recent developments regarding certain infrastructure of the Water System relating to the Baxter Plant, a description of wholesale contracts for water service and an overview of environmental matters respecting the Water System.

Baxter Water Treatment Plant Clear Well

In May 2010, the Water Department discovered a failed 4-foot by 6-foot section in the vegetated roof cover of the clear water basin ("CWB") at the Baxter Plant. The CWB contains 50 million gallons of finished water from the Baxter Plant and supplies the Lardner's Point Pump Station. The Water Department temporarily repaired and covered the breach and continuously monitors water quality at the influent and effluent of the CWB. No adverse effects have been observed and access to the failed roof area has been closed-off to prevent further damage to the basin in operation.

The Water Department has completed a thorough underwater inspection and condition assessment of the basin, the outlet chamber and the influent valves. Structural improvements were made to the CWB outlet structure and stoplog chamber and new aluminum stoplog panels were constructed, installed and tested in January and March 2012. The successful test of the stoplog panels and operation of the influent valves confirmed the Water Department's capability to isolate the CWB in case of an emergency. The Water Department has sufficient storage upstream of the CWB and a permanent by-pass conduit as a viable emergency alternative to the CWB.

The Water Department also repaired, re-commissioned and demonstrated the "A-stage" pumps at Lardner's Point Pump Station that would be required to be put into service in the event of a CWB outage. The Water Department will replace the CWB with four 5MG basins and associated piping. This project will be completed in two phases. The first phase is to install two 5MG basins (10MG of total storage) and is estimated to cost approximately $75 million. This first phase is expected to be bid for construction in calendar year 2015. The second phase is not expected to start until the next six year capital plan for Fiscal Years 2022-2027.

Wholesale Contracts

The Water Department has a wholesale contract for water services with Aqua Pennsylvania, Inc. ("AP") under which the Water Department has agreed to provide wholesale water service through March 1, 2026. Sales to AP generated total annual revenues of $3,669,031 in Fiscal Year 2014, $3,496,946 in Fiscal Year 2013 and $3,797,974 in Fiscal Year 2012. The agreement provides for service through two interconnections – one in Tinicum Township, Delaware County and another in Cheltenham Township, Montgomery County. The Tinicum interconnection allows for an average daily draw of 3.705 MGD and maximum daily demand of 7.0 MGD. The Cheltenham interconnection allows for an average daily draw of 2.0 MGD and a maximum daily demand of 2.5 MGD.

Environmental Compliance

Drinking Water Regulatory Achievements

The water provided by the Water System meets all physical, chemical, radiological and bacteriological water quality standards established by the United States Environmental Protection Agency (the "EPA") under the Safe Drinking Water Act and by the PaDEP. The Water Department is aware of recent proposed and planned state and federal regulations relating to drinking water quality and has completed research and monitoring efforts with respect to the content and status of these regulations so that it will be able to comply with such regulations when adopted.

The Water Department continues to prepare for possible future regulations regarding the distribution system. The Water Department has a district metered zone, uses online water quality monitors at reservoirs, pump stations and other distribution system locations, and Water System hydraulic monitoring and modeling. All of these tools allow the Load Control Center to research and track water through the Water System. The Water Department is actively involved in monitoring, commenting on, and implementing practices to respond to rules and regulations for distribution systems enacted by the PaDEP and the EPA.

Full implementation of the EPA's Stage 2 Disinfection and Disinfection Byproducts Rule ("Stage 2 D/DBPR") began in April 2012 with reporting to the PaDEP as the primary agency. The Water Department, through previous treatment changes made over the last decade to reduce disinfection byproduct production, is in full compliance with the rule requirements. All three water treatment facilities - Baxter, Queen Lane and Belmont - are operating the enhanced coagulation process to achieve the total organic carbon removal goals. The Water Department is in full compliance with Stage 2 D/DBPR for all 16 monitoring locations as determined by the Initial Distribution System Evaluation Report, which report was approved by the PaDEP.

Also in April 2012, the EPA's Long Term Stage 2 Enhanced Surface Water Treatment Rule ("LT2ESWTR") was fully implemented. The Water Department, through previous treatment changes, is in full compliance with requirements of the rule for all three facilities. Queen Lane is the only one of the three facilities designated as a Bin 2 facility and subject to stricter turbidity removal goals necessary to meet the *Cryptosporidium* removal credit requirements. Queen Lane has complied with these requirements consistently over the past six years including 2014. A second round of regulatory monitoring for *Cryptosporidium* will begin April 2015 for a two year sampling period. The Water Department's Bureau of Laboratory Services ("BLS") will maintain a PaDEP-accredited lab and has contracted for the use of selected private laboratories to perform the testing and reporting required.

The EPA's third Unregulated Contaminant Monitoring Regulation ("UCMR-3") was published in May, 2012. Every five years, the EPA is required to collect national occurrence data for unregulated contaminants from a list of up to 30 unregulated contaminants. Previously, the Water Department complied with UCMRs 1 & 2. BLS began UCMR-3 monitoring in May 2013, and collected quarterly samples for one year. Drinking water samples were collected and analyzed for 27 chemical contaminants. In compliance with the regulation, the BLS reviewed and reported all results to the EPA during 2014. The results were published in the Water Department's annual Consumer Confidence Report for 2013 and will again be reported for 2014.

Lead and Copper Rule Compliance History

Pursuant to the Federal Safe Drinking Water Act, as amended (the "Clean Water Act"), the Water Department is required to conduct Lead and Copper Rule ("LCR") monitoring every three years. Compliance monitoring in 2014 demonstrated that the Water Department continues to be in compliance with the LCR and has been since 1992. The next sampling period for the LCR is June to September 2017.

Clean Streams Law

The Water System is subject to environmental laws and regulations, and from time to time, receives notices of violations of such environmental laws and regulations. On August 7, 2013, the PaDEP notified the Water Department of an alleged violation of regulations issued under the Clean Streams Law as a result of the Water Department's failure to immediately notify the PaDEP of a release of chlorinated water from a water storage tank. In response to the notice, the Water Department provided the PaDEP with information on the procedures taken to ensure the prevention of a similar occurrence in the future.

The Wastewater System

The Wastewater System's service area is larger than the Water System's and includes the City and several municipalities in the Philadelphia metropolitan area. Based on the 2013 U.S. Census Bureau estimate, the Wastewater System served approximately 2,303,165 individuals, 1,553,165 of which are City residents. The remaining 750,000 live in Delaware, Bucks and Montgomery Counties.

As of June 30 2014, the Wastewater System served approximately 530,000 retail customer accounts, including approximately 50,000 stormwater-only accounts, which were created as a result of a change in the way the Water Department bills for stormwater (see – "Stormwater Management – Rates and Services" below), and ten wholesale contracts with neighboring municipalities and authorities.

The Wastewater System consists of three water pollution control plants ("WPCPs"), 19 pumping stations, approximately 3,716 miles of sewers, and a privately managed centralized biosolids handling facility. It includes 1,855 miles of combined sewers, 762 miles of sanitary sewers, 737 miles of stormwater sewers, 13 miles of force mains (sanitary and storm) and 349 miles of appurtenant piping. The three WPCPs processed a combined average of 432 MGD of wastewater in Fiscal Year 2014, have a 522 MGD combined average daily design capacity and a peak capacity of 1,059 MGD.

The following sections include a discussion of wastewater regulation and permits, descriptions of stormwater management services and wholesale contracts for wastewater service and treatment and an overview of environmental matters respecting the Wastewater System.

Wastewater Regulation and Permits

The Clean Water Act requires cities, like Philadelphia, whose separate storm sewer systems serve a population of over 100,000 to obtain a permit from the National Pollutant Discharge Elimination System ("NPDES") for their discharges. The EPA has delegated the NPDES program for the Commonwealth to the PaDEP. In addition to the Clean Water Act, the City and its WPCPs also are subject to regulation by the PaDEP, which exercises regulatory authority over municipal sewage treatment operations, and by the Delaware River Basin Commission ("DRBC"), which exercises regulatory authority over withdrawals from and discharges into the Delaware and Schuylkill Rivers. The City's NPDES permit requires reduction of pollution from (1) commercial and residential areas; (2) illicit connections; (3) industrial facilities; and (4) construction sites.

Current NPDES permits for the Northeast, Southeast and Southwest WPCPs expired on August 31, 2012. The facilities are operating under an extension of the expired permits, as dictated by the policies of the PaDEP. The expired NPDES permits will remain in place until new permits are issued. Applications for renewals were submitted to the PaDEP, as required, in February 2012. Negotiations to renew the permits are ongoing. See APPENDIX II - "CONSULTING ENGINEER'S REPORT" contained herein. The NPDES permits grant the City flexibility in the treatment of combined sewer overflows (“CSO”). The PaDEP requires the Water Department to update its LTCP and Capital Improvement Program to provide for additional projects to reduce CSO frequency and volume. See “THE SYSTEM – The Wastewater System – Environmental Compliance – Combined Sewer Overflow Program” and “MANAGEMENT INITIATIVES - Water Department’s Long Term Combined Sewer Overflow Program – Green City, Clean Waters Program” herein.

In 2014, the Water Department’s three WPCPs were selected to receive Awards from the National Association of Clean Water Agencies (“NACWA”). NACWA’s Peak Performance Awards Program recognizes member agency facilities for excellence in wastewater treatment as measured by their compliance with NPDES permits. The Northeast and Southeast WPCPs received Platinum Awards. Platinum Awards pay special tribute to member agency facilities that have been awarded 5 or more consecutive Gold Awards, which recognize 100% compliance for the calendar year. The Northeast and Southeast WPCPs have achieved 100% compliance for years 9 and 14, respectively. The Southwest Plant received a Gold Award for 100% compliance in 2011, 2012 and 2013.

Stormwater Management

Stormwater Regulation and Permits

The Water Department’s Municipal Separate Storm Sewer (MS4) NPDES Permit (No. PA0054712) was issued in 2005 and expired in 2010. As required under PaDEP regulations, the Water Department submitted an application for renewal to the PaDEP on March 29, 2010. Currently, the Water Department is in negotiations with the PaDEP to determine the final permit requirements. The Water Department most recently submitted a draft permit to the PADEP on October 31, 2014 and is awaiting the PaDEP’s response.

Rates and Services

The Water Department delivers many of the City’s stormwater management services, including maintenance of the City’s 737 miles of separate storm sewers, 1,855 miles of combined sewers and approximately 71,962 stormwater inlets. In recent years, changes in work practices and investment in new equipment have enabled the Water Department to steadily increase the number of inlets cleaned annually. In Fiscal Year 2014, the Water Department cleaned 94,653 inlets, removing over 9,058 tons of debris. In addition, the Waterways Restoration team and the Water Department’s skimmer vessel removed a total of 710 tons of debris and 11 tons of debris, respectively.

Costs for stormwater management have been steadily and significantly increasing. As the City’s stormwater management costs increase, it becomes more important to recover expenditures on a basis that is fair and reasonable to all properties that place a demand on the Wastewater System. For many years, the Water Department recovered the costs of operation and maintenance of its stormwater system components (pipes, storm drains, pump stations, treatment facilities, and billing) through a service charge related to customers’ water meter size. Starting with residential properties in 2002, the Water Department began changing the way it assesses stormwater charges by moving to an area-based system, rather than a meter-based system, consistent with the prior recommendation of the 1996 Citizens’ Advisory Committee (“CAC”). This area-based approach, which calculates a customer’s stormwater charge based on the property’s gross and impervious area, was applied to non-residential and condominium properties starting in 2010. The residential monthly charge is currently based on the average gross area and impervious square footage of all residential parcels. All non-residential and condominium properties have fully transitioned from a meter based charge to a charge based on the property’s specific gross and impervious area.

Special rates are established pursuant to the Water Department’s regulations for the following customers: (1) public and private schools which provide instruction up to or below the twelfth grade (excluding separate or adjoining facilities or structures not used exclusively for educational or instructional purposes); (2) institutions of “purely public charity” (except universities and colleges and excluding any separate or adjoining facilities or structures not used exclusively for the principal purpose of the charity); (3) places used for religious worship; (4) residences of eligible senior citizens; (5) universities and colleges (excluding any separate or adjoining facilities or structures not used exclusively for educational or instructional purposes); and (6) public housing properties of the Philadelphia Housing Authority. Some real estate is also exempt from stormwater charges, including, cemeteries, portions of Fairmount Park, streets, medians, sidewalks, and rights-of-way. For Fiscal Years 2013 and 2014, the cost of the above described programs was approximately $20 million and $21 million, respectively. The projected cost for Fiscal Year 2015 is expected to be approximately $22 million.

The Water Department also offers several financial assistance and incentive programs to its stormwater customers, which constitute Operating Expenses of the Water Department or contra expenses in the form of credits or reductions to stormwater charges. For example, the Greened Acres Retrofit Program awards grants to property owners that meet selective criteria, including the ability to green an acre at a cheaper price than it would cost the Water Department. A list of the programs the Water Department offers and their corresponding cost for each Fiscal Year are set forth on the following page.

Table 5
Stormwater Incentives and Assistance Programs

Program	FY12	FY13	FY14	FY15*
Residential Green Practices Rebate Program	$ 72,483	$ 298,103	$ 416,472	$ 780,000
Stormwater Management Incentives Program Loan	-	-	-	2,653
SMIP and GARP**	3,355,804	4,868,854	4,462,906	10,250,000
Stormwater Design Assistance	535,065	461,426	499,991	500,000
Stormwater Assistance Phase in Program (CAP)	1,147,075	2,387,524	4,615,646	4,200,000
Stream and Backyard Buffer Program	78,666	14,883	43,052	130,000
Rebuilding Together Philadelphia Green Practices on Low Income Homes	42,581	37,867	37,745	100,000
Residential Rain Barrels	98,488	108,022	126,433	170,000
Residential Stormwater Practices Innovative Design	29,895	47,599	65,000	100,000
Stormwater Credits	4,141,492	6,429,142	10,372,319	12,000,000
Total	**$9,501,549**	**$14,653,420**	**$20,640,564**	**$28,230,000**

* Estimated or budgeted dollar amounts for Fiscal Year 2015 programs
** Stormwater Management Incentives Program Grant and Greened Acres Retrofit Program

Wholesale Contracts

Contracts for wastewater treatment service with ten neighboring municipalities and authorities provide for billing of charges based on operating costs attributable to the volume and strength of the wastewater received from each of these customers. Capital costs for wholesale wastewater customers are recovered by one of two different methods. Four contract customers are billed monthly for depreciation and return on investment on allocated wastewater conveyance and treatment facilities. Three contracting entities have made, and continue to make, capital contributions to the Water Department for their allocated share of the investment in facilities related to the provision of services to these customers. The remaining three wholesale customers previously made capital contributions, but have converted to payments based on depreciation and return on investment for all future capital investments. Revenues for Fiscal Year 2013 were $29,424,335 and revenues for Fiscal Year 2014 were $31,559,011. Total capital contributions from wholesale wastewater customers as of June 30, 2014 were $3,786,293. For Wholesale customer revenues for Fiscal Year 2014, see "THE SYSTEM – Wholesale Water and Wastewater Customer Revenues Fiscal Year Ending June 30, 2014."

The Water Department proposes to effect certain changes to the existing long-term wholesale contracts presented in Table 4 – Wholesale Water and Wastewater Customer Revenues and Contract Terms Fiscal Year Ending June 30, 2014. Such changes include extending the terms of the various contracts, increasing management fees from 10% to 12%, and requiring all wholesale wastewater customers to assume their respective proportionate share of COA LTCP Expenditures. As demonstrated in Table 4, four wholesale wastewater contracts charge wholesale customers for their respective share of COA LTCP Expenditures. The Water Department is working with Lower Moreland currently to renew and revise the terms of its wholesale wastewater contract.

Environmental Compliance

Combined Sewer Overflow Program

The present NPDES permits require the Water Department to implement a program to manage combined sewer overflows. In older sections of the City, both wastewater and stormwater are conveyed in one pipe to the sewage treatment plant. This is known as a combined system. During certain rain events, the additional stormwater produced exceeds the capacity of the collection system and/or wastewater treatment plant and causes an overflow. The excess stormwater/wastewater mix known as "combined sewer overflow" or "CSO" discharges directly into local waterways. The Water Department has 164 CSO points in its collection system.

Since 1997, the Water Department has been committed to restoring the region's waterways to fishable, swimmable and beautiful rivers and streams that are life-sustaining and are an amenity to nearby communities. The PaDEP and the Water Department signed a consent order and agreement on June 1, 2011 (the "COA") that allowed the Water Department officially to embark on the implementation of its landmark strategy known as the Green City, Clean Waters Program. Pursuant to the Green City, Clean Waters Program, the Water Department will spend approximately $2.4 billion over 25 years ($1.2 billion in 2009 dollars) to use green technologies to substantially mitigate CSOs and enhance the quality of local waterways. The plan also includes wastewater treatment facility enhancements and pipe renewal and replacement.

The COA complies with Clean Water Act requirements by adopting the presumption approach to the management of CSOs. The goal under the presumption approach is to eliminate and remove the mass of pollutants that otherwise would be removed by the capture of 85% by volume of the combined sewage otherwise collected in the City's combined sewer system during precipitation events. To ensure this ultimate goal is met, the COA requires interim water quality milestones at years 5, 10, 15 and 20. The interim milestones require the City to achieve specific targets in four categories: (1) Total Greened Acres; (2) Overflow Reduction Volume; (3) Miles of Interceptor Lined; and (4) WPCP Upgrades: Design and Construction. The COA includes financial protections in the event that the costs of complying with the COA exceed the Water Department's projections. Should the costs of complying with the COA increase to the extent that the wastewater component of a customer's bill exceeds 2.27% of median household income, the City may petition the PaDEP for an extension of time to satisfy the requirements of the COA so that the financial burden does not become excessive on ratepayers. The COA also includes significant penalties for non-compliance with the various 5-year milestone targets. Penalties start at $25,000 per month for each violation (for the first 6 months) and increase up to $100,000 monthly for uncured violations of 13 months or more.

The Water Department is in the fourth year of the 25-year Green City, Clean Waters Program. It has made significant progress towards meeting the first 5-year milestone requirements and expects to exceed compliance targets in terms of gallons of sewage kept out of waterways (600 million gallons is the requirement for Fiscal Year 2016), number of greened acres (approximately 1,000 greened acres by the end of Fiscal Year 2016 (744 greened acres is the requirement)) and improved air and water quality. For more information regarding the milestones contained in the COA, please see APPENDIX II – "CONSULTING ENGINEER'S REPORT – Wastewater System – Consent Order and Agreement for Combined Sewer Overflows." For more information regarding the Green City, Clean Waters Program, see "MANAGEMENT INITIATIVES – Water Department's Long Term Combined Sewer Overflow Program – Green City, Clean Water's Program."

Information about Green City, Clean Waters Program can be found at the Water Department's Office of Watersheds' website: http://www.phillywatersheds.org.

Clean Streams Law

The Wastewater System is subject to environmental laws and regulations, and from time to time, receives notices of violations of such environmental laws and regulations. On August 23, 2013, the PaDEP notified the Water Department of a violation of the Clean Streams Law as a result of a sanitary sewer overflow at a stormwater outfall. The PaDEP and the Water Department entered into a Consent Assessment of Civil Penalty ("CACP"), dated October 22, 2013. Pursuant to the CACP, the Water Department paid a civil penalty of $6,524 to resolve the violation. On December 13, 2013, the PaDEP notified the Water Department of a violation of the Clean Streams Law as a result of a sewage discharge from a failed sanitary sewer stream crossing into a creek. The notice requested a detailed description of the incident, the steps taken to correct the violation, and a description of the measures prosed to prevent a re-occurrence, which the Water Department provided by letter on January 13, 2014.

Clean Air Act

The federal Clean Air Act ("CAA"), as amended, sets forth requirements for the regulation of certain air emissions. The PaDEP, pursuant to the CAA's mandates, issued regulations for the control of Volatile Organic Compounds ("VOC") and Nitrogen Oxide ("NOx") emissions from major stationary sources. The Northeast WPCP and the Southwest/BRC were found to be major sources of VOC and NOx emissions, while the Southeast WPCP is a Natural Minor source.

The Office of Philadelphia Air Management Services ("AMS") imposed Administrative Consent Orders, for both the Northeast WPCP and the Southwest/BRC on January 19, 2013. Pursuant to these Orders, the Water Department paid a total fine of $10,300, which settled and resolved all order violations through the date of the Orders. In addition, the Water Department agreed to build sludge gravity thickeners at the Northeast WPCP by December 31, 2018. The BRC is now operated independently by private contractor, PBS. As such, the Title V permit for the BRC will be separated from the Southwest WPCP facility permit and be held by PBS. See "OUTSTANDING INDEBTEDNESS AND OTHER LONG-TERM AGREEMENTS – Other Obligations" for more information on the biosolids contract.

Polychlorinated Biphenyls (PCBs)

Pursuant to Section 303(d) of the Clean Water Act, the Delaware River has been declared impaired because of the levels found in the water of an organic chemical known as polychlorinated biphenyls ("PCBs"). As a result, the DRBC is performing a Total Maximum Daily Load ("TMDL") analysis. The TMDL will define how severely the river is impaired and will set forth a plan to reduce loadings of PCBs into the river. The current understanding is that the river exceeds its allowable loadings by 1,000 times its allowance. Loadings come from virtually every source imaginable, e.g., sediments, air, runoff from land, contaminated sites as well as point sources which include the Water Department's three wastewater treatment plants. The Water Department's NPDES permits require implementation of a pollutant minimization plan ("PMP") which involves tracking down sources of PCBs and referring them to the appropriate agency for remediation. This involves additional staff to track the sources of PCBs and to devise programs to reduce the loadings. The level and extent of clean up that will be required by each source category in the future is currently being evaluated by the DRBC, the EPA and the states comprising the DRBC.

Biosolids Treatment and Utilization

The City is required by federal and state law, administered by the EPA and the PaDEP, respectively, to treat and dispose of biosolids captured during wastewater treatment at the City's WPCPs. Biosolids from the three WPCPs are treated at the BRC.

While the Water Department had continued to administer a successful Class A and B biosolids program, the Water Department began a process to move to an entirely Class A biosolids process, which could operate in Philadelphia without odors. PBS owns and operates a thermal drying facility that handles all of the sludge processed by the Water Department and makes a Class A product in the form of pellets to be used as fertilizer and potentially as fuel. PBS also is responsible for the disposition of the Class A pellets. The Class A period of operation will last 20 years with a five-year renewal at the option of the Water Department.

PBS has consistently met the energy guarantees required in the agreement as well the processing needs of the Water Department. Fiscal Year 2013 obligations to PMA were $21,275,441. Fiscal Year 2014 obligations to PMA were $20,364,249 and estimated obligations for Fiscal Year 2015 are $21,650,000. Costs to the Water Department include costs for the additional electricity and natural gas required at the BRC. See "OUTSTANDING INDEBTEDNESS AND OTHER LONG-TERM AGREEMENTS – Other Obligations" for more information on the biosolids contract.

CAPITAL IMPROVEMENT PROGRAM

The Charter requires City Council to adopt annually, on or prior to May 31, a capital budget for the ensuing fiscal year and a capital program showing the capital expenditures planned for that year and each of the five ensuing fiscal years. See "HISTORICAL AND PROJECTED FINANCIAL INFORMATION – Historical Operating Results (Legally Enacted Basis)." A table summarizing the Water Department's capital budget for each year, from Fiscal Year 2015 through Fiscal Year 2021, and highlighting expected yearly COA LTCP Expenditures follows on the next page. A list of the Water Department's top ten capital projects in terms of estimated cost and its expected financing sources also are presented in Tables 7 and 8. The Water Department may change the elements of the Capital Improvement Program at any time and from time to time, including the proposed financing vehicles and/or schedules associated therewith.

Each division of the Water Department utilizes a budgeting system to prepare budget requests based on historical and current experience. The Water Department began preparation of its capital budget for Fiscal Year 2016 in October 2014. The budget was approved by the City Planning Commission and the Mayor's office and was included in the City budget and five-year financial plan presented to City Council on March 5, 2015. City Council is expected to approve the Fiscal Year 2016 capital budget in June 2015. For a discussion of the proposed capital budget for Fiscal Year 2016 and of the Capital Improvement Program for Fiscal Year 2016 through Fiscal Year 2021, see APPENDIX II – "Consulting Engineer's Report – Capital Improvement Program and – Financial Requirements."

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Table 6
Fiscal Years 2015-2021
Capital Improvement Program Budget and COA LTCP Expenditures

Capital Budget Summary	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	Total FY 2016-2021
Collector System/Flood Relief	$30,660,000	$50,660,000	$55,660,000	$55,660,000	$55,660,000	$55,660,000	$55,660,000	$328,960,000
Collector System COA LTCP Related	$40,000,000	$34,300,000	$41,300,000	$46,300,000	$46,300,000	$46,300,000	$46,600,000	$261,100,000
Conveyance System	$36,060,000	$49,060,000	$49,060,000	$49,060,000	$49,060,000	$49,060,000	$49,060,000	$294,360,000
Engineering Admin. & Material Support	$28,633,000	$40,128,000	$37,342,000	$38,605,000	$39,919,000	$41,286,000	$42,708,000	$239,988,000
Water & Wastewater Facilities	$120,000,000	$97,893,000	$97,889,000	$97,885,000	$97,880,000	$97,875,000	$97,870,000	$587,292,000
Wastewater Treatment Facilities COA LTCP Related	$5,000,000	$12,000,000	$12,000,000	$12,000,000	$12,000,000	$12,000,000	$12,000,000	$72,000,000
Sub Total Non COA LTCP	$215,353,000	$237,741,000	$239,951,000	$241,210,000	$242,519,000	$243,881,000	$245,298,000	$1,450,600,000
Sub Total COA LTCP *	$45,000,000	$46,300,000	$53,300,000	$58,300,000	$58,300,000	$58,300,000	$58,600,000	$333,100,000
Total	**$260,353,000**	**$284,041,000**	**$293,251,000**	**$299,510,000**	**$300,819,000**	**$302,181,000**	**$303,898,000**	**$1,783,700,000**

* COA LTCP Expenditures represent 18.67% of the Capital Improvement Program budget for Fiscal Years 2016-2021.

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The following table presents the Water Department's top ten Capital Improvement Program projects in terms of estimated cost. Projects are constructed and paid over a period of fiscal years.

Table 7
Philadelphia Water Department
Top Ten Capital Projects by Estimated Cost

Project Title	Status	Estimated Cost	FY Construction Commencement
Two 30 Million Gallon Storage Tanks at East Park	Design 90% complete	$64,600,000	2016*
New Preliminary Treatment Building at NE WPCP	Design 30% complete	60,000,000	2018*
New 10 Million Gallon Clear Water Basin at Baxter Water Treatment Plant	Pre-Bid Phase	75,000,000	2016*
New Gravity Thickeners at NE WPCP	Under construction	36,519,100	2015
By-Pass Conduit from Primary Sedimentation Tanks Set 1 to Chlorine Contact Tanks at NE WPCP	Under construction	15,894,000	2014
Northern Liberties Flood Relief	Under construction	20,339,684	2014
East/West Raw Water Basin at Belmont Water Treatment Plant	Under construction	19,476,000	2013
Construction of Sewer Maintenance Yard in West Philadelphia	Pre-Bid Phase	14,848,000	2016*
Flood Relief in Master St. and Germantown Avenue	Design 70% complete	10,500,000	2017*
Cobbs Creek Stream Rehabilitation (Reaches 1 to 3)	Design started	10,400,000	2017*
TOTAL		**$327,576,784**	

* Reflects current projection for start of construction

Capital Improvement Program Financing Sources

The Water Department expects to finance its Capital Improvement Program using revenue bonds, pay-as-you-go financing, and possibly alternate sources of funding, including loans or grants.

A significant portion of the costs of the Capital Improvement Program are expected to be funded with the proceeds of debt to be incurred during Fiscal Years 2016 through 2021. The City expects most of such debt to be in the form of new money revenue bonds issued in several transactions, as necessary.

The emphasis of the Capital Improvement Program is on the renewal and replacement of the water conveyance and sewage collection systems along with improvements to the water and wastewater treatment plants, as well as CSO mitigation projects consistent with the Water Department's COA and LTCP. As described in the Consulting Engineer's Report, the Water Department anticipates additional borrowings for Fiscal Years 2016 through 2021 as follows:

Table 8
Anticipated Future Borrowings for Capital Improvement Program

Fiscal Year	Estimated Principal Amount
2016	-
2017	$270,000,000
2018	275,000,000
2019	280,000,000
2020	270,000,000
2021	285,000,000

The remaining anticipated bond issues that will finance a portion of the 2016-2021 Capital Improvement Program have yet to be authorized by City Council. See APPENDIX II – "CONSULTING ENGINEER'S REPORT" herein. The Water Department may change the financing elements of its Capital Improvement Programs, including the financing vehicles utilized and the timing thereof, at any time and from time to time.

Capital Planning Initiatives

The Water Department's Operations, Planning and Environmental Services, and Engineering and Construction Divisions develop capital programs to better anticipate future needs for infrastructure maintenance and upgrades and to manage long-term capital expenditures. Included in these efforts are a sewer assessment program, a geographic information system based record view, a capital facilities assessment program, and a standardized planning process for all large capital projects.

The Water Department has enhanced its planning process for capital projects that have an initial estimated design and construction cost of $2 million or more. As part of such initiative, the Water Department will focus on and document the following three project planning steps: Project Need Identification, Project Alternatives Identification, and Project Alternatives Evaluation. A prioritization system is utilized to capture the primary driving factors associated with a wide range of project types. The desired timing of capital projects also is documented through this process. The improved planning process also will help inform the Water Department's future critical strategic planning efforts, in addition to improving communication and coordination among units within the Water Department. Below is a brief discussion of a few of the Water Department's capital planning initiatives.

Water Main Replacement

The Water Department's current accelerated water main replacement program has been in place for over fifteen years. The five-year average of 24.4 breaks per 100 miles/year is better than the national average of 27.0 breaks per 100 miles/year. The Water Department assesses its water main break rate against the optimal level of 15 breaks per 100 miles/year as defined by the Distribution System Optimization Program under the American Waterworks Association (the "AWWA") Partnership for Safe Water. The Water Department closely monitors water main conditions to determine that adequate capital investment is made to ensure the integrity of the Water System. A significant effort continued in Fiscal Year 2014 to expand the level of assessment of water main failures by evaluating both the likelihood and consequences of failure of individual pipe segments. The Water Department is using this information to predict long-term water main replacement needs and refine the decision criteria for replacement selection. During Fiscal Year 2014, these efforts were organized under the heading of the Linear Asset Management Program ("LAMP") which is leveraging emerging technologies in asset management to assess the water distribution and collection systems.

Over the last 20 years, the Water Department has replaced on average 18.2 miles of water mains per year. The current annual water main replacement budget is $34 million to replace 22 miles of water mains that have reached the end of their useful life. In Fiscal Year 2016, the Water Department expects to increase its annual budget for water main replacement to $44 million in order to further accelerate its water main replacement program with a new goal of replacing 28 miles annually.

Linear Asset Management Program

LAMP has produced an innovative shift in the Water Department's philosophy and practices for asset management infrastructure renewal. LAMP is leveraging information systems and tools, including the Geographical Information System (GIS), Cityworks Maintenance Management System, and Hydraulic model of the water distribution system. LAMP, with assistance from consultants, also has introduced sophisticated statistical tools for the assessment of pipeline failure risks and consequence assessments, including Innovyze CapPlan software, which calculates objective risk scores for pipeline segments. To evaluate non-capital options for extending an asset's useful life, LAMP assesses the relative risk of failure for water pipelines, the costs of replacement, ancillary damage or consequences of failure, and operations and maintenance history. With this information and data from existing Water Department programs, a new long-term plan for water pipeline renewal is being developed and is expected to be implemented starting in 2016. The Water Department has begun to plan for the replacement of additional miles of failure prone leadite joint piping, a cohort that has the highest statistical likelihood of failure. It also is anticipated that the new plan will focus on the renewal of large diameter transmission piping.

Distribution System Reservoir Planning Initiative

The Reservoir Team was created to better manage the strategic planning, capital program projects and operations and maintenance functions of the Water Department's distribution system finished water storage reservoirs. In its initial work, the team updated all standard operating procedures and improved as-built facility documentation. The Reservoir Team has strategically focused on the long-term options for the East Park and Oak Lane Reservoirs where the floating covers are into the second half of their useful lives. The Team's Strategic Planning Group obtained the services of the consulting group CH2M Hill who conducted hydraulic analysis and a life-cycle cost evaluation comparing replacement of floating covers and construction of pre-stressed wire-wound concrete tanks at East Park Reservoir. Based upon the consultant's findings, the team recommended, and the Water Department administration approved, a plan to construct concrete tanks at the East Park site. Concrete tanks are known to provide superior protection of water quality and have become common in the use of ground level reservoirs throughout the United States. Two tanks are now planned at an estimated cost of $64,600,000. CH2M Hill was selected in a competitive process to develop detailed design plans and specifications, and the design work is complete. This project is expected to be bid in Fiscal Year 2015.

Sewer Replacement and Renewal Program

Over the last 20 years, the Water Department has reconstructed and/or rehabilitated, on average, approximately 8 miles of sewer annually. The Water Department's Capital Renewal Program currently reconstructs or relines from six to ten miles of sewers per year based upon results of the Sewer Infrastructure Assessment Program and other condition reports. Some sewers are scheduled for reconstruction as a result of programmed water main replacement and the need to update infrastructure concurrently. LAMP initially is focused on the water distribution system but is expected to assess the sewer collector system starting in Fiscal Year 2016. As infrastructure is studied further, it is likely that annual sewer renewal will increase. The current annual budget for sewer replacement and/or rehabilitation is $30 million per year, which generally yields 6 to 10 miles of sewers per year depending on their size and location.

Sewer Infrastructure Assessment Program

A pilot sewer assessment program completed in Fiscal Year 2005 evaluated the condition of sewer system infrastructure using video technology to inspect over 215 miles of sewers. The Water Department used the information gathered to build a database and ranking system to prioritize needed improvements. Upon completion of the pilot program, the Water Department has incorporated the sewer assessment program into its operation as a means of evaluating the condition of its sewer system. Trained Water Department personnel continue to prepare surveys using data collected through the sewer assessment program to reflect necessary repairs in the capital and operating budgets. This program has helped to identify sewers that were in immediate need of repair, and it is anticipated that over time this effort will result in a reduction of costly and disruptive emergency sewer repairs. In Fiscal Year 2014, the Water Department continued video inspections and performed additional excavations and repairs. A total of 512.5 miles of sewer have been inspected from July 1, 2004 to June 30, 2014. In addition to informing the sewer maintenance unit of locations in need of repair, the sewer assessment program is used to schedule repairs for sewers that have reached the end of their useful life, to be reconstructed as part of the Capital Improvement Program.

HISTORICAL AND PROJECTED FINANCIAL INFORMATION

Historical Comparative Statement of Net Position

The Water Department's financial statements are prepared in accordance with accounting principles promulgated by the Governmental Accounting Standards Board ("GASB").

The statement of net position presents the financial position of the Water Department. It presents information on the Water Department's assets, deferred outflows of resources, and liabilities with the difference between the three reported as net position.

A three year condensed summary of the Water Department's net position as of June 30 of each year is presented as follows:

Table 9
Condensed Statement of Net Position
(Thousands of Dollars)
June 30

	2014	2013	2012*
Assets:			
Current Assets	$ 230,330	$ 243,123	$ 233,512
Capital Assets	2,070,492	2,019,350	1,938,001
Restricted Assets	690,596	526,249	631,960
Total Assets	$2,991,418	$2,788,722	$2,803,473
Deferred Outflows of Resources	66,586	73,865	12,018
Total Assets and Deferred Outflows	$3,058,004	$2,862,587	$2,815,491
Liabilities:			
Current Liabilities	$ 214,671	$ 211,872	$ 200,381
Bonds Payable	1,809,952	1,702,895	1,698,122
Other Non-Current Liabilities	62,898	49,732	51,668
Total Liabilities	$2,087,521	$1,964,499	$1,950,171
Net Position:			
Net Investment in Capital Assets	$ 336,980	$ 351,160	$ 243,997
Restricted	506,669	472,310	439,084
Unrestricted	126,834	74,618	182,239
Total Net Position, as Restated	$ 970,483	$ 898,088	$ 865,320

*Fiscal Year 2012 was not restated for GASB Statement No. 65.

The Water Department's net position at June 30, 2014 was approximately $970.5 million, a $72.4 million or 8.1% increase from June 30, 2013. Total assets and deferred outflows of resources increased by $195.4 million, or 6.8%, to $3.1 billion, and total liabilities increased $123.0 million, or 6.3%, to $2.1 billion.

The following is a discussion of the more significant changes in assets and deferred outflows of resources, liabilities, and net position in Fiscal Year 2014:

- Capital assets, net of depreciation and amortization, increased by $51.1 million to $2.1 billion, or 2.5% as a result of capital additions of $314.6 million, offset by depreciation of $90.5 million and retirements of $173.0 million

- Current assets decreased by $12.8 million to $230.3 million, or 5.3%, due to decreases in cash, investments, and net accounts receivables

- Restricted assets increased by $164.3 million to $690.6 million, or 31.2%, due to increases in the Water Capital Fund primarily due to the bond issuance in August 2013 and January 2014

- Deferred outflows of resources decreased by $7.3 million to $66.6 million, or 9.9%, due to decreases in the fair market value of the Water Funds hedging instrument and amortization of the unamortized loss on refunded debt

- Current liabilities increased by $2.8 million to $214.7 million, or 1.3%, primarily due to an increase in accrued expenses and other components offset by reductions in construction contracts payable.

- Bonds payable increased by $107.1 million to $1.8 billion, or 6.3%, primarily due to the bond issuances in August of 2013 and January of 2014 offset by the maturing principal of $225.1 million during the year

- Other non-current liabilities increased by $13.2 million to $62.9 million, or 26.5%, primarily due to an increase in the net pension obligation of $17.7 million offset by decreases in the other non-current liabilities and derivative instrument liability

- The Water Department's net position increased by $72.4 million to $970.5 million, or 8.1%, as a result of Fiscal Year 2014 operations and capital contributions

- Net investment in capital assets decreased by $14.2 million, or 4.0%, to $337.0 million

- Unrestricted net position increased by $52.2 million, or 70.0%, to $126.8 million. The unrestricted component of net position represents the net amount of total assets, deferred outflows of resources, and total liabilities that are not included in the determination of net investment in capital assets or restricted components of net position

Historical Operating Results (Legally Enacted Basis)

For purposes of rate setting, calculating compliance with the Rate Covenant and debt service coverage and budgeting, the Water Fund accounts are maintained on the modified accrual basis of accounting, also referred to as the "Legally Enacted Basis." Under this basis, revenues are recorded on a receipts basis, except revenues from other governments and interest, which are accrued as earned. A 100% reserve is provided for all doubtful non-governmental receivables. With respect to governmental receivables, a 100% reserve is provided when the City has reason to believe that no appropriation has been made by other governments to finance these receivables. The Water Department does not account for payments for water and sewer service from its governmental contract customers as "revenues from other governments."

Expenditures are recognized and recorded as expenses at the time they are paid or encumbered, except expenditures for debt service and lease payments which are recorded when paid. A reserve is maintained for encumbrances at the close of the fiscal year intended to be sufficient to liquidate estimated obligations incurred in such fiscal year.

Table 10
Philadelphia Water Department
Historical Operating Results

	FY14	FY13	FY12
Operating Revenues:			
Sales to General Customers	$557,396	$521,488	$507,709
Service (Sales) to Other Municipalities	31,642	29,512	35,160
Services to Other Philadelphia Agencies (Includes Fire Protection)	33,621	32,333	28,824
Private Fire Connections	2,236	2,026	2,097
Industrial Sewer Surcharge	4,252	5,656	5,110
Other Operating Revenue	4,480	4,263	3,110
Total Operating Revenue	$633,627	$595,278	$582,010
Non-Operating Revenues			
Interest on Investments	$ 422	$ 2,258	$ 1,332
Operating Grants	1,946	2,727	3,192
Other Non-Operating Revenues	7,024	7,027	5,954
Total Non-Operating Revenues	$9,392	$12,012	$10,478
Fund Balance: Commitments Cancelled* – Net	**$37,436**	**$31,148**	**$20,802**
Total Revenue and Beginning Fund Balance	**$680,455**	**$638,438**	**$613,290**
Total Operating Expenses	**$410,797**	**$399,316**	**$375,085**
Excess of Operating Revenues over Operating Expenses	**$222,830**	**$195,962**	**$206,925**
Excess of Revenues over Expenses before Interest Expenses and Principal Payments on Bonded Indebtedness	**$269,658**	**$239,122**	**$238,205**
Interest Expenses:			
Revenue Bonds	$74,701	$76,210	$82,550
Pennvest Loan	0	0	5
Total Interest Expenses	$74,701	$76,210	$82,555
Excess of Revenues over Expenses Exclusive of Debt Principal Payments	$194,957	$162,912	$155,650
Deduct: Debt Principal Payments on Bonded Indebtedness During Fiscal Year	127,009	124,805	109,868
Net Unapplied Project Revenues	**$67,948**	**$38,107**	**$45,782**
Deduct: Funds Transferred to General Fund	0	560	1,086
Deduct: Funds Transferred to Residual Fund	24,829	22,833	17,303
Deduct: Funds Transferred to Capital Account	20,194	19,380	18,867
Transfer (TO)/FROM The Rate Stabilization Fund	-$22,925	$ 4,666	-$ 8,526
Debt Service Coverage Ratio:			
Total Debt Service	1.11	1.11	1.09
Revenue Bond Debt Service	1.22	1.21	1.20

*Commitments Cancelled represent the liquidation of encumbrances. An encumbrance is an expense that is anticipated to be charged to the Water Fund. Table 12 – Projected Revenue and Revenue Requirements, prepared by the Consulting Engineer, treats cancelled commitments as a contra-expense.

Compliance with Rate Covenant

As discussed above, the General Ordinance mandates a debt service coverage ratio of at least 1.20 for revenue bond debt service and at least 1.00 for total debt service. All Water Fund expenditures are included in the debt service coverage formula under the General Ordinance. Historically, the Water Department has used the Rate Stabilization Fund to manage targeted debt service coverage each year. See "HISTORICAL AND PROJECTED FINANCIAL INFORMATION – Historical Operating Results (Legally Enacted Basis)" above. For a discussion of the Rate Covenant contained in the General Ordinance, see "SECURITY FOR THE BONDS – Rate Covenant" herein.

In Fiscal Years 2012, 2013 and 2014, the Water Department met debt service coverage requirements with a revenue bond debt service coverage ratio of at least 1.20 each year, and a total debt service coverage ratio of at least 1.09 each year. In Fiscal Year 2012, the Water Department met debt service coverage requirements with a revenue bond debt service coverage ratio of 1.20 and a total coverage ratio of 1.09, after taking into account a deposit to the Rate Stabilization Fund of $8,526,000. In Fiscal Year 2013, the Water Department met debt service coverage requirements with a revenue bond debt service coverage ratio of 1.21 and a total coverage ratio of 1.11, after taking into account a withdrawal of $4,666,000 from the Rate Stabilization Fund. For Fiscal Year 2014, the Water Department met debt service coverage requirements with a revenue bond debt service coverage ratio of 1.22 and a total coverage ratio of 1.11, after taking into account a deposit to the Rate Stabilization Fund of $22,925,000. The Water Department's current financial plan calls for gradually increasing debt service coverage ratios as noted in the section titled "Projected Revenues, Expenses and Debt Service."

The table on the following page sets forth the Water Department's Rate Covenant compliance over the last three fiscal years.

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Table 11
Philadelphia Water Department
Rate Covenant Compliance

	FY14	FY13	FY12
Coverage A[1]:			
Net Revenues	$246,733	$243,788	$229,680
/Revenue Bonds Debt Service	$201,710	$201,015	$191,400
= Coverage A	1.22	1.21	1.20
Coverage B[2]:			
Net Revenues	$246,733	$243,788	$229,680
/Total Debt Service + Transfer to Capital Fund	$221,904	$220,395	$211,290
= Coverage B	1.11	1.11	1.09
Coverage C[3]:			
Net Revenues +/- Transfer (To) From Rate Stabilization Fund	$269,658	$239,122	$238,206
/Revenue Bonds Debt Service	$201,710	$201,015	$191,400
= Coverage C	1.34	1.19	1.24

[1] **Coverage A:** The rate covenant contained in the General Ordinance requires the City to establish rates and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues, as defined therein, in each fiscal year at least equal to 120% of the Debt Service Requirements for such fiscal year (excluding debt service due on any Subordinated Bonds).

[2] **Coverage B:** In addition, Net Revenues, in each fiscal year, must equal at least 100% of: (i) the Debt Service Requirements (including Debt Service Requirements in respect of Subordinated Bonds) payable in such fiscal year; (ii) amounts required to be deposited for Subordinated Bonds payable in such fiscal year; (iii) amounts required to be deposited into the Debt Reserve Account during such fiscal year; (iv) debt service on all General Obligations Bonds issued for the Water and Wastewater Systems payable is such fiscal year; (v) debt service payable on Interim Debt in such fiscal year; and (vi) the Capital Account Deposit Amount for such fiscal year, less amounts transferred from the Residual Fund to the Capital Account during such fiscal year. To ensure compliance with the rate covenant, the General Ordinance requires that the City review its rates, rents, fees, and charges at least annually.

[3] **Coverage C:** As long as the Insured Bonds are outstanding, the City covenants to establish rates and charges for the use of the System sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90% of the Debt Service Requirements (excluding debt service on any Subordinated Bonds) in such fiscal year.

The Water Department's Budget

Fiscal Year 2015 Budget

As detailed in the quarterly city manager's report published February 17, 2015 (the "QCMR"), revenue for Fiscal Year 2015 is currently projected to be approximately $704.1 million compared to the budgeted amount for Fiscal Year 2015 of $714.2 million. The $10.1 million decrease is due to reductions in expenditures, and as a result, a projected lower withdrawal from the Rate Stabilization Fund, which reduce total projected revenue for Fiscal Year 2015 by approximately $14 million. The Water Department also received a one-time increase in miscellaneous revenue of approximately $4 million.

Fiscal Year 2015 current projected expenditures total approximately $726.1 million, compared to the $736.2 million figure contained in the Fiscal Year 2015 budget. The decrease of $10.1 million is due to reductions in expenditures of approximately $7 million for purchases of services and approximately $3.5 million for purchases of materials, supplies and equipment.

Fiscal Year 2016 Budget

The Mayor's operating budget is developed from proposed budgets submitted by the various City departments, including the Water Department. The Water Department began preparation of its operating budget for Fiscal Year 2016 in September 2014. Divisional budget proposals setting forth estimated obligations for the ensuing fiscal year were submitted to the Finance Division in November 2014. Revenue estimates are prepared by the Water Revenue Bureau under the direction of the City's Finance Department and the Water Department. The Water Commissioner has reviewed all divisional budget proposals and the Water Revenue Bureau's budget with the assistance of the Finance Division and submitted the Water Department's proposed budget to the City's Budget Bureau and the City's Managing Director in January of 2015. The Mayor has reviewed the Water Department's 2016 Operating Budget and included it as part of his proposed budget to City Council on March 5, 2015. City Council will review the Fiscal Year 2016 budget. At least thirty (30) days before the end of the Fiscal Year, City Council must adopt by ordinance an operating budget and a capital budget for the ensuing Fiscal Year and a capital program for the six ensuing years.

Projected Revenues, Expenses and Debt Service

The following table, prepared by Black & Veatch Corporation, presents a statement of projected revenues and revenue requirements for the operation of the Water and Wastewater Systems for Fiscal Years Ending June 30, 2015 through June 30, 2021, consistent with the requirements of the General Ordinance. See APPENDIX II – "CONSULTING ENGINEER'S REPORT" herein for the full text of the Consulting Engineer's Report. The Consulting Engineer's Report should be read in its entirety. As stated in the Consulting Engineer's Report, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur and are unknown at this time and/or which are beyond the control of Black & Veatch Corporation.

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Table 12

Line No.	Description			2015	2016	2017	2018	2019	2020	2021
	PROJECTED REVENUE AND REVENUE REQUIREMENTS (in thousands of dollars)			Fiscal Year Ending June 30,						
	OPERATING REVENUE									
1	Water Service - Existing Rates			251,475	251,150	249,467	247,487	245,498	243,507	242,863
2	Wastewater Service – Existing Rates			391,261	394,690	393,519	391,470	389,381	387,286	386,223
3	Total Service Revenue – Existing Rates			642,736	645,841	642,986	638,957	634,878	630,793	629,086
	Additional Service Revenue Required									
	Year	Percent Increase	Months Effective							
4	FY 2016	0.00%	12		0	0	0	0	0	0
5	FY 2017	5.00%	12			32,149	31,948	31,744	31,540	31,454
6	FY 2018	4.80%	12				32,203	31,998	31,792	31,706
7	FY 2019	3.75%	12					26,198	26,030	25,959
8	FY 2020	4.00%	12						28,806	28,728
9	FY 2021	4.00%	12							29,877
10	Total Additional Service Revenue Required			0	0	32,149	64,151	89,940	118,167	147,725
11	Total Water & Wastewater Service Revenue			642,736	645,841	675,136	703,109	724,818	748,960	776,811
	Other Income (a)									
12	Other Operating Revenue			25,230	25,191	27,849	24,552	44,639	24,429	24,193
13	Construction Fund Interest Income			1,158	1,049	724	753	751	770	809
14	Debt Reserve Fund Interest Income			0	0	0	0	0	0	0
15	Operating Fund Interest Income			377	296	338	324	411	375	361
16	Rate Stabilization Interest Income			717	706	640	584	586	636	621
17	**Total Revenues**			**670,217**	**673,081**	**704,687**	**729,322**	**771,205**	**775,170**	**802,795**
	OPERATING EXPENSES									
18	Water & Wastewater Operations			(234,551)	(252,059)	(266,658)	(277,193)	(282,850)	(292,341)	(302,181)
19	Direct Interdepartmental Charges			(156,995)	(165,300)	(171,079)	(177,070)	(183,394)	(189,956)	(196,765)
20	**Total Operating Expenses**			**(391,547)**	**(417,359)**	**(437,737)**	**(454,263)**	**(466,244)**	**(482,297)**	**(498,945)**
	NET REVENUES									
21	Transfer From/(To) Rate Stabilization Fund			(23,300)	29,300	7,300	23,900	(25,000)	(2,800)	11,000
22	**NET REVENUES (L 17 + L 20 + L 21)**			**255,371**	**285,022**	**274,250**	**298,959**	**279,961**	**290,073**	**314,850**
	DEBT SERVICE									
	Senior Debt Service									
	Revenue Bonds									
23	Outstanding Bonds			(195,205)	(202,417)	(183,119)	(184,188)	(134,960)	(124,455)	(124,642)
24	Pennvest Parity Bonds			(12,343)	(12,343)	(12,343)	(12,908)	(13,120)	(13,074)	(13,074)
25	Projected Future Bonds			0	(15,000)	(22,088)	(36,394)	(67,146)	(85,548)	(104,386)
26	Total Senior Debt Service			(207,548)	(229,760)	(217,549)	(233,491)	(215,227)	(223,077)	(242,102)
27	TOTAL SENIOR DEBT SERVICE COVERAGE (L22/L26)			1.23 x	1.24 x	1.26 x	1.28 x	1.30 x	1.30 x	1.30 x
	Subordinate Debt Service									
28	Outstanding General Obligation Bonds			0	0	0	0	0	0	0
29	Pennvest Subordinate Bonds			0	0	0	0	0	0	0
30	Total Subordinate Debt Service			0	0	0	0	0	0	0
31	Total Debt Service on Bonds			(207,548)	(229,760)	(217,549)	(233,491)	(215,227)	(223,077)	(242,102)
32	CAPITAL ACCOUNT DEPOSIT			(20,697)	(21,215)	(21,745)	(22,289)	(22,846)	(23,417)	(24,003)
33	TOTAL COVERAGE (L22/(L31+L32))			1.11 x	1.13 x	1.14 x	1.16 x	1.17 x	1.17 x	1.18 x
	RESIDUAL FUND									
34	Beginning of Year Balance			25,275	13,370	16,370	21,093	28,962	38,270	45,299
35	Interest Income			69	53	67	90	121	150	173
	Plus:									
36	End of Year Revenue Fund Balance			27,125	34,047	34,955	43,179	41,888	43,578	48,745
37	Deposit for Transfer to City General Fund (b)			849	876	870	877	854	848	897
	Less:									
38	Transfer to Construction Fund			(39,100)	(31,100)	(30,300)	(35,400)	(32,700)	(36,700)	(43,500)
39	Transfer to City General Fund			(849)	(876)	(870)	(877)	(854)	(848)	(897)
40	Transfer to Debt Service Reserve Fund			0	0	0	0	0	0	0
41	End of Year Balance			13,370	16,370	21,093	28,962	38,270	45,299	50,716

(a) Includes other operating and non-operating income, including Interest income on funds and accounts transferable to the Revenue Fund.
(b) Transfer of interest earnings from the Bond Reserve Account to the Residual Fund as shown in Line 37 to satisfy the requirements for the Transfer to the General Fund.

RATES

Current Rates

Historically, the Water Department has set rates and charges for water and wastewater service within certain parameters established by City Council and in compliance with the requirements of the General Ordinance. Generally, the Water Department has held a rate case every four years, pursuant to which rates and charges for the ensuing four fiscal years have been established. Current rates were established under a rate proceeding that concluded in the Fall of 2012 (the "2012 Rate Case") for rate increases effective January 1, 2013 to July 1, 2014, which rates will remain in effect until new rates are authorized by the Board in accordance with the requirements of the General Ordinance, the Philadelphia Code and the standards described below under " – Standards for Rates and Charges." For a discussion of the limited management audit of the Water Revenue Bureau that the Water Department agreed to conduct in connection with the 2012 Rate Case, see " – Water Revenue Bureau Management Audit" below.

The City expects to commence the next rate proceeding by the end of the 2015 calendar year in order to implement a rate increase anticipated to be effective in Fiscal Year 2017. Please refer to Table 12 "Projected Revenues and Revenue Requirements", prepared by the Engineering Consultant, on the prior page.

Water rates for general service customers of the Water Department consist of a service charge related to the size of the meter, plus a schedule of quantity charges for water use. Sewer rates for general service customers are similar. Stormwater charges are based on a customer's property size and its relative imperviousness. A uniform stormwater charge based on the average size and imperviousness of residential properties is imposed on residential customers. Charges to non-residential and condominium customers are based on each property's size and imperviousness. For more information about stormwater rates see "THE SYSTEM – Stormwater Management – Rates and Services." The Water Department estimates that a typical residential customer has a 5/8 inch meter and uses 7,200 cubic feet of water per year (53,860 gallons). Based on the current rate schedule in effect, annual charges for typical residential customers are $344.52 for water service, $264.96 for wastewater service and $161.40 for stormwater service, for a total of $770.88 per year.

Water Revenue Bureau Management Audit

Concurrent with the 2012 Rate Case, the Water Department agreed to perform a limited audit of certain data, practices and procedures of the Water Revenue Bureau, including management reporting, the utility's billing system (basis2), accounts receivable, and collections. The study was largely completed on or about the end of the 2014 calendar year, and draft results have been shared with the Water Department and the Water Revenue Bureau. The preliminary results indicate that the billing system does not exhibit data integrity flaws that would require its replacement in the near term. Benchmarking analyses demonstrate that the Water Department operates comparably to its peer utilities on nearly all cost and timing metrics conducted in the study: billings, collections, delinquencies, and shut-offs. Delivery of the final report is expected before the end of the Fiscal Year. The Water Department anticipates that implementation of the recommendations contained therein will be ongoing.

Historical Rates

The table on the next page shows historical monthly water and sewer bills, based, in each case, on a typical residential customer with a 5/8 inch meter using 600 cubic feet or 4,488 gallons per month (7200 cubic feet per year) and a typical residential customer that is also an income eligible senior citizen, who receives a 25% discount, with a 5/8 inch meter using 500 cubic feet or 3,740 gallons per month.

Table 13
Philadelphia Water Department
Typical Residential
Monthly Water and Sewer Rate Charges

	Effective Date	Water	Sewer*	Total	% Increase
5/8" Meter	07/01/14	29.89	37.54	67.43	5.0
Residential	07/01/13	28.71	35.53	64.24	5.8
600 Cu. Ft.	01/01/13	27.50	33.24	60.74	5.8
Monthly	07/01/11	26.08	31.35	57.43	5.7
	07/01/10	23.85	30.47	54.32	5.5
	07/01/09	21.84	29.63	51.47	6.3
	11/01/08	19.84	28.58	48.42	6.7
	07/01/07	18.18	27.22	45.40	4.3
	07/01/06	17.29	26.24	43.53	6.7
	08/01/05	16.07	24.72	40.79	1.9
	02/01/05	15.68	24.36	40.04	12.6
5/8" Meter	07/01/14	19.49	26.05	45.54	4.9
Residential	07/01/13	18.75	24.68	43.43	5.8
500 Cu. Ft.	01/01/13	17.95	23.08	41.03	5.3
monthly	07/01/11	17.10	21.86	38.96	5.6
Senior Citizen	07/01/10	15.65	21.26	36.91	5.4
(25% Discount)	07/01/09	14.35	20.68	35.03	6.1
	11/01/08	13.05	19.96	33.01	6.2
	07/01/07	12.00	19.09	31.09	4.4
	07/01/06	11.39	18.40	29.79	6.7
	08/01/05	10.56	17.34	27.91	1.9
	02/01/05	10.31	17.08	27.39	12.4

* Sewer charges include stormwater costs.

Billing, Collections and Bookkeeping

Under the Charter, the Water Revenue Bureau is directly responsible for the billing, metering and collection of revenues for the Water Fund. Since February 2003, oversight of the Water Revenue Bureau has been under the City's Revenue Commissioner, who reports directly to the Finance Director. The Water Department's collection percentage was approximately 90% for Fiscal Year 2014.[*]

The Water Revenue Bureau uses outside collection agencies to collect unpaid revenues. Collection agencies generated gross revenues of approximately $3,100,000 in Fiscal Year 2012, approximately $3,600,000 during Fiscal Year 2013 and approximately $2,500,000 during Fiscal Year 2014. Collection agencies also are used to collect commercial delinquencies.

[*] This collection percentage reflects the percentage of retail bills rendered during the twelve month period for Fiscal Year 2014 (July 1, 2013 to June 30, 2014) and recognizes an allowable payment period for bills rendered in June. The Consulting Engineer's Report used in connection with the Water and Wastewater Revenue Bonds, Series 2014A issued January 23, 2014, presented a retail current year collection factor of 85.5%. The retail current year collection factor is based on billings rendered and associated receipts received during each fiscal year. The current year retail collection factor is lower than the collection percentage of 90% because it does not recognize an allowable payment period for bills rendered in June.

The City is pursuing a multifaceted strategy designed to improve collections while decreasing delinquencies. Key compliance strategies include revocation of commercial licenses and sequestration, each of which are described in APPENDIX IV – "GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA." Although these efforts have concentrated primarily on general fund revenues, certain improvements in processes and equipment may affect Water Fund revenues. The financial projections provided herein do not include any additional revenue or acceleration of revenue as a result of these initiatives.

In addition to compliance efforts, the City is engaged in two active projects to implement technology solutions for its cashiering and payments processing systems and to develop an integrated data warehouse and case management system. These initiatives are designed to improve operational efficiencies by providing tools currently unavailable to the City.

Automatic Meter Reading

From 1997-1999 the Water Department's Automatic Meter Reading Program (the "AMR Program") replaced virtually all residential water meters with new meters equipped with radio transmitter devices. The AMR Program has resulted in various improvements, including more accurate meter reading and billing, fewer billing disputes, better customer service and increased revenue collection. In addition, the AMR Program has reduced the costs of meter reading and related support and improved the Water Department's ability to initiate and enforce collection of delinquent accounts. From 2011-2013, as required in the long-term meter reading contract, ITRON, the service provider, conducted battery replacement of the vast majority of radio transmitter devices, thereby extending their capability to the year 2025, approximately. During Fiscal Year 2014, the Water Department's AMI team began studying Second Generation Advanced Metering Infrastructure (AMI), which is intended to provide enhanced capabilities in water consumption, management and revenue generation. The AMI team contains representatives of the Water Department and the Water Revenue Bureau and continues to provide executive decision-makers with data and information to develop a strategic plan for the funding and implementation of the AMI System.

Charter Amendment and Rate Ordinance

In November 2012, Philadelphia voters approved an amendment to the Charter to allow City Council to establish, by ordinance, an independent rate-making body responsible for fixing and regulating rates and charges for water and sewer services, provided that City Council, by ordinance, establish open and transparent processes and procedures for fixing and regulating those rates and charges. The Rate Ordinance became effective January 20, 2014, and the Board has been formed. Any changes to rates and charges to be made by the Board in accordance with the standards established by City Council are expected to take effect in future rate proceedings and will not affect current rates in effect as of the date of issuance and delivery of the Bonds.

The Charter still mandates that the standards pursuant to which rates and charges are fixed shall be such as to yield to the City at least an amount equal to operating expenses and interest and sinking fund charges on any debt incurred or about to be incurred for water supply, sewage and sewage disposal purposes. In computing operating expenses, proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City also are included.

While any Water and Wastewater Bonds are outstanding, the Board also will be required to set rates and charges in amounts sufficient for the City to comply with the provisions of the General Ordinance.

The Rate Ordinance subjects the Board to the following when making a rate determination:

Standards for Rates and Charges.

(a) The rates and charges shall be such as shall yield to the City at least an amount equal to operating expenses and debt service, on all general obligations of the City in respect of the water, sewer, stormwater systems and, in respect of Water and Wastewater Revenue Bonds, such additional amounts as shall be required to comply with the Rate Covenant and the Debt Reserve Requirement, and proportionate charges for all services performed for the Water Department by all officers, departments, boards or commissions of the City.

(b) The rates and charges shall yield not more than the total appropriation from the Water Fund to the Water Department and to all other departments, boards or commissions, plus a reasonable sum to cover unforeseeable or unusual expenses, reasonably anticipated cost increases or diminutions in expected revenue, less the cost of supplying water to City facilities and fire systems and, in addition, such amounts as, together with additional amounts charged in respect of the City's sewer system, shall be required to comply with the Rate Covenant and Debt Reserve Requirement in connection with the issuance of any Water and Wastewater Revenue Bonds. Such rates and charges may provide for sufficient revenue to stabilize them over a reasonable number of years.

(i) In fixing rates and charges, the Board shall recognize the importance of financial stability to customers and fully consider the Water Department's Financial Stability Plan (defined herein). In addition, the Board shall determine the extent to which current revenues should fund capital expenditures and minimum levels of reserves to be maintained during the rate period. When determining such levels of current funding of capital expenditures and minimum levels of reserves, the Board shall consider all relevant information presented including, but not limited to, peer utility practices, best management practices and projected on customer rates. The Board shall set forth any such determinations in a written report.

(ii) Rates and charges shall be developed in accordance with sound utility rate making practices and consistent with the current industry standards for water, wastewater and stormwater rates.

(iii) Whenever the Water Department has proposed changes to the rates and charges, the Board, shall issue a written report incorporating the information used by the Board in reaching a decision to approve, modify or reject the proposed rates and charges.

(iv) The decision to approve, modify or reject the proposed rates shall be made in a timely manner, but no later than 120 days from the filing of notice of any proposed change in rates and charges.

(c) The rates and charges shall be equitably apportioned among the various classes of consumers and shall be just, reasonable and nondiscriminatory as to the same class of consumers.

(d) Special rates and charges, to be designated as "charity water rates and charges", shall be established for public and private schools, institutions of purely public charity, and places used for actual religious worship.

(e) Special rates and charges, to be designated as "public housing water rates and charges" shall be established for property of the Philadelphia Housing Authority and shall be set so that the Philadelphia Housing Authority receives a five percent (5%) reduction of service and quantity charges.

The Rate Ordinance also requires the Water Department to develop a comprehensive plan ("Financial Stability Plan"), pursuant to which the Water Department shall forecast capital and operating costs and expenses and corresponding revenue requirements. The Water Department, in the Financial Stability Plan, shall identify the strengths and challenges to the Water Department's overall financial status including the Water Fund's credit ratings, planned and actual debt service coverage, capital and operating reserves and utility service benchmarks. The Water Department shall compare itself to similar agencies in peer cities in the United States. The Water Department shall submit an updated Financial Stability Plan to City Council every four years and updated prior to proposing revisions in rates and charges.

See "— Philadelphia Water, Sewer and Stormwater Rate Board" and "— Rate Setting," below. The Rate Ordinance does not impose specific requirements for liquidity, reserve levels and funding of capital expenditures. A copy of the Rate Ordinance is available at the Office of the Director of Finance, 1300 Municipal Services Building, 1401 J. F. Kennedy Boulevard, Philadelphia, Pennsylvania 19102 or online at www.phila.gov.

Any changes to the process for determination of rates and charges to be implemented pursuant to the Rate Ordinance are expected to become effective for future rate proceedings and will not affect current rates applicable during the issuance and delivery of the Bonds.

Philadelphia Water, Sewer and Stormwater Rate Board

The Rate Ordinance provides for the creation and implementation of the Board, consisting of five members serving staggered terms. The members are appointed by the Mayor and confirmed by City Council, and the Mayor has sole discretion to remove Board members for cause, including conflicts of interest and neglect of duty. Board members who resign or are removed may be replaced by a mayoral appointee confirmed by City Council, and such successor may serve for the remaining term of the replaced member.

The Rate Ordinance requires that Board members be City residents with a minimum of five years professional experience in one or more of the following fields: (1) public or business administration, (2) finance, (3) utilities, (4) engineering or (5) water resources management. At least one member must have experience as a consumer advocate in utility rate cases([*]), and one member must be a commercial and/or industrial ratepayer([**]) with knowledge and experience related to stormwater management and rates. The Board members are not compensated for their services, but are entitled to reasonable expenses consistent with their duties. In addition, the Board shall receive an appropriation sufficient to allow it to carry out its responsibilities. Brief biographical descriptions of the members of the Board are set forth below.

Nancy Winkler – Appointed City Treasurer effective January 31, 2011. Prior to her tenure with the City, Ms. Winkler worked for over 28 years with Public Financial Management (the PFM Group), from 1990 to 2011 as Managing Director, with responsibility to manage the firm's municipal, state and authority practices in New York and Maryland. (Term expires July 1, 2015.)

Lee Huang – As Senior Vice President and Principal at Econsult Solutions, Ms. Huang provides business and public policy makers with economic consulting services in public infrastructure, development, public policy, public finance, and community and neighborhood development. (Term expires July 1, 2016.)

Michael Chapman[**] – COO of Chapman Auto Stores. Mr. Chapman previously served on the Philadelphia Water Department's Stormwater Customer Advisory Committee. (Term expires July 1, 2017.)

Sonny Popowsky[*] – Mr. Popowsky previously served as the Consumer Advocate of Pennsylvania from 1990 to 2012 and was a member of the Keystone Energy Board and the U.S. Department of Energy and Electricity Advisory Committee. (Term expires July 1, 2018.)

Bernard Brunwasser – Former Commissioner, Deputy Water Commissioner and General Manager of the Finance Division for the Philadelphia Water Department. Mr. Brunwasser served on the finance committee of American Water Works Association. (Term expires July 1, 2019.)

Rate Setting

Under the Rate Ordinance, the Board replaces the Water Department as the entity responsible for setting water, waste water and stormwater rates. The Board must establish open and transparent processes and procedures for public comment on proposed rates and charges and must promulgate regulations for rate hearings and determination of rates and charges consistent with the Philadelphia Code. Until such regulations are adopted, the Board must follow existing Water Department regulations regarding rate setting. Prior to fixing and regulating rates, the Board must hold public hearings. The Water Department is required to provide supporting documentation (including financial accounting and engineering data) to the Board with regard to (i) establishing revenue requirements necessary to meet the System's immediate and long term operating and capital needs, (ii) maintaining the utility's financial stability (with reliance upon the Financial Stability Plan) and (iii) providing a fair allocation of costs among customer groups based upon cost of service principles.

The Rate Ordinance requires that when the Water Department has proposed changes in rates and charges, the Board must prepare a written report containing the information the Board utilized in reaching its decision to approve, modify or reject the proposed rates and charges. The Board's decision must be made in a timely manner and no later than 120 days from the filing of notice of any such proposed changes. If the Board is unable to act on the proposed rates and charges within that time frame, the Water Department may establish emergency rates and charges on a temporary basis pending a final determination by the Board.

MANAGEMENT INITIATIVES

The Water Department has implemented several initiatives designed to increase the efficiency of its operations and reduce costs.

Water Department's Long Term Combined Sewer Overflow Program – Green City, Clean Waters Program

The fundamental goal of the Water Department's Long Term Combined Sewer Overflow Program which is referred to as the "Green City, Clean Waters Program," is to improve and preserve the water environment in the Philadelphia area and to fulfill the Water Department's obligations under the Clean Water Act and the Pennsylvania Clean Streams Law.

The Green City, Clean Waters Program is a program that utilizes green sustainable infrastructure to control stormwater and reduce combined sewer overflows, while also having the following ancillary benefits:

- Utilizing rainwater as a resource by recycling, re-using and recharging long neglected groundwater supplies;
- Maintaining and upgrading one of the nation's oldest water infrastructure systems;
- Transforming rivers and streams into recreation destinations and green open spaces for visitors and residents;
- Preserving and restoring habitat for aquatic species within urban stream corridors;
- Revitalizing the City with an emphasis on sustainability; and

- Energizing citizens, partnerships and public and regulatory partners to adopt and join in this watershed-based strategy.

The City has been recognized as a national leader in its approach to the management and reduction of CSOs. See APPENDIX II – "Organization and Management – Strategic Plan and Management Initiatives." Its Green City, Clean Waters Program is an innovative stormwater management program that uses "green" infrastructure rather than undertaking a "grey" approach to the management of CSOs. Unlike traditional surfaces that repel the rain, contributing to overflows of the System, green technologies such as stormwater tree pits, vegetated bumpouts, porous asphalt, rain gardens and sidewalk planters capture rainwater runoff to infiltrate, store and manage the rain as a resource. By contrast, a grey approach relies on the construction of tunnels and holding tanks for storage of combined sewer overflow until it can be processed. The Green City, Clean Waters Program works in tandem with the Mayor's *Greenworks Philadelphia* in order to reinvent the City into a green, sustainable city of the future. As part of the Green City, Clean Waters Program, the City expects to spend approximately $2.4 billion over 25 years to use green technologies to satisfy the requirements of the COA.

Water Accountability

The Water Department has been successful in developing and applying programs to reduce uncaptured revenue and the loss of finished water from the distribution system. The Water Department has cut its non-revenue water by 40% over the past decade, from a typical annual level of 120-140 MGD prior to Fiscal Year 1995 to 86.3 MGD at the close of Fiscal Year 2013. The Water Department has been active in promoting new methods through the AWWA, and has attained recognition as an industry leader in this regard. The Water Department was the first water utility in the United States to adopt the best management water audit approach published by the International Water Association and the AWWA in 2000. The method accounts for all water as either consumption or losses. Apparent losses are paper losses due to customer meter inaccuracies, billing error or unauthorized consumption. These losses cause water utilities to lose a portion of the revenue to which they are entitled. Real losses are physical losses, largely leakage. These losses cause excess production costs for water utilities. The summary data from the Water Department's recent water auditing history is given below.

Over recent years the Water Department has implemented a host of programs to reduce and control water and revenue losses. In order to optimize revenue capture, the Water Department operates a Customer Meter Management Program featuring the nation's second largest water utility AMR system, and a successful Revenue Protection Program which has recouped millions of dollars of uncaptured revenue as shown in the table below. See also "RATES – Automatic Meter Reading."

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Table 14
Philadelphia Water Department
Water Accountability

Component	FY2013	FY2012	FY2011	FY2010	FY2009
-Water Supplied, mgd (A)	238.4	237.1	250.0	244.5	245.8
-Billed Consumption, mgd (B)	152.1	152.6	158.4	165.9	174.6
-Unbilled Authorized Consumption, mgd (C)	5.4	3.3	2.1	2.0	2.1
-Unbilled Authorized Consumption Costs	$1,398,440	$1,052,000	$866,917	$778,548	$713,800
-Total Authorized Consumption, mgd (D=B + C)	157.5	155.9	160.5	167.9	176.6
-Water Losses, mgd (A-D)	80.9	81.2	91.2	76.6	71.2
-Apparent Losses, mgd (E)	20.5	21.4	23.1	17.0	15.0
-Apparent Losses costs, million	$43.1	$43.1	$43.5	$30.0	$22.2
-Real Losses, mgd (F)	60.4	60.0	66.3	59.6	56.2
-Real Losses costs, million	$8.15	$8.32	$7.36	$5.87	$4.84
-Infrastructure Leakage Index, dimensionless	8.8	10.2	11.5	9.9	8.9
-Non-revenue Water, mgd	86.3	84.6	91.6	78.6	73.3
-Percent Non-revenue Water by volume*	38.5	38.4	39.7	34.9	32.3
-Percent Non-revenue Water by cost	21.1	22.2	23.2	16.3	12.5

Unbilled Authorized Consumption = components of Authorized Consumption which are not billed and do not produce revenue.

Non-revenue Water = Unbilled Authorized Consumption (C) + Apparent Losses (E) + Real Losses (F), or

Non-revenue Water = Unbilled Authorized Consumption + Water Losses

***Percent Non-revenue Water by volume = Non-revenue Water/(Water Supplied – Exports).**
For example, in Fiscal Year 2010, 78.6/(244.5 – 19.2) = 34.9%Non-revenue Water by volume.

Table 15
Revenue Recoveries through the Water Department's and Water Revenue Bureau's Revenue Protection Program and Re-Inspection Program

Fiscal Year	Water Recovered (MGD)	Revenue Recovered
2000	1.39	$ 2,493,949
2001	5.81	3,398,952
2002	0.69	1,705,932
2003	1.14	2,386,379
2004	1.67	2,449,327
2005	1.74	3,084,261
2006	1.01	1,622,768
2007	0.36	871,780
2008	0.40	1,026,920
2009	1.00	1,803,272
2010	1.49	2,554,261
2011	2.30	3,889,675
2012	2.40	4,336,492
2013	2.56	4,453,107
2014*	1.74	5,015,532
Total	25.70	$41,092,607

*Fiscal Year 2014 data only reflects recoveries for the Revenue Protection Program. Fiscal Year 2014 data for the Re-Inspection Program is not available.
Note: Revenue Recovered is based on additional billings that were rendered. Data regarding actual collections of these billings is not available.

The Water Department conducts a variety of activities to proactively contain leakage losses in the water distribution system. The successful Leak Detection Program has been in continuous use for over 30 years and surveys the system for hidden leaks by actively patrolling approximately one-third of the system each year. As part of a research project, in 2007 the Water Department installed instrumentation to control leakage by advanced pressure management in a District Metered Area ("DMA"). This technology resulted in up to 90% reduction of the leakage rate in this small pilot area. The Water Department was one of the first water utilities in the United States to employ this technique to inhibit the return of leakage and to lessen the occurrence of water main breaks.

The Water Department also contracts for in-line leak detection in active large-diameter transmission water piping. In the first seven years of the program, a total of almost 42 miles of piping was scanned and 83 hidden leaks were pinpointed. A number of these leaks were found to exist on inaccessible piping beneath interstate highways and wooded parkland. This service has added another highly effective tool to the battery of methods that the Water Department is employing to minimize lost water.

In Fiscal Year 2014, 99.7% of all hydrants were operational. The implementation of a proactive program to track hydrant information and deploy repair crews has resulted in hydrant availability remaining significantly above 99%. The program includes routine inspection, repair and painting. During Fiscal Year 2013, the Water Department coordinated with the Philadelphia Fire Department to inspect virtually all of the City's 25,321 fire hydrants and conducted 5,496 repairs, painted 4,282 hydrants and installed 313 tamper-proof hydrant locks.

Wastewater Master Planning

The Water Department has created a dedicated Wastewater Planning Program within the Planning and Research Section to facilitate and lead long term strategic planning efforts for the City's Wastewater System. The Wastewater Planning Program is currently developing a 50-year Wastewater Master Plan, that will incorporate the regulatory requirements contained in the COA and LTCP, connect the collection system and treatment facilities holistically, and look beyond current regulatory drivers to envision the future of the utility. The Wastewater Master Plan will not only deliver a system plan based on current information, but also will provide a mechanism for establishing business processes, identifying ongoing data assessments and trend analyses, and updating the Master Plan on a regular basis. These efforts will be used to inform the Capital Improvement Program, prioritization of capital projects, research, studies and related wastewater planning work.

Planning and Research initiated the Wastewater Master Plan by assessing existing plant infrastructure, analyzing historic data trends, and mapping timelines for the COA and LTCP and Philadelphia Air Management Services (odor control) regulatory construction timelines. Through 2014, the Water Department completed a 50-year population and wastewater flow projection study to determine that the existing WPCP infrastructure has sufficient capacity to meet projected dry weather flow through 2065. A wet weather capacity plan to meet the 20-year milestones of the COA and LTCP, and 50-year wet weather study are in progress. The Water Department expects to complete the Wastewater Master Plan for all three WPCPs and collection systems on or about December of 2015. It will continue to re-examine city-wide strategies to proactively address any new regulatory issues or changing demographics and maximize resources in wastewater to capture energy or nutrients as part of its ongoing mission of achieving sustainability and cost savings.

Water Master Planning

As for Wastewater Master Planning, the Water Department has created a dedicated Water Planning Program within Planning and Research Section to facilitate and lead long term strategic planning efforts for the City's Water System. The Water Planning Program is currently developing a 50-year Water Master Plan that will document existing conditions, evaluate Water System data and trends, and plan for the future of the utility. The Water Master Plan will not only deliver a system plan based on current information, but also will provide a mechanism for establishing business processes, identifying ongoing data assessments and trend analyses, and updating the Master Plan on a regular basis. These efforts will be used to inform the Capital Improvement Program, prioritization of capital projects, research, studies and related water planning work.

Planning and Research initiated the 50-year Water Master Plan in 2014 by starting a series of workshops for engaging the Water Department's experts, collecting existing system information and performing data assessments and trend analyses of system data. The Water Department expects to complete the Water Master Plan on or about December of 2016. It will continue to re-examine city-wide strategies address any new regulatory issues, changing demographics and external drivers such as climate change, water conservation and system expansion.

Investigation and Mitigation of Flooding

Several areas of the City (South Philadelphia, Northern Liberties, Washington Square West and Germantown) have experienced significant basement flooding during intense rain events. The frequency and intensity of flood producing rain events have increased in recent years. The Water Department has initiated a hydraulic analysis of the sewer system in the flood prone areas in order to understand the cause of basement flooding as well as to determine possible solutions. The Water Department will continue to incorporate flood relief capital projects into its capital program. These projects by their complex nature will take many years to plan, design and construct. In order to provide more immediate relief for properties while capital solutions are identified, designed, and constructed, the Water Department has established an assistance program called the

Basement Backflow Prevention Program. The Water Department uses private plumbers to evaluate flood prone properties to determine if they would benefit from the installation of one or more backflow prevention devices. If the determination is positive, then a backflow prevention device is engineered for that particular property and installed by a private plumber at the Water Department's cost. The property owner must agree to accept maintenance responsibility for the backflow prevention device. All areas within the City are now eligible.

Cityworks Computerized Maintenance Management System

The Water Department has utilized computer tracking of its operations and maintenance activities for over 30 years. Historically, the Water Department created individual databases to track underground asset management, pipeline and sewer repairs and work on other systems. Since 2009, the Water Department has consolidated its analysis of the multiple systems for maintenance and operations through a program called Cityworks. On June 5, 2012, Phase II launched and included simultaneous activation of numerous core field workgroups, including Customer Service, Emergency Desk, Distribution, Sewer Maintenance and the Call Center, thereby improving customer service and data handling. Cityworks implementation is currently in the final phase, which involves incorporation of ancillary groups such as Green Infrastructure. Future enhancements to Cityworks include the development of reporting and data analysis capabilities that are expected to result in additional improvements to operations and maintenance tracking.

Energy

Historically, the pricing of energy has determined how the Water Department thinks about energy. By monitoring electrical demand and reducing waste, the Water Department has effectively controlled its energy costs. However, removal of the rate caps on electricity, volatile energy markets in general, wet weather pumping scenarios, and carbon footprint reduction have initiated a fresh look into policies and procedures to conserve energy and identify alternative sources. The Water Department convened an energy management team which developed a comprehensive energy policy titled the Utility-Wide Strategic Energy Plan. This Plan includes Key Performance Indicators, Energy Conservation Measures, energy cost projections, and options to develop renewable energy sources.

In alignment with the Strategic Energy Plan, construction of a 5.6 megawatt digester gas (biogas which is a renewable energy source) cogeneration facility has been completed at the Water Department's Northeast WPCP. The cogeneration facility went into operation in December 2013. Once consistent operations have been established, the facility is projected to produce over 40 million kilowatt hours ("kWh") per year, which is approximately 85% of the treatment plant's use or 15% of the Water Department's current annual electricity usage. See "OUTSTANDING INDEBTEDNESS AND OTHER LONG-TERM AGREEMENTS – Other Obligations" for more information regarding the Water Department's obligations respecting the cogeneration facility at the Northeast WPCP.

The Water Department continues to explore the feasibility of renewable energy opportunities at its facilities including sewage biogas co-digestion, geothermal heat pump systems, hydroelectric, hydrokinetic, food waste co-digestion, and other enhanced gas production pathways. The triple bottom line approach is applied in order to evaluate each of the potential technologies as part of the decision making process.

Security of Water Department Facilities and Water Supply

In light of the events of September 11, 2001, the Water Department took steps to improve the security of the City's water supply and all other major Water Department facilities and assets. These steps were taken in close coordination with the City's Managing Director's Office and all other appropriate City agencies and departments. The Water Department is a representative agency in the City of Philadelphia Emergency Operations Center, which is designed to permit City emergency personnel to respond quickly to any major event through specialized computer and communications equipment, including a backup 911 system. The

Water Department remains in contact with federal, state, and local law enforcement and emergency personnel and has performed a vulnerability analysis of its entire potable water system. The work was primarily funded by the EPA.

It should be noted that the Water Department had an extensive water quality protection and security plan in place prior to September 11, 2001. All finished water basins are completely covered; all plants are fenced in and topped by barbed wire; gates are secured; video surveillance equipment has been installed; and the Water Department continues to draw and conduct nearly one thousand tests on water samples from various locations each day. Municipal guards have been assigned to the main entrance at each water plant since 2002 to control access to the facility to only authorized persons and/or deliveries. Online water quality monitors provide continuous testing of all stages of the treatment process.

Using EPA funding, the City also installed a Contamination Warning System Demonstration Pilot in May 2013. The technologies, tools and plans developed under the Contamination Warning System are now being implemented as part of the Water Department's routine operations and emergency response capabilities.

Through the Water Department's Source Water Protection Program, the Schuylkill Action Network ("SAN") was formed to focus on source water protection and drinking water quality issues of the Schuylkill River watershed. SAN has been developing and implementing projects that restore and protect the watershed as a regional drinking water source and promote stewardship and education. SAN's projects have also involved transferring the experience and lessons learned to other communities and enhancing intergovernmental communication and coordination. SAN received the 2013 Governor's Award for Environmental Excellence. This and other awards recognize the Water Department as the model for the region and country in the area of source water protection.

The Source Water Protection Program initiated the first early notification system for regional water quality and quantity events, the Delaware Valley Early Warning System ("EWS"). The EWS provides valuable services to subscribing public and private water suppliers, surface water dependent industries, and government agencies throughout the lower Delaware and Schuylkill watersheds. The successful application and development of the EWS is largely dependent on collaboration among these stakeholders. The EWS provides important information regarding the occurrence and status of contamination events in the coverage area. Technological components, such as a sophisticated notification system, secure database portal, user-friendly website, and comprehensive water quality and flow monitoring network create the advanced functionality and unique capabilities that make the EWS an international model for surface water notification and monitoring systems.

The Source Water Protection Program also launched the first recreational advisory system of its kind relaying real-time precipitation, turbidity, and flow data to forecast probable bacteria levels in the Schuylkill River between Manayunk and Boathouse Row. The website, called the Philly RiverCast System, uses a three-tier color scale to designate the suitability of water quality for contact recreational activities.

To further ensure the safety and quality of the City's drinking water, the Water Department will continue to expand its network to constantly monitor water quality using online instrumentation. This will allow the Water Department to track real-time water quality conditions at strategic locations throughout the City's water distribution system and to monitor any variations should they occur.

Design preparation is currently underway for emergency generation equipment and switchgear replacement at the following facilities: Torresdale Raw Water pump station and East Oak Lane pumping station. The project to install standby generators at the Fox Chase Booster Pump Station was bid on May 21, 2013 and the contractor was issued a Notice to Proceed on August 7, 2013. The remainder of the Water Department facilities are being studied and evaluated. Subject to space constraints, switchgear requirements, and coordination with other projects, it is anticipated that most of these facilities will be outfitted with back-up power generators by 2017.

INVESTMENT CONSIDERATIONS

System Revenues, Expenditures, Financing and Capital Assets

Actual operation, maintenance and repair expenses of the System may be greater or less than currently projected. Factors such as damages to facilities and infrastructure, changes in technology, regulatory standards, and increased costs of material, energy, labor and administration can substantially affect the expenses of the Water Department. Although the City has covenanted to set rates and charges in amounts sufficient to pay debt service on the Bonds in accordance with the provisions of the General Ordinance, there can be no assurance that amounts will be so sufficient or that sufficient amounts will be collected. Furthermore, increases in rates and charges could result in a decrease in demand for usage and result in a decrease in revenues.

Operation of the System requires significant capital expenditures that are partially dependent on the City's ability to secure appropriate financing. Disruptions in the capital and credit markets may limit the City's access to capital. Without sufficient capital, or if the cost of borrowing increases, it may materially and adversely affect the business, financial condition, and results of operations of the Water Department.

Water and wastewater operations entail specific risks and may impose significant costs. Wastewater collection and treatment and septage pumping and sludge hauling involve various unique risks. If collection or treatment systems fail or do not operate properly, or if there is a spill, untreated or partially treated wastewater could discharge onto property or into nearby streams and rivers, causing various damages and injuries, including environmental damage. These risks are most acute during periods of substantial rainfall or flooding, which are the main causes of CSO and system failure. Any failure of water and wastewater treatment plants, networks of water and wastewater pipes, or water reservoirs could result in losses and damages that may adversely affect the business, financial condition, and results of operations of the Water Department.

General Economic Conditions

General economic conditions may affect the Water Department's financial condition and results of operations. A general economic downturn may lead to a reduction in discretionary and recreational water use. General economic turmoil also may lead to an investment market downturn, which may result in asset market values (including pension plan assets) suffering a decline and significant volatility. For instance, a decline in the City's pension plans' asset market values could increase required cash contributions to these plans from the Water Fund and increased pension expenses in subsequent years.

Environmental Regulations

The City is subject to state and federal environmental laws and regulations applicable to the System. These laws and regulations are subject to change, and the City may be required to expend substantial funds to meet the requirements of such changing laws and regulations in the future. Failure to comply with these laws and regulations may result in the imposition of administrative, civil and criminal penalties, or the imposition of an injunction requiring the City to take or refrain from taking certain actions. In addition, the City may be required to remediate contamination on properties owned or operated by the City or on properties owned by others, but contaminated as a result of City operations.

Water and wastewater services are governed by various federal and state environmental protection and health and safety laws and regulations, including the federal Safe Drinking Water Act, the Clean Water Act and similar state laws, and federal and state regulations issued under these laws by the EPA and PaDEP. These laws and regulations establish, among other things, criteria and standards for drinking water and for discharges into the waters of the United States and nearby states. Pursuant to these laws, the Water Department is required to obtain various environmental permits for operations. Violations or noncompliance could result in fines or other sanctions by regulators and/or such violations or noncompliance could result in civil suits. Environmental laws and regulations are complex and change frequently. These laws, and the enforcement thereof, have tended to become more stringent over time. While the Water Department has budgeted for future capital and operating expenditures to comply with these laws and permitting requirements, it is possible that new or stricter standards could be imposed that will require additional capital expenditures or raise operating costs.

Climate change is receiving ever increasing attention worldwide. Climate change laws and regulations have been passed and are being proposed that require compliance with greenhouse gas emissions standards, as well as other climate change initiatives. Because of the uncertainty of future climate change regulatory requirements, the Water Department cannot predict the potential effects of future laws and regulations on operations.

Weather and Seasonal Fluctuations

The Water Department's operations are affected by weather conditions and are subject to seasonal fluctuations, which could adversely affect demand for services and revenues and earnings.

The Water Department depends on an adequate water supply to meet the present and future demands of customers. Drought conditions could interfere with sources of water supply and could reduce demand due to the implementation of the Water Department's drought emergency restrictions, which could adversely affect the Water Department's ability to supply water in sufficient quantities to existing and future customers. An interruption in water supply could have a material adverse effect on the operations of the Water Department.

Security of the System

Damage to the System resulting from vandalism, sabotage, or terrorist activities may adversely affect the operations and finances of the System. There can be no assurance that the City's security, emergency preparedness and response plans will be adequate to prevent or mitigate such damage, or that the costs of maintaining such security measures will not be greater than currently anticipated. See "MANAGEMENT INITIATIVES – Security of Water Department Facilities and Water Supply" for efforts the Water Department has taken to secure the System.

The Water Department is increasingly dependent on the continuous and reliable operation of information technology systems, and a disruption of these systems, resulting from cyber security attacks or other events, could adversely affect its business. The Water Department relies on information technology systems with respect to customer service and billing, accounting and, in some cases, the monitoring and operation of treatment, storage and pumping facilities. In addition, the Water Department relies on these systems to track utility assets and to manage maintenance and construction projects, materials and supplies. A loss of these systems, or major problems with the operation of these systems, could adversely affect operations and have a material adverse effect on the financial condition and results of operations of the Water Department. Information technology systems may be vulnerable to damage or interruption from the following types of cyber security attacks or other events:

- power loss, computer systems failures, and internet, telecommunications or data network failures;
- operator negligence or improper operation by, or supervision of, employees;
- physical and electronic loss of data;
- computer viruses, cyber security attacks, intentional security breaches, hacking, denial of service actions, misappropriation of data and similar events;
- difficulties in the implementation of upgrades or modification to information technology systems; and
- hurricanes, fires, floods, severe weather events and other natural disasters.

Although the Water Department does not believe that its systems are at a materially greater risk of cyber security attacks than other similar utilities, its information technology systems may be vulnerable to damage or interruption from the types of cyber security attacks or other events listed above or other similar actions, and such incidents or other events may go undetected for a period of time.

Limited Recourse on Default

The rights of Bondholders are limited in the event the City defaults on its obligation to pay debt service on the Bonds. The ultimate enforcement of Bondholders' rights upon any default by the City in the performance of its obligations under the Act, the General Ordinance and the Bonds will depend upon the application of remedies provided in the Act, the General Ordinance and other applicable laws. Litigation may be necessary to obtain relief in accordance with these remedies. Such litigation may be protracted and costly. Remedies such as mandamus, specific performance or injunctive relief are equitable remedies, which are subject to the discretion of the court. See "REMEDIES OF BONDHOLDERS" and APPENDIX III – "SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS" herein.

Bankruptcy

The rights of the owners of the Bonds are subject to the limitations on legal remedies against the City, including applicable bankruptcy, moratorium, insolvency or other laws affecting creditor's rights or remedies and are subject to general principles of equity (regardless of whether such enforceability is considered in equity or at law), to the exercise of judicial discretion in appropriate cases and to the limitations on legal remedies against governmental entities in the Commonwealth of Pennsylvania. Bankruptcy proceedings, or the exercise of powers by the federal or state government, if initiated, could subject the owners of the Bonds to judicial discretion and interpretation of their rights in bankruptcy or otherwise, and consequently may entail risks of delay, limitation, or modification of their rights or the modification of City covenants affecting the System or Project Revenues.

The Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (the "PICA Act") prevents the City from filing a petition for relief under Chapter 9 of the Federal Bankruptcy Code ("Chapter 9") as long as the Pennsylvania Intergovernmental Cooperation Authority ("PICA") has outstanding any bonds issued pursuant to the PICA Act ("PICA Bonds"). In order to file for bankruptcy under Chapter 9 after the PICA Bonds have been repaid in full, the City must obtain the written approval of the Governor of the Commonwealth. As of the close of business on February 28, 2015, the principal amount of PICA Bonds outstanding was $363,640,000. The final maturity date of the PICA Bonds is June 15, 2023. See APPENDIX IV – "GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA Summary Financial Information – Pennsylvania Intergovernmental Cooperation Authority."

The filing of a petition under Chapter 9 operates as an automatic stay of the commencement or continuation of any judicial or other proceeding against the debtor or its property. However, a petition filed under Chapter 9 does not operate as a stay of the application of pledged special revenues to the payment of indebtedness secured by such revenues. Special revenues include receipts derived from the ownership or operation of systems that are primarily used or intended to be used primarily to provide transportation, utility or other services, including the proceeds of borrowings to finance such systems. The Federal Bankruptcy Code further provides that special revenues acquired by the debtor after the commencement of a Chapter 9 case shall remain subject to any lien resulting from any security agreement entered into by the debtor before the commencement of the case. However, the lien on special revenues derived from a system will be subject to the payment of the necessary operating expenses of that system. Therefore, Project Revenues acquired by the City after the filing of a Chapter 9 petition would remain subject to the lien created by the General Ordinance in favor of the Bondholders, but will be subject to the payment of Operating Expenses of the System, which are priority payments. A bankruptcy court's interpretation of 'necessary operating expenses' under the Federal Bankruptcy Code could differ from the definition of Operating Expenses of the System under the General Ordinance. The Federal Bankruptcy Code also provides that a pre-bankruptcy transfer of property of a debtor to or for the benefit of a bondholder, on account of such bond, may not be avoided as a preferential transfer. Although Project Revenues appear to satisfy this definition, no assurance can be given that a court would hold that Project Revenues are special revenues. If Project Revenues were determined not to be "special revenues," then there is a risk that Project Revenues collected after the commencement of the bankruptcy case would not be subject to the lien of the General Ordinance, such that the recovery by holders of the Bonds could be negatively affected.

Unless the debtor consents or the plan proposed under Chapter 9 so provides, the bankruptcy court may not interfere with any of the property or revenues of a Chapter 9 debtor or with such debtor's use or enjoyment of any income-producing property. Accordingly, the City may be able to defer the application of Bond proceeds, Project Revenues or the pledged Water and Wastewater Funds to payment of the Bondholders during the pendency of the bankruptcy case, but the lien on such funds and revenues would remain, and would continue to encumber such funds and revenues (subject again to payment of 'necessary operating expenses' and Operating Expenses of the System, to the extent these differ from 'necessary operating expenses' as determined by a bankruptcy court under the Federal Bankruptcy Code). Even if a bankruptcy court had the power to compel immediate payment, the court, in the exercise of its equitable powers, could decline to require the City to use Bond proceeds, Project Revenues and the Water and Wastewater Funds to pay Bondholders during the pendency of the case.

The debtor may file a plan for the adjustment of its debts that may include provisions modifying or altering the rights of creditors generally, or any class of them, secured or unsecured. The plan, when confirmed by the court, binds all creditors that have had notice or knowledge of the plan and discharges all claims against the debtor provided for in the plan. No plan may be confirmed unless certain conditions are met, among which are that the plan is in the best interests of creditors, is feasible and has been accepted by each class of claims impaired thereunder. Even if the plan is not so accepted, it may be confirmed if the court finds that the plan is fair and equitable with respect to each class of non-accepting creditors impaired thereunder and does not discriminate unfairly. Thus, under the above described "cram-down" provisions of the Federal Bankruptcy Code, a plan of adjustment could be imposed on the Bondholders that would give them less than their anticipated rate of interest on the Bonds or possibly even less than a full return of their principal under certain circumstances, and/or extend the time for payment of principal of or interest on the Bonds.

The foregoing references to the Federal Bankruptcy Code should not be construed as implying that the City expects to resort to the provisions of such statute or that, if it did, any proposed restructuring would include a dilution of the sources of payment of and security for the Bonds.

Loss of Tax Exemption

In order to maintain the exclusion from gross income for federal income tax purposes of the interest on the Bonds, the City has covenanted to comply with the applicable requirements of the Internal Revenue Code of 1986, as amended. Interest on the Bonds could become includable in gross income for purposes of federal income taxation retroactive to the date of issuance of such Bonds as a result of acts or omissions of the City in violation of this or other covenants applicable to the Bonds. See "TAX EXEMPTION." The Bonds are not subject to redemption or any increase in interest rates in the event of an event of taxability and will remain outstanding until maturity or prior redemption in accordance with the provisions contained in the General Ordinance.

Tax legislation, administrative actions taken by tax authorities, and court decisions may cause interest on the Bonds to be subject, directly or indirectly, to federal income taxation or state income taxation, or otherwise prevent the beneficial owners of the Bonds from realizing the full current benefit of the tax status of such interest. For example, future legislation to resolve certain federal budgetary issues may significantly reduce the benefit of, or otherwise affect, the exclusion from gross income for federal income tax purposes of interest on all state and local obligations, including the Bonds. In addition, such legislation or actions (whether currently proposed, proposed in the future or enacted) could affect the market price or marketability of the

Bonds. Prospective purchasers of the Bonds should consult their own tax advisors regarding any pending or proposed federal or state tax legislation, regulations or litigation, and its impact on their individual situations.

Water Conservation

Decreased customer water consumption as a result of water conservation efforts may adversely affect demand for water services and may reduce revenues and earnings. There may be declines in water usage per customer as a result of an increase in conservation awareness, and the structural impact of an increased use of more efficient plumbing fixtures and appliances. Difficulty obtaining future rate increases to offset decreased customer water consumption to cover investments and expenses, may adversely affect the business, financial condition, and results of operations of the Water Department.

Other Considerations

Debt Covenants. The City is obligated to comply with the Rate Covenant and other debt covenants under certain agreements, including its insurance contracts. Failure to comply with such covenants, which if not cured or waived, could result in the City being required to repay or finance the related borrowings before their due date, limit future borrowings, cause cross default issues, and increase borrowing costs. If forced to repay or refinance (on less favorable terms) these borrowings, the Water Department's business, financial condition, and results of operations could be adversely affected by increased costs and rates.

Labor Relations. Work stoppages and other labor relations matters could adversely affect operating results. Approximately 89% of the Water Department's workforce is unionized. In light of rising costs of healthcare and retirement benefits, contract negotiations in the future may be difficult.

Variable Rate Bonds and Qualified Swap Agreement. The City has two series of variable rate bonds outstanding, which are subject to fluctuation in interest rates. The City has entered into the Swap Agreement with respect to the Series 2005B Bonds. If the Swap Agreement were terminated early, the City might be required to pay a termination payment to the Swap Provider. See "OUTSTANDING INDEBTEDNESS AND OTHER LONG-TERM AGREEMENTS – Swap Agreement."

LITIGATION AND CLAIMS

Claims against the City relating to the Water Department are paid out of the Water and Wastewater Funds and only secondarily out of the City's General Fund, in the event cash balances in the Water and Wastewater Funds are insufficient at the time of payment of the claim. The General Fund is then reimbursed by the Water and Wastewater Funds for any such advance. The following discussion concerning litigation and claims, which has been prepared based on information supplied by the Law Department of the City and has been reviewed by the Law Department of the City, relates to litigation and claims against the City chargeable to the Water Fund. A discussion of other litigation affecting the City is set forth under the caption in APPENDIX IV – "GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA – Litigation."

Various claims have been asserted against the City respecting the Water Department and in some cases lawsuits have been initiated. The City may be liable if these claims are reduced to judgment or otherwise settled in a manner requiring payment by the City.

The City, from the Water and Wastewater Funds, paid $3.0 million in Fiscal Year 2012, $5.1 million in Fiscal Year 2013 and $5.2 million in Fiscal Year 2014 in judgments and settlements for claims. The Water Department's budget for Fiscal Year 2015 contains an appropriation for Water Department claims in the amount of $6.5 million.

TAX EXEMPTION

Federal Taxation

In the opinions of Ballard Spahr LLP and Andre C. Dasent, P.C., Co-Bond Counsel, interest on the 2015A Bonds (including original issue discount, if any) is excludable from gross income for purposes of federal income tax under existing laws as enacted and construed on the date of initial delivery of the 2015A Bonds, assuming the accuracy of the certifications of the City and continuing compliance by the City with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"). Interest on the 2015A Bonds is not an item of tax preference for purposes of either individual or corporate federal alternative minimum tax; however, interest on 2015A Bonds held by a corporation (other than an S corporation, regulated investment company, or real estate investment trust) may be indirectly subject to federal alternative minimum tax because of its inclusion in the adjusted current earnings of a corporate holder. Co-Bond Counsel express no opinion regarding other federal tax consequences of ownership or disposition of, or the accrual or receipt of interest on, the 2015A Bonds.

In the opinions of Ballard Spahr LLP and Ahmad Zaffarese LLC, Co-Bond Counsel, interest on the 2015B Bonds (including original issue discount, if any) is excludable from gross income for purposes of federal income tax under existing laws as enacted and construed on the date of initial delivery of the 2015B Bonds, assuming the accuracy of the certifications of the City and continuing compliance by the City with the requirements of the Internal Revenue Code of 1986, as amended (the "Code"). Interest on the 2015B Bonds is not an item of tax preference for purposes of either individual or corporate federal alternative minimum tax; however, interest on 2015B Bonds held by a corporation (other than an S corporation, regulated investment company, or real estate investment trust) may be indirectly subject to federal alternative minimum tax because of its inclusion in the adjusted current earnings of a corporate holder. Co-Bond Counsel express no opinion regarding other federal tax consequences of ownership or disposition of, or the accrual or receipt of interest on, the 2015B Bonds.

[The Bonds being offered at a discount ("original issue discount") equal generally to the difference between the public offering price and principal amount are referred to as "Discount Bonds." For federal income tax purposes, original issue discount on a Discount Bond accrues periodically over the term of such Bond as interest with the same tax exemption and alternative minimum tax status as regular interest. The accrual of original issue discount increases the holder's tax basis in such Bond for determining taxable gain or loss from sale or from redemption prior to maturity. Holders should consult their tax advisers for an explanation of the accrual rules.]

[The Bonds being offered at a premium ("original issue premium") equal generally to the excess of their public offering price over their principal amount are referred to herein as the "Premium Bonds." For federal income tax purposes, original issue premium is amortizable periodically over the term of a Premium Bond through reductions in the holder's tax basis for such Bond for determining taxable gain or loss from sale or from redemption prior to maturity. Amortization of premium does not create a deductible expense or loss. Holders should consult their tax advisers for an explanation of the amortization rules.]

Commonwealth of Pennsylvania Taxation

The Bonds are exempt from personal property taxes in Pennsylvania, and interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax, under the laws of the Commonwealth of Pennsylvania as enacted and construed on the date of initial delivery of the Bonds.

Changes in Federal and State Tax Law

From time to time, there are presidential proposals, proposal of various federal committees, and legislative proposals in the Congress and in the states that, if enacted, could alter or amend the federal and state tax matters referred to herein or adversely affect the marketability or market value of the Bonds or otherwise prevent holders of the Bonds from realizing the full benefit of the tax exemption of interest on the Bonds. Further, such proposals may impact the marketability or market value of the Bonds simply by being proposed. It cannot be predicted whether or in what form any such proposals may be enacted or whether if enacted such proposals would apply to bonds issued prior to enactment. In addition, regulatory actions are from time to time announced or proposed and litigation is threatened or commenced which, if implemented or concluded in a particular manner, could adversely affect the market value, marketability or tax status of the Bonds. It cannot be predicted whether any such regulatory action will be implemented, how any particular litigation or judicial action will be resolved, or whether the Bonds would be impacted thereby.

Purchasers of the Bonds should consult their tax advisors regarding any pending or proposed legislation, regulatory initiatives or litigation. The opinions expressed by Co-Bond Counsel are based upon existing legislation and regulations as interpreted by relevant judicial and regulatory authorities as of the date of issuance and delivery of the Bonds, and Co-Bond Counsel has expressed no opinion as of any date subsequent thereto or with respect to any proposed or pending legislation, regulatory initiatives or litigation.

NEGOTIABLE INSTRUMENTS

The Act provides that bonds issued thereunder shall have all the qualities and incidents of securities under the Uniform Commercial Code of the Commonwealth of Pennsylvania and shall be negotiable instruments.

CONSULTING ENGINEER'S REPORT

The Consulting Engineer's Report, prepared by Black & Veatch Corporation, Kansas City, Missouri, is included in APPENDIX II of this Official Statement in reliance upon the authority of such firm in engineering and related financial matters. Potential purchasers of the Bonds should read the Consulting Engineer's Report in its entirety. As stated in the Consulting Engineer's Report, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur that are unknown at this time and/or which are beyond the control of Black & Veatch Corporation.

UNDERWRITING

The 2015A Bonds are being purchased by the underwriters listed on the front cover page of the Official Statement (collectively, the "2015A Underwriters") pursuant to a Bond Purchase Agreement between the City and J.P. Morgan Securities LLC, on behalf of itself and as representative of the other 2015A Underwriters, at a purchase price of $___________, which equals the principal amount of the 2015A Bonds, [plus/minus] original issue [premium/discount] of $_________ and less an aggregate 2015A Underwriters' discount of $__________. The 2015A Underwriters will purchase all of the 2015A Bonds if any such 2015A Bonds are purchased. The obligation of the 2015A Underwriters to purchase the 2015A Bonds is subject to certain terms and conditions set forth in the purchase contract related to the 2015A Bonds.

The initial public offering prices of the 2015A Bonds set forth on the inside front cover page hereof may be changed without notice by the 2015A Underwriters. The 2015A Underwriters may offer and sell 2015A Bonds to certain dealers (including dealers depositing 2015A Bonds into investment trusts, certain of which may be sponsored or managed by one or more of the 2015A Underwriters) and others at prices lower than the offering prices set forth on the inside front cover page hereof.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Bank, National Association, one of the 2015A Underwriters.

The 2015B Bonds are being purchased by the underwriters listed on the front cover page of the Official Statement (collectively, the "2015B Underwriters" and together with the 2015A Underwriters, the "Underwriters") pursuant to a Bond Purchase Agreement between the City and Merrill Lynch, Pierce, Fenner & Smith Incorporated, on behalf of itself and as representative of the other 2015B Underwriters, at a purchase price of $___________, which equals the principal amount of the 2015B Bonds, [plus/minus] original issue [premium/discount] of $_________ and less an aggregate 2015B Underwriters' discount of $__________. The 2015B Underwriters will purchase all of the 2015B Bonds if any such 2015B Bonds are purchased. The obligation of the 2015B Underwriters to purchase the 2015B Bonds is subject to certain terms and conditions set forth in the purchase contract related to the 2015B Bonds.

The initial public offering prices of the 2015B Bonds set forth on the inside front cover page hereof may be changed without notice by the 2015B Underwriters. The 2015B Underwriters may offer and sell 2015B Bonds to certain dealers (including dealers depositing 2015B Bonds into investment trusts, certain of which may be sponsored or managed by one or more of the 2015B Underwriters) and others at prices lower than the offering prices set forth on the inside front cover page hereof.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial services. Under certain circumstances, the underwriters and their affiliates may have certain creditor and/or other rights against the City in connection with such activities. Certain of the Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various advisory and investment banking services for the City, for which it received or will receive customary fees and expenses. In the various course of their various business activities, the Underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively traded securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investments and trading activities may involve or relate to assets, securities and/or instruments of the City (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the City. The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

Certain of the Underwriters have entered into distribution agreements with other broker-dealers (that have not been designated by the City as Underwriters) for the distribution of the Bonds to retail investors at the original issue prices. Such agreements generally provide that the relevant Underwriter will share a portion of its underwriting compensation or selling concession with such broker-dealers.

RATINGS

Fitch Ratings, Moody's and S&P have assigned to the Bonds municipal bond ratings of "A+", with a stable outlook, "A1", with a stable outlook and "A", with a positive outlook, respectively. Certain information was supplied by the City and the Water Department to the rating agencies to be considered in evaluating the Bonds. Such ratings express only the views of the respective rating agencies and are not a recommendation to buy, sell or hold the Bonds.

Any desired explanation of the significance of such ratings should be obtained from the rating agency furnishing the same, at the following addresses: Moody's Investors Service, Inc., 7 World Trade Center, 250 Greenwich Street, New York, New York 10007; Standard & Poor's Ratings Group, 55 Water Street, New York, New York 10041; and Fitch Ratings, One State Street Plaza, New York, New York 10004. Generally, a rating agency bases its rating on the information and materials furnished to it and on investigations, studies and assumptions of its own. There is no assurance such ratings will not be revised downward or withdrawn entirely by the rating agencies, if in the judgment of such rating agencies, circumstances so warrant. Any such downward revision or withdrawal of such ratings may have an adverse effect on the market price of the Bonds.

The Underwriters have not assumed responsibility to advise the owners of the Bonds of any change in any rating on the Bonds and neither the City nor the Underwriters have undertaken any responsibility to maintain any particular rating on the Bonds. The City has agreed, in the Continuing Disclosure Agreement, to report actual rating changes on the Bonds. See “CONTINUING DISCLOSURE” herein and APPENDIX VII. Any downward change in or withdrawal of a credit rating may have an adverse effect on the marketability or market price of the Bonds.

LEGAL MATTERS

Certain legal matters incident to the authorization, issuance and sale of the 2015A Bonds will be passed upon by Ballard Spahr LLP and Andre C. Dasent, P.C., both of Philadelphia, Pennsylvania, Co-Bond Counsel for the 2015A Bonds. Certain legal matters incident to the authorization, issuance and sale of the 2015B Bonds will be passed upon by Ballard Spahr LLP and Ahmad Zaffarese LLC, both of Philadelphia, Pennsylvania, Co-Bond Counsel for the 2015B Bonds. The proposed forms of such legal opinions are included herein as APPENDIX VI. Certain legal matters will be passed upon for the City by the City Solicitor. Certain legal matters will be passed upon for the City by Greenberg Traurig, LLP, Philadelphia, Pennsylvania, Disclosure Counsel. Certain legal matters relating to the information contained in Appendix IV and Appendix V will be passed upon by Hawkins Delafield & Wood LLP, Washington, D.C. Certain legal matters will be passed upon for the Underwriters of the 2015A Bonds by Saul Ewing LLP, of Philadelphia, Pennsylvania and Gonzalez Saggio & Harlan, of New York, New York. Certain legal matters will be passed upon for the Underwriters of the 2015B Bonds by Dilworth Paxson LLP, of Philadelphia, Pennsylvania and Gonzalez, Saggio & Harlan, of New York, New York.

FINANCIAL ADVISORS

Public Financial Management, Inc. and Phoenix Capital Partners, LLP, both of Philadelphia, Pennsylvania, have been retained by the City as Co-Financial Advisors in connection with the issuance of the Bonds and, in such capacity, have assisted the City in the preparation of Bond-related documents. The Co-Financial Advisors’ fee for services rendered with respect to the sale of the Bonds is contingent upon the issuance and delivery of the Bonds. Although the Co-Financial Advisors have read and participated in the preparation of this Official Statement, they have not independently verified any of the information set forth herein. The information contained in this Official Statement has been obtained primarily from the City’s records and from other sources that are believed to be reliable, including financial records of the City, reports of consultants and other entities that may be subject to interpretation. No guarantee is made as to the accuracy or completeness of any such information. No person, therefore, is entitled to rely upon the participation of the Co-Financial Advisors as an implicit or explicit expression of opinion as to the completeness and accuracy of the information contained in this Official Statement.

NO LITIGATION OPINION

Upon the delivery of the Bonds, the City Solicitor will furnish an opinion, in form satisfactory to Co-Bond Counsel and the Underwriters, to the effect that, among other things, and except as disclosed in this Official Statement, there is no litigation or other legal proceeding pending, or, to the best of her knowledge after customary inquiry, threatened in writing against the City, to restrain or enjoin the issuance or delivery of the Bonds or challenging the validity of the proceedings of the City taken in connection therewith or the pledge or application of any moneys provided for the payment of the Bonds, or contesting the powers of the City with respect to any of the foregoing.

CERTAIN REFERENCES

All summaries of the provisions of the Bonds and the security therefor, the Act and the General Ordinance set forth herein and in APPENDIX III and all summaries and references to other materials not purported to be quoted in full, are only brief outlines of certain provisions thereof and do not constitute complete statements of such documents or provisions. Reference is made hereby to the complete documents relating to such matters for the complete terms and provisions thereof or for the information contained therein. All estimates, assumptions and statistical information contained herein, while taken from sources considered reliable, are not guaranteed. So far as any statements are made in this Official Statement involving matters of opinion, or projections or estimates, whether or not expressly so stated, they are made merely as such and not as representations of fact.

The attached Appendices are integral parts of this Official Statement and should be read in their entireties together with all foregoing statements in this Official Statement.

The agreement between the City and holders of Bonds is fully set forth in the Bonds and the General Ordinance. Neither this Official Statement nor any advertisement for the Bonds is to be construed as constituting an agreement with purchasers of the Bonds.

CONTINUING DISCLOSURE

In order to assist the Underwriters in complying with the requirements of Rule 15c2-12(b)(5) under the Securities and Exchange Act of 1934, as amended (the "Rule"), the City and Digital Assurance Certification, L.L.C., as dissemination agent for the benefit of the Registered Owners (as defined in such agreement) from time to time of the Bonds, will enter into a Continuing Disclosure Agreement to be dated the date of original delivery and payment for the Bonds, the form of which is annexed hereto as Appendix VII. During the previous five years, the City has failed on occasion to timely file event notices related to certain changes to ratings assigned to bonds issued by or on behalf of the City including: (i) certain enhanced rating changes (related to changes to the credit quality of bond insurers and of banks providing credit and liquidity support for certain variable rate bonds) and (ii) certain underlying credit rating changes. In other instances, the City timely filed such notices but did not associate the notices with all specific relevant outstanding obligations or filed the notice through incorporation by reference of specific relevant outstanding obligations or filed the notice through incorporation by reference of information in an offering document. The foregoing description of instances of non-compliance by the City with its continuing disclosure undertakings should not be construed as an acknowledgement by the City that any such instance was material. As of the date hereof, the City is currently in compliance in all material respects with its previous undertakings with regard to continuing disclosure for prior obligations issued. The City has reviewed and updated its disclosure policies and procedures to ensure that the City remains in compliance with its continuing disclosure undertakings in the future.

CERTAIN RELATIONSHIPS

Ballard Spahr LLP, as Co-Bond Counsel for both series of Bonds and Andre C. Dasent, P.C., Co-Bond Counsel for the 2015A Bonds, each provide ongoing legal services to the City and the Water Department. Ahmad Zaffarese LLC, Co-Bond Counsel for the 2015B Bonds, provides ongoing legal services to the City. Greenberg Traurig LLP, Ballard Spahr LLP and Ahmad Zaffarese LLC provide services to certain of the Underwriters from time to time, unrelated to the issuance of the Bonds. Saul Ewing LLP, co-counsel to the 2015A Underwriters, provides legal services to the City from time to time. Dilworth Paxson LLP, co-counsel to the 2015B Underwriters, represents the City in matters unrelated to this financing. Black & Veatch Corporation, the Consulting Engineer, provides ongoing consulting and engineering services to the Water Department and other departments of the City.

This Official Statement has been duly executed and delivered by the following officers on behalf of the City of Philadelphia, Pennsylvania.

CITY OF PHILADELPHIA

By:____
Rob Dubow, Director of Finance

APPENDIX I

FINANCIAL STATEMENTS OF THE WATER FUND
DERIVED FROM THE CAFR
FOR FISCAL YEAR ENDED JUNE 30, 2014

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Philadelphia Water Department
Financial Statements
Fiscal Year Ended June 30, 2014

CITY OF PHILADELPHIA WATER DEPARTMENT

2014 FINANCIAL STATEMENTS

TABLE OF CONTENTS

The City of Philadelphia Water Department Management Discussion and Analysis

The Philadelphia Water Department is a municipal utility serving the citizens of the Philadelphia region by providing integrated water, wastewater, and stormwater services. The utility's primary mission is to plan for, operate, and maintain both the infrastructure and the organization necessary to purvey high-quality drinking water, to provide an adequate and reliable water supply for all household, commercial, and community needs, and to sustain and enhance the region's watersheds and quality of life by managing wastewater and stormwater effectively.

The Water Department was established by the City pursuant to the Charter with the power and duty to operate, maintain, repair, and improve the Water and Wastewater Systems. The Charter requires that the Water Rate Board must set rates and charges such as shall yield to the City at least an amount equal to operating expenses and debt service, on all obligation of the City in respect of the water, sewer, storm water systems and, in respect of water, sewer, and storm water revenue obligations of the City, such additional amounts as shall be required to comply with any rate covenant and sinking fund reserve requirements approved by ordinance of Council in connection with the authorization or issuance of water, sewer, and storm water revenue bonds, and proportionate charges for all services performed for the Water Department by all officers, departments, boards, or commissions of the City. The Charter also authorizes the Water Department, with the approval of City Council, to enter into contracts for supplying water service and sewer and sewage disposal service to users outside the limits of the City.

2014 Financial Highlights

The Water Department met its bond coverage ratios for the year with a revenue bond coverage ratio of 1.22, a total debt service coverage ratio of 1.11, and a net operating revenue bond coverage ratio of 1.34 prior to the deduction of the transfer to the Rate Stabilization Fund.

At the end of the current fiscal year, the Water Fund's net position totaled $970.5 million resulting from an excess of its assets over its liabilities; its unrestricted net position showed a balance of $126.8 million.

The Water Fund's net position showed an increase of $72.4 million during the current Fiscal Year compared with an increase of $32.8 million for the prior fiscal year.

Overview of the Financial Statements

This section serves as an introduction to the Basic Financial Statements. It represents management's examination and analysis of the Water Department's financial condition and performance. Summary financial data, key financial and operational indicators used in Water Department's budget, bond resolutions, and other management tools were used for the analysis.

The Financial Statements report information about the Water Department on the Full Accrual Accounting method as used by similar business activities in the private sector.

The Water Department's basic financial statements include the statement of net position, statement of revenues, expenses, and changes in net position, statement of cash flows, and notes to the financial statements.

The Water Department's financial statements are prepared in accordance with accounting principles promulgated by the Governmental Accounting Standards Board (GASB).

Statement of Net Position: The statement of net position presents the financial position of the Water Department. It presents information on the Water Department's assets, deferred outflows of resources, and liabilities with the difference between the three reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Water Department is improving or deteriorating.

Statement of Revenues, Expenses, and Changes in Net Position: The statement of revenues, expenses, and changes in net position presents information showing how the Water Department's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Revenues are recognized when earned, not when they are received. Expenses are recognized when incurred, not when they are paid. Thus, revenues and expenses are reported in this statement for some items that will result in cash flows in future fiscal periods (e.g. salary and wages payable).

Statement of Cash Flows: The statement of cash flows presents information on the effects changes in assets, liabilities, and operations have on cash during the course of the fiscal year.

The Water Fund financial statements can be found following the Management Discussion and Analysis. The Notes provide additional information that is essential to a full understanding of the data provided in the Water Fund financial statements. In addition to the basic financial statements and accompanying notes, government accounting standards require presentation of required supplementary information ("RSI"). Following the RSI, the Water Department has presented other supplementary information ("OSI").

Please see the Comprehensive Annual Financial Report of the City of Philadelphia for complete financial information for the City and its component units, which can be found at http://www.phila.gov/investor/CAFR.html.

Financial Analysis

Net Position

A three year condensed summary of the Water Department's net position as of June 30 of each year is presented as follows:

Condensed Statement of Net Position
(Thousands of Dollars)
June 30

	2014	2013	2012*
Assets:			
Current Assets	$ 230,330	$ 243,123	$ 233,512
Capital Assets	2,070,492	2,019,350	1,938,001
Restricted Assets	690,596	526,249	631,960
Total Assets	2,991,418	2,788,722	2,803,473
Deferred Outflows of Resources	66,586	73,865	12,018
Total Assets and Deferred Outflows	3,058,004	2,862,587	2,815,491
Liabilities:			
Current Liabilities	214,671	211,872	200,381
Bonds Payable	1,809,952	1,702,895	1,698,122
Other Non-Current Liabilities	62,898	49,732	51,668
Total Liabilities	2,087,521	1,964,499	1,950,171
Net Position:			
Net Investment in Capital Assets	336,980	351,160	243,997
Restricted	506,669	472,310	439,084
Unrestricted	126,834	74,618	182,239
Total Net Position, as Restated	$ 970,483	$ 898,088	$ 865,320

*Fiscal Year 2012 was not restated for GASB Statement No. 65.

The Water Department's net position at June 30, 2014 was approximately $970.5 million, a $72.4 million or 8.1% increase from June 30, 2013. Total assets and deferred outflows of resources increased by $195.4 million, or 6.8%, to $3.1 billion, and total liabilities increased $123.0 million, or 6.3%, to $2.1 billion.

The following is a discussion of the more significant changes in assets and deferred outflows of resources, liabilities, and net position in fiscal year 2014:

- Capital assets, net of depreciation and amortization, increased by $51.1 million to $2.1 billion, or 2.5% as a result of capital additions of $314.6 million, offset by depreciation of $90.5 million and retirements of $173.0 million.
- Current assets decreased by $12.8 million to $230.3 million, or 5.3%, due to decreases in cash, investments, and net accounts receivables.

- Restricted assets increased by $164.3 million to $690.6 million, or 31.2%, due to increases in the Water Capital Fund primarily due to the bond issuance in August 2013 and January 2014.

- Deferred outflows of resources decreased by $7.3 million to $66.6 million, or 9.9%, due to decreases in the fair market value of the Water Funds hedging instrument and amortization of the unamortized loss on refunded debt.

- Current liabilities increased by $2.8 million to $214.7 million, or 1.3%, primarily due to an increase in accrued expenses and other components offset by reductions in construction contracts payable.

- Bonds payable increased by $107.1 million to $1.8 billion, or 6.3%, primarily due to the bond issuances in August of 2013 and January of 2014 offset by the maturing principal of $225.1 million during the year.

- Other non-current liabilities increased by $13.2 million to $62.9 million, or 26.5%, primarily due to an increase in the net pension obligation of $17.7 million offset by decreases in the other non-current liabilities and derivative instrument liability.

- The Water Department's net position increased by $72.4 million to $970.5 million, or 8.1%, as a result of fiscal year 2014 operations and capital contributions.

- Net investment in capital assets decreased by $14.2 million, or 4.0%, to $337.0 million.

- Unrestricted net position increased by $52.2 million, or 70.0%, to $126.8 million. The unrestricted component of net position represents the net amount of total assets, deferred outflows of resources, and total liabilities that are not included in the determination of net investment in capital assets or restricted components of net position.

Changes in Net Position

A condensed summary of the Water Department's Statement of Revenues, Expenses, and Changes in Net Position for the years ended June 30 is presented as follows:

Condensed Statement of Revenues, Expenses, and Changes in Net Position
(Thousands of Dollars)
Year Ended June 30

	2014	2013	2012*
Operating Revenues:			
Charges for Goods and Services	$ 630,429	$ 600,156	$ 591,571
Miscellaneous Operating Revenues	8,146	8,547	6,749
Operating Grants	1,399	2,285	3,481
Total Operating Revenues	639,974	610,988	601,801
Operating Expenses:			
Operating Expenses excluding Depreciation and Amortization	354,686	345,409	300,829
Depreciation and Amortization	90,523	89,045	92,113
Total Operating Expenses	445,209	434,454	392,942
Operating Income (Loss)	194,765	176,534	208,859
Nonoperating Revenues (Expenses):			
Federal, State, & Local Grants	-	880	479
Interest Income	4,207	12,079	3,334
Net Pension Obligation	(17,712)	2,839	(11,259)
Debt Service – Interest	(77,561)	(80,146)	(85,374)
Other Expenses	(2,971)	(1,665)	(1,243)
Total Nonoperating Revenues (Expenses)	(94,037)	(66,013)	(94,063)
Increase in Net Position before Transfers	100,728	110,521	114,796
Transfers Out	(28,333)	(21,380)	(27,460)
Change in Net Position	72,395	89,141	87,336
Net Position – Beginning of Period	898,088	808,947	777,984
Net Position – Ending of Period	$ 970,483	$ 898,088	$ 865,320

*Fiscal Year 2012 was not restated for GASB Statement No. 65.

Operating revenues increased by $29.0 million to $640.0 million due to increased revenue from a typical bill increase of 5.8% in fiscal year 2014.

Operating expenses increased by $10.8 million to $445.2 million due to increased costs for personnel services, purchase of services, materials and supplies, partially offset by lower expenses for employee benefits.

Non-operating expenses increased by $28.0 million to $94.0 million. The increase in non-operating expenses is due to the net pension obligation expense increase of $20.6 million and the interest income decrease of $7.9 million.

Capital Assets and Debt Administration

Capital Assets

The Water Department's investment in capital assets, net of accumulated depreciation, amounted to $2.07 billion as of June 30, 2014. This represented an increase of $51.1 million, or 2.5% over the previous year's total of $2.02 billion. Capital assets consist primarily of land, infrastructure, construction in progress, buildings, and equipment. Infrastructure consists of water and wastewater transmission and distribution lines. The following is a summary of capital assets as of June 30:

Capital Asset Activity
(Thousands of Dollars)
June 30

	2014	2013	2012
Land	$ 5,919	$ 5,919	$ 5,919
Construction in Progress	361,592	373,844	314,162
Infrastructure	2,269,015	2,167,639	2,087,956
Buildings and Equipment	1,623,520	1,591,073	1,572,818
Accumulated Depreciation	(2,189,554)	(2,119,125)	(2,042,854)
Total Capital Assets, net	$ 2,070,492	$ 2,019,350	$ 1,938,001

Long-Term Debt

As of June 30, 2014, the Water Department had $1.87 billion of non-current liabilities outstanding. This was an increase of $120.2 million or 6.9% from the previous year. The following is a summary of the non-current liability outstanding as of June 30:

Non-Current Liability Activity
(Thousands of Dollars)
June 30

	2014	2013	2012
Revenue Bonds – Net	$ 1,809,952	$ 1,702,895	$ 1,698,122
Derivative Instrument	5,711	8,565	12,018
Other Non-Current Liabilities	30,514	32,205	27,849
Net Pension Obligation	26,673	8,962	11,801
Total Non-Current Liabilities	$ 1,872,850	$ 1,752,627	$ 1,749,790

The following details activity to debt during 2014:

	(Thousands of Dollars)
Beginning balance at July 1, 2013	$ 1,830,387
Debt issued	345,096
Less principal payments and amortization	(240,231)
Ending balance at June 30, 2014	$ 1,935,252

More detailed information concerning long-term debt activity and capital asset activity is disclosed in Note 14 and Note 5, respectively, of the financial statements.

Budgetary Highlights

Please see the supplementary Budgetary Comparison Schedule located in the Required Supplementary Information section.

Requests for Information

This financial report is designed to provide a general overview of the City of Philadelphia Water Department's finances for all interested parties. Questions concerning any of the information provided in this report, or requests for additional information, should be addressed to the Philadelphia Water Department, Finance Division, Aramark Tower, 5th Floor, 1101 Market Street, Philadelphia, Pennsylvania 19107.

STATEMENTS OF NET POSITION
JUNE 30, 2014 AND 2013 (Thousands of Dollars)

	June 30 2014	June 30 2013
ASSETS:		
Current Assets:		
Cash on Deposit and on Hand	$ 30	$ 30
Equity in Treasurer's Account	71,136	82,494
Due from Other Governments	176	76
Accounts Receivable	164,042	160,060
Allowance for Doubtful Accounts	(18,629)	(13,661)
Inventories	13,423	13,799
Receivables	152	325
Total Current Assets	230,330	243,123
Noncurrent Assets:		
Restricted Assets:		
Equity in Treasurer's Account	470,740	313,927
Sinking Funds and Reserves	219,013	210,990
Grants for Capital Purposes	-	252
Receivables	843	1,080
Total Restricted Assets	690,596	526,249
Capital Assets:		
Land	5,919	5,919
Infrastructure	2,269,015	2,167,639
Construction in Progress	361,592	373,844
Buildings and Equipment	1,623,520	1,591,073
Accumulated Depreciation	(2,189,554)	(2,119,125)
Total Capital Assets	2,070,492	2,019,350
Total Noncurrent Assets	2,761,088	2,545,599
Total Assets	**2,991,418**	**2,788,722**
DEFERRED OUTFLOWS OF RESOURCES:		
Deferred Outflow - Fin. Instruments	5,711	8,565
Unamortized Loss - Refunded Debt	60,875	65,300
Total Deferred Outflows of Resources	**66,586**	**73,865**
LIABILITIES:		
Current Liabilities:		
Vouchers Payable	8,230	6,763
Accounts Payable	11,664	12,655
Salaries & Wages Payable	4,819	4,187
Construction Contracts Payable	22,783	27,530
Accrued Expenses	27,477	23,812
Due to Other Components	3,607	-
Unearned Revenue	8,923	7,531
Funds Held in Escrow	1,868	1,902
Current Portion of Long Term Obligations	125,300	127,492
Total Current Liabilities	214,671	211,872
Noncurrent Liabilities:		
Bond Payable - Net	1,809,952	1,702,895
Derivative Instrument Liability	5,711	8,565
Other Noncurrent Liabilities	30,514	32,205
Net Pension Liability	26,673	8,962
Total Noncurrent Liabilities	1,872,850	1,752,627
Total Liabilities	**2,087,521**	**1,964,499**
NET POSITION:		
Net Investment in Capital Assets	336,980	351,160
Restricted For:		
Capital Projects	102,860	99,856
Debt Service	219,013	210,990
Rate Stabilization	184,796	161,464
Unrestricted	126,834	74,618
Total Net Position	**$ 970,483**	**$ 898,088**

The accompanying notes are an integral part of the financial statements.

STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
FOR FISCAL YEAR ENDED JUNE 30, 2014 AND 2013

(Thousands of Dollars)

	Year Ended June 30 2014	2013
Operating Revenues:		
Charges for Goods and Services	$ 630,429	$ 600,156
Miscellaneous Operating Revenues	8,146	8,547
Operating Grants	1,399	2,285
Total Operating Revenues	639,974	610,988
Operating Expenses:		
Personal Services	112,820	110,784
Purchase of Services	90,611	88,395
Materials and Supplies	43,453	38,409
Employee Benefits	102,623	104,713
Indemnities and Taxes	5,179	3,108
Depreciation and Amortization	90,523	89,045
Total Operating Expenses	445,209	434,454
Operating Income	194,765	176,534
Nonoperating Expenses:		
Federal, State, & Local Grants	-	880
Interest Income	4,207	12,079
Net Pension Obligation	(17,712)	2,839
Debt Service - Interest	(77,561)	(80,146)
Other Expenses	(2,971)	(1,665)
Total Nonoperating Expenses	(94,037)	(66,013)
Increase in Net Position before Transfers	100,728	110,521
Transfers Out	(28,333)	(21,380)
Change in Net Assets	72,395	89,141
Net Position - Beginning of Year	898,088	865,320
Adjustment (Note 23)	-	(56,373)
Net Position - End of Year	**$ 970,483**	**$ 898,088**

CITY OF PHILADELPHIA WATER DEPARTMENT

STATEMENTS OF CASH FLOWS
FOR FISCAL YEAR ENDED JUNE 30, 2014 AND 2013

(Thousands of Dollars)

	Year Ended June 30 2014	2013
Cash Flows from Operating Activities:		
Receipts from Customers	$ 640,819	$ 602,342
Payments to Suppliers	(130,852)	(129,513)
Payments to Employees	(216,574)	(208,891)
Claims Paid	(5,179)	(5,090)
Net Cash Provided by Operating Activities	**288,214**	**258,848**
Cash Flows from Non-Capital Financing Activities:		
Operating Grants Received	1,649	2,285
Operating Subsidies and Transfers to Other Funds	(31,322)	(21,380)
Net Cash Used by Non-Capital Financing Activities	**(29,673)**	**(19,095)**
Cash Flows from Capital & Related Financing Activities:		
Proceeds from Capital Debt	229,204	97,860
Capital Contributions Received	-	628
Acquisition and Construction of Capital Assets	(142,039)	(153,388)
Interest Paid on Capital Debt	(74,701)	(76,180)
Principal Paid on Capital Debt	(127,009)	(207,220)
Net Cash Used by Non-Capital Financing Activities	**(114,545)**	**(338,300)**
Cash Flows from Investing Activities:		
Interest and Dividends	1,459	(63,653)
Net Cash Provided by (Used in) Investing Activities	1,459	(63,653)
Net Increase (Decrease) in Cash & Cash Equivalents	145,455	(162,200)
Balances - Beginning of the Year	396,451	558,651
Balances - End of the Year	**$ 541,906**	**$ 396,451**
Reconciliation of Operating Income to Net Cash Provided by Operating Activities:		
Operating Income	194,765	176,534
Adjustments to Reconcile Operating Income to Net Cash Provided (Used) by Operating Activities:		
Depreciation Expense	90,523	89,045
Change in Assets and Liabilities:		
Receivables, Net	(547)	(9,551)
Inventories	376	(343)
Accounts and Other Payables	3,396	(4,134)
Accrued Expenses	(1,691)	6,392
Unearned Revenue	1,392	905
Net Cash Provided by Operating Activities	**$ 288,214**	**$ 258,848**
Reconciliation of Cash and Cash Equivalents to Statement of Net Position		
Cash on Deposit and on Hand	30	30
Equity in Treasurer's Account - Current Portion	71,136	82,494
Equity in Treasurer's Account - Noncurrent Portion	470,740	313,927
Total Cash and Cash Equivalents	**$ 541,906**	**$ 396,451**

NOTE 1: REPORTING ENTITY

The City of Philadelphia was founded in 1682 and was merged with the county in 1854. The City of Philadelphia, Pennsylvania (the "City" or "Philadelphia"), was incorporated in 1789 by an Act of the General Assembly of the Commonwealth of Pennsylvania (the "Commonwealth") (predecessors of the City under charters granted by William Penn in his capacity as proprietor of the colony of Pennsylvania may date to as early as 1684). In 1854, the General Assembly of the Commonwealth, by an act commonly referred to as the Consolidation Act, made the City's boundaries coterminous with the boundaries of Philadelphia County (the same boundaries that exist today) (the "County"), abolished all governments within these boundaries other than the City and the County and consolidated the legislative functions of the City and the County. Article 9, Section 13 of the Pennsylvania Constitution abolished all county offices in the City and provides that the City performs all functions of county government and that laws applicable to counties apply to the City.

Since 1952, the City has been governed under a Home Rule Charter authorized by the General Assembly of the Commonwealth (First Class City Home Rule Act, Act of April 21, 1949, P.L. 665, Section 17) and adopted by the voters of the City. The Home Rule Charter, as amended and supplemented to this date, provides, among other things, for the election, organization, powers and duties of the legislative branch (the "City Council"); the election, organization, powers and duties of the executive and administrative branch; and the basic rules governing the City's fiscal and budgetary matters, contracts, procurement, property and records. The Home Rule Charter, as amended, also provides for the governance of the School District of Philadelphia (the "School District") as a home rule school district. Certain other constitutional provisions and Commonwealth statutes continue to govern various aspects of the City's affairs, notwithstanding the broad grant of powers of local self-government in relation to municipal functions set forth in the First Class City Home Rule Act.

The City's Water Department supplies water and provides wastewater treatment services to residents of Philadelphia and portions of Bucks, Montgomery, and Delaware Counties, although over 90% of those served are residents of the City.

NOTE 1: REPORTING ENTITY (CONTINUED)

There are two principal governmental entities in Philadelphia: (1) the City of Philadelphia, which performs both the ordinary Municipal functions and the traditional County functions; and the School District of Philadelphia, which is part of the Public Education System of the Commonwealth of Pennsylvania. In addition to the School District of Philadelphia, there are a number of other governmental and quasi-governmental entities operating within the City. The financial statements as set forth herein present only the operations of the City of Philadelphia Water Department (“Water Department”) that is a Department of the City and is included in the financial statements of the City.

The Philadelphia Water Department serves the Greater Philadelphia region by providing an integrated water, wastewater, and stormwater system. The utility's primary mission is to plan for, operate and maintain both the infrastructure and the organization necessary to purvey high quality drinking water, to provide an adequate and reliable water supply for all household, commercial, and community needs, and to sustain and enhance the region's watersheds and quality of life by managing wastewater and stormwater effectively. In fulfilling its mission, the utility seeks to be customer-focused, delivering services in a fair, equitable, and cost-effective manner, with a commitment to public involvement. Having already served the City and region for nearly two centuries, the utility's commitment for the future includes an active role in the economic development of Greater Philadelphia and a legacy of environmental stewardship.

In order to accomplish its mission and pursuant to the Philadelphia Home Rule Charter, the Water Department has the power and duty to operate, maintain, repair and improve the City’s water and wastewater systems. The Water Department is managed by a Commissioner who is appointed by the City’s Managing Director with the approval of the Mayor.

The operations of the activity of the Water Department are accounted for with a separate set of balancing accounts that comprise its assets, liabilities, and net position, revenues and expenses. The activity of the Water Department is grouped in the financial statements into the broad category referred to as an enterprise fund. Such activities are used to account for operations (1) that are financed and operated in a manner similar to private business enterprises – where the intent of the Government Body is that costs (expenses, including depreciation) of providing goods and services to the general public on a continuous basis be recovered primarily through user charges or (2) where the Government Body has decided that periodic determination of revenues earned, expenses occurred, and/or net income is appropriate for capital maintenance, public policy, management’s control of accountability, and other purposes.

The activities of the Water Department are segregated as follows:

- The Operating Fund is used to account for the operations of the water and waste water systems.

- The Revenue Bond Sinking Fund is used to account for the payment of interest of the outstanding debt.

NOTE 1: REPORTING ENTITY (CONTINUED)

- The Debt Reserve Fund shall be funded from the proceeds of each series of Water and Wastewater Revenue Bonds; provided, however, that if the Supplemental Ordinance authorizing a series of Water and Wastewater Revenue Bonds shall so authorize, the deposit to the Debt Reserve Account in respect of such Water and Wastewater Revenue Bonds may be accumulated from project revenues over a period of not more than three fiscal years after the issuance and delivery of such Water and Wastewater Revenue Bonds. The moneys and investments in the Debt Reserve Account shall be held and maintained in an amount equal at all times to the Debt Reserve Requirement. If at any time the moneys in the Debt Service Account of the Sinking Fund shall be insufficient to pay as and when due the principal of (and premium, if any) or interest on any Water and Wastewater Revenue Bonds or other obligations payable from the Debt Service Account (including obligations arising in connection with Qualified Swap Agreements and Credit Facilities), the fiscal agent is required to pay over from the Debt Reserve Account the amount of such deficiency for deposit in the Debt Service Account. With respect to any issue of Water and Wastewater Revenue Bonds, in lieu of the required deposit into the Debt Reserve Account, the City may cause to be deposited into the Debt Reserve Account a surety bond, an insurance policy or an irrevocable letter of credit meeting the requirements of the General Ordinance and the Bond Committee Determination relating to such issue.

  The Debt Reserve Account Amendment authorizes (i) the Director of Finance to apply moneys currently on deposit in the Debt Reserve Account to purchase a surety bond or insurance policy complying with the terms of the General Ordinance (described below), (ii) the transfer of the resulting excess moneys in the Debt Reserve Fund to the Revenue Fund and from there, upon compliance with the provisions of the General Ordinance to a new account in the Residual Fund called the Special Water Infrastructure Account and (iii) the application of the moneys deposited in the Special Water Infrastructure Account to the cost of renewals, replacements and improvements to the water and wastewater systems.

- The Rate Stabilization Fund was created with the sale of the Series 1993 Revenue Bonds on August 20, 1993. The purpose of the Fund is to maintain assets to be drawn down to offset future deficits (and corresponding rate increase requirements) in the Water Department Operating Fund.

  During Fiscal 2014 the fund had the following activity:

Balance at July 1, 2013	$161,463,768
Deposit from Operating Fund	22,924,772
Interest Earnings	407,041
Deposit to Operating Fund	-
Balance at June 30, 2014	$184,795,581

NOTE 1: REPORTING ENTITY (CONTINUED)

During Fiscal 2013 the fund had the following activity:

Balance at July 1, 2012	$165,906,600
Deposit from Operating Fund	-
Interest Earnings	223,120
Deposit to Operating Fund	(4,665,952)
Balance at June 30, 2013	$161,463,768

- The Residual Fund was created with the sale of the Series 1993 Revenue Bonds on August 20, 1993. The purpose of the Fund is to maintain the remaining assets after payment of all operating expenses, payment of all debt service obligations including payments under a swap agreement, scheduled transfers to the Rate Stabilization Fund, and required deposits to the Capital Account of the Construction Fund.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements include all funds which are controlled by the Philadelphia Water Department. The financial statements have been prepared in accordance with Generally Accepted Accounting Principles as they apply to governmental units. The Governmental Accounting Standards Board (GASB) of the American Institute of Certified Public Accountants is the accepted standard setting body for establishing governmental accounting and financial reporting principles. The following is a summary of the significant accounting policies.

A. Basis of Accounting

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and deferred outflows of resources, liabilities, and net position and disclosures at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of timing of related cash flows. Grants and similar items are recognized as revenues as soon as all eligibility requirements imposed by the provider have been met.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

A. Basis of Accounting (Continued)

Operating revenues and expenses are distinguished from non-operating items in the statement of revenues, expenses and changes in net position. Operating revenues and expenses result from providing services in connection with the Water Department's principle ongoing operations. Principal operating revenues of the Water Department are charges to customers for water use and watershed collection, transmission and treatment. When calculating user fees charged to customers, the Water Department includes a component for the repayment of principal on the Water Department's outstanding debt. Operating expenses include the cost of providing water and watershed services, administrative expenses and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses. The principal non-operating revenues of the Water Department are interest and grants. The principal non-operating expenses of the Water Department include interest expense and pension expense.

B. Capital Assets

Capital assets are defined by the City as assets with an initial individual cost of more than $5,000 and an estimated useful life in excess of three years. The expenses are reported at cost including any liability for contract retainage and construction costs payable.

Contributed assets are carried at estimated market value at the time of contribution. Depreciation is determined using the straight-line method over their estimated useful lives as follows:

Computer equipment	3 years
Automotive	5 years
Leasehold Improvements	8 years
General and monitoring equipment	10-20 years
Buildings	40 years
Reconstructed transmission and distribution lines	40 years
New transmission and distribution lines	50 years

Normal maintenance and repairs are charged to operations as incurred. Renewals and betterments are capitalized and depreciated based upon the expected life of such improvements.

Cost of construction includes all direct contract costs plus overhead charges. Overhead costs include direct and indirect engineering costs and interest incurred during the construction period on projects financed with revenue bond proceeds. Interest is capitalized by applying the average financing rate during the year to construction costs incurred. Interest earnings on bond proceeds reduce the amount capitalized. Capitalization of interest during construction for fiscal year 2014 was $3,926,863 and for fiscal year 2013 was $12,951,027.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

C. Bond Discount

Bond discounts are deferred and amortized by the bonds outstanding method, which appropriates the interest method. For financial reporting purposes, bond discounts and premiums are offset against bonds payable.

D. Inventories

The materials and supplies inventory is priced using the “moving average cost” method.

E. Deferred Refunding Loss

The accounting loss incurred by the Water Department related to the refunding of certain bonds is deferred and amortized over the life of the original bond or the refunded bonds whichever is shorter.

F. Accounts Receivables

Accounts receivable consist of billed retail and wholesale water and sewer charges that have not been collected as of June 30. The Water Department evaluates the collection of individual account balances and if necessary, records an allowance for doubtful accounts. The Water Department’s policy is to file a lien against the respective property for delinquent water, sewer, and storm water customers. The Water Department’s policy regarding its water customers is to discontinue services for those that refuse to pay, but only as a last resort. As of June 30, 2014 and 2013 the allowance for doubtful accounts was $18,629,063 and $13,660,860 respectively.

G. Unbilled Revenue

The Water Department bills residential water and sewer customers on a monthly basis and wholesale water and sewer customers on a monthly basis. Revenue earned for services provided through June 30 but unbilled is included in accounts receivable on the accompanying financial statements.

H. Insurance

The City, except for the Airport and certain other properties, is self-insured for most fire and casualty losses to its structures and equipment and provides statutory workers’ compensation, unemployment benefits, and health and welfare to its employees through a self-insured plan. Construction contractors are required to carry protective general liability insurance indemnifying the City and the Contractor.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

I. Cash and Investments

The Water Department's cash and investments are held in segregated operating and capital accounts. Sinking funds and reserves are maintained in segregated investment accounts to comply with reserve and other requirements of the bond covenants.

All highly liquid investments (except for Repurchase Agreements) with a maturity of three months or less when purchased are considered to be cash equivalents.

The investments of the City are reported at fair value. Short-term investments are reported at cost, which approximates fair value. Securities traded on national or international exchanges are valued at the last reported sales price. The fair value of real estate investments is based on independent appraisals. Investments, which do not have an established market, are reported at estimated fair value.

Statutes authorize the City to invest in obligations of the Treasury, agencies, and instruments of the United States, repurchase agreements, collateralized certificates of deposit, bank acceptance or mortgage obligations, certain corporate bonds, and money market funds.

J. Restricted Assets

Restricted assets represent revenues set-aside for liquidation of specific obligations, as detailed in Note 8.

K. Unearned Revenues

Unearned revenues represent funds received in advance of being earned. In the Water Department, unearned revenues relate principally to over paid water and sewer bills.

L. Payment to City

In accordance with an agreement between the Finance Director and the Water Department, the Finance Director may transfer to the General Fund up to a limit of $4,994,000 in any fiscal year in "excess interest earnings" as defined by the Rate Covenants under the Ordinance. In fiscal year 2014 and 2013, excess interest earnings of $400,364 and $560,156, respectively, were transferred to the General Fund of the City.

M. Transfers for Long Term Contracts

In addition to the transfer of funds to the General Fund of the City, the Water Department had operating transfers of $27,932,268 and $20,819,479 in fiscal year 2014 and 2013, respectively, to the Philadelphia Municipal Authority ("PMA") for the long-term contracts described in Note 19 A, B, and C.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

N. Net Position

The basic financial statements utilize the net position presentation, net position is categorized as net investment in capital assets, restricted, and unrestricted.

- *Net Investment in Capital Assets* – This category is intended to reflect the portion of net position that is allocated with non-liquid capital assets, less outstanding capital asset related debt.
- *Restricted Net Position* – This category represents external restrictions imposed by creditors, grantors, contributors, laws and regulations of other governments, and restrictions imposed by law through constitutional provisions or enabling legislation.
- *Unrestricted Net Position* – This category represents net position of the Water Department, not restricted for any project or other purpose.

When both restricted and unrestricted resources are available for use, it is the City's policy to use restricted resources first, then unrestricted resources as they are needed.

O. Deferred Outflows / Inflows of Resources

In addition to assets, the statement of net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to future period(s) and so will not be recognized as an outflow of resources (expense) until then. The Water Department has two items that qualify for reporting in this category. The statement of net position reports a deferred loss on refunded debt and the change in fair value of a hedging derivative instrument.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The Water Department does not have an item that qualified for reporting in this category.

P. Accounting Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

Q. Reclassifications

For comparative purposes, certain prior year financial statement amounts have been reclassified to conform to current year presentation. The reclassification had no effect on net position.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

R. Adoption of Governmental Accounting Standards Board Statements

The Water Department adopted the requirements of GASB Statement No. 66, *"Technical Corrections – 2012 – an amendment of GASB Statements No. and No. 62."* The adoption of this statement had no effect on previously reported amounts.

The Water Department adopted the requirements of GASB Statement No. 67 "*Financial Reporting for Pension Plans – an amendment of GASB Statement No. 25"*. The adoption of this statement has no effect on the previously reported amounts.

The Water Department adopted the requirements of GASB Statement No. 70, "*Accounting and Financial Reporting for Nonexchange Financial Guarantees"*. The adoption of this statement had no effect on previously reported amounts.

S. Pending Changes in Accounting Principles

In June 2012, the GASB issued a Statement No. 68, *"Accounting and Financial Reporting for Pensions– an amendment of GASB Statement No. 27"*. The Water Department is required to adopt statement No. 68 for its fiscal year 2015 financial statements.

In January 2013, the GASB issued a Statement No. 69, "*Government Combinations and Disposals of Government Operations"*. The Water Department is required to adopt statement No. 69 for its fiscal year 2015 financial statements.

In November 2013, the GASB issued a Statement No. 71, "*Pension Transition for Contributions Made Subsequent to the Measurement Date – an amendment of GASB Statement No. 68*". The Water Department is required to adopt statement No. 71 for its fiscal year 2015 financial statements.

The Water Department has not yet completed the various analyses required to estimate the financial statement impact of these new pronouncements.

NOTE 3: DEPOSITS AND INVESTMENTS

A. Deposits

State statutes require banks to collateralize City deposits at amounts equal to or in excess of the City's balance. Such collateral is to be held by the Federal Reserve Bank or the trust department of a commercial bank other than the pledging bank. At June 30, 2014 and June 30, 2013, all of the collateralized securities were held in the City's name except for $106 million and $121 million, respectively, which was collateralized but held in the pledging institution's name.

NOTE 3: DEPOSITS AND INVESTMENTS (CONTINUED)

B. Investments

The City has established a comprehensive investment policy. To minimize custodial credit risk for investments, the City's policy is to select custodian banks that are members of the Federal Reserve System to hold its investments. Delivery of the applicable investment documents to the City's custodian is required for all investments.

As of June 30, 2014 the fair values of the Water Department's investments consist of the following:

	(Thousands of Dollars)	
Classifications	**Fair Value**	**Percent of Total**
U.S. Government Securities	$ 370,176	74.91%
U.S. Government Agency Securities	98,400	19.91%
Corporate Bonds	11,313	2.29%
Other Bonds and Investments	14,300	2.89%
Grand Total	$ 494,189	100.00%

As of June 30, 2013, the fair values of the Water Department's investments consist of the following:

	(Thousands of Dollars)	
Classifications	**Fair Value**	**Percent of Total**
U.S. Government Securities	$ 336,277	80.84%
U.S. Government Agency Securities	43,542	10.46%
Corporate Bonds	30,025	7.22%
Other Bonds and Investments	6,149	1.48%
Grand Total	$ 415,993	100.00%

Interest Rate Risk: The City's investment portfolio is managed to accomplish preservation of principal, maintenance of liquidity, and to maximize the return on investments. To limit its exposure to fair value losses from rising interest rates, the City's investment policy limits investments to maturities of no longer than 2 years.

NOTE 3: DEPOSITS AND INVESTMENTS (CONTINUED)

B. Investments (Continued)

As of June 30, 2014 the maturities of the Water Department's investments were as follows:

	(Thousands of Dollars)	
Classifications	**Less Than 1 Year**	**1 - 2 Years**
U.S. Government Securities	$ 260,368	$ 109,808
U.S. Government Agency Securities	49,071	49,329
Corporate Bonds	11,313	-
Other Bonds and Investments	6,266	8,034
Grand Total	$ 327,018	$ 167,171

As of June 30, 2013 the maturities of the Water Department's investments were as follows:

	(Thousands of Dollars)	
Classifications	**Less Than 1 Year**	**1 - 2 Years**
U.S. Government Securities	$ 187,315	$ 148,962
U.S. Government Agency Securities	5,953	37,589
Corporate Bonds	26,089	3,936
Other Bonds and Investments	6,149	-
Grand Total	$ 225,506	$ 190,487

Credit Risk: The City's policy to limit credit risks is to invest in US Government securities (12.86%) or US Government Agency obligations (4.80%). The US Government Agency obligations must be rated AAA by Standard & Poor's Corp. ("S&P") or Aaa by Moody's Investor Services ("Moody's"). All US Government Securities meet the criteria. The City's investment in Commercial Paper (4.21%) must be rated A1 by S&P and/or M1G1 by Moody's and the senior long-term debt of the issuer must not be rated lower than A by S&P and/or Moody's. Commercial Paper is also limited to 25% of the portfolio. All commercial paper investments meet the criteria. Of the corporate bonds held by the City, 9.94% had a S&P rating of AAA to AA. Cash accounts are swept nightly and idle cash invested in money market funds (short term investment pools). Short Term Investment Pools are rated AAA by S&P and Aaa by Moody's. The Short Term Investment Pools' fair value is the same as the value of the pool shares. The City limits its foreign currency risk by investing in certificates of deposits and banker's acceptances issued or endorsed by non-domestic banks that are denominated in US dollars, providing that the banking institution has assets of not less than $100 million and has a Thompson's Bank Watch Service "Peer Group Rating" not lower than II. At the end of the fiscal year, the City did not have any investments of that nature.

NOTE 4: ACCOUNTS RECEIVABLE

Balances of accounts receivable and allowance for doubtful accounts consisted of the following:

FISCAL YEAR ENDED JUNE 30, 2014

Accounts Receivable:		
Billed in the Last Twelve Months	$	138,553,005
Billed in 15-year Cycle Billing		-
Penalties on Receivables		13,992,499
Other Receivables		11,496,268
Total	$	164,041,772
Bad Debts Written Off	$	36,402,784
Allowance for Doubtful Accounts	$	18,629,063

FISCAL YEAR ENDED JUNE 30, 2013

Accounts Receivable:		
Billed in the Last Twelve Months	$	112,392,541
Billed in 15-year Cycle Billing		-
Penalties on Receivables		33,165,628
Other Receivables		14,502,308
Total	$	160,060,477
Bad Debts Written Off**	$	125,750,066
Allowance for Doubtful Accounts:		
Billed in the Last Twelve Months	$	2,470,849
Billed in 15-year Cycle Billing		6,436,465
Penalties on Receivables		4,753,546
Other Receivables		-
Total	$	13,660,860

**During FY 2013, a proposal was presented and accepted by the City's Accounts Review Panel to write off aged receivables over one year old.

NOTE 5: PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment at June 30, 2014 and 2013 consisted of the following:

	Beginning Balance	Additions	Dispositions	Ending Balance
Fiscal Year Ended June 30, 2014				
Capital Assets Not Being Depreciated				
Land	$ 5,919,160	$ -	$ -	$ 5,919,160
Construction in Progress	373,844,154	140,968,008	(153,220,212)	361,591,950
Total Capital Assets Not Being Depreciated	$ 379,763,314	$ 140,968,008	$ (153,220,212)	$ 367,511,110
Capital Asssets Being Depreciated				
Buildings and related improvements	1,517,587,479	44,662,033	(10,269,725)	1,551,979,787
Intangible Assets	12,234,866	738,640	-	12,973,506
Equipment	73,485,553	20,255,147	(22,200,434)	71,540,266
Infrastructure	2,155,403,733	107,998,169	(7,360,430)	2,256,041,472
Total Capital Assets Being Depreciated	$ 3,758,711,631	$ 173,653,989	$ (39,830,589)	$ 3,892,535,031
Less Accumulated Depreciation For:				
Buildings and related improvements	(888,398,708)	(41,711,939)	7,267,028	(922,843,619)
Intangible Assets	(6,129,171)	(1,260,419)	-	(7,389,590)
Equipment	(65,974,792)	(2,723,579)	5,466,741	(63,231,630)
Infrastructure	(1,158,622,726)	(44,826,982)	7,360,430	(1,196,089,278)
Total Accumulated Depreciation	(2,119,125,397)	(90,522,919)	20,094,199	(2,189,554,117)
Total Capital Assets, Being Depreciated, Net	1,639,586,234	83,131,070	(19,736,390)	1,702,980,914
Total Capital Assets	$ 2,019,349,548	$ 224,099,078	$ (172,956,602)	$ 2,070,492,024

	Beginning Balance	Additions	Dispositions	Ending Balance
Fiscal Year Ended June 30, 2013				
Capital Assets Not Being Depreciated				
Land	$ 5,919,160	$ -	$ -	$ 5,919,160
Construction in Progress	314,162,257	63,795,220	(4,113,323)	373,844,154
Total Capital Assets Not Being Depreciated	$ 320,081,417	$ 63,795,220	$ (4,113,323)	$ 379,763,314
Capital Asssets Being Depreciated				
Buildings and related improvements	1,502,631,913	19,703,244	(4,747,678)	1,517,587,479
Intangible Assets	11,414,581	820,285	-	12,234,866
Equipment	70,186,353	20,219,282	(16,920,082)	73,485,553
Infrastructure	2,076,541,650	86,819,904	(7,957,821)	2,155,403,733
Total Capital Assets Being Depreciated	$ 3,660,774,497	$ 127,562,715	$ (29,625,581)	$ 3,758,711,631
Less Accumulated Depreciation For:				
Buildings and related improvements	(852,672,838)	(40,473,548)	4,747,678	(888,398,708)
Intangible Assets	(4,946,699)	(1,182,472)	-	(6,129,171)
Equipment	(64,047,323)	(2,670,465)	742,996	(65,974,792)
Infrastructure	(1,121,187,009)	(44,718,881)	7,283,164	(1,158,622,726)
Total Accumulated Depreciation	(2,042,853,869)	(89,045,366)	12,773,838	(2,119,125,397)
Total Capital Assets, Being Depreciated, Net	1,617,920,628	38,517,349	(16,851,743)	1,639,586,234
Total Capital Assets	$ 1,938,002,045	$ 102,312,569	$ (20,965,066)	$ 2,019,349,548

NOTE 6: LEASES

The Water Department enters into various operating leases to finance the purchase of photocopier and computer equipment. Leases are defined by the Financial Accounting Standard Board in Statement 13, Accounting for Leases. Lease payments consisted of $1,848,062 in fiscal year 2014, and $1,514,466 in fiscal year 2013. The assets acquired through the leases are shown as equipment within the Capital Asset Note (See Note 5).

NOTE 7: IMPAIRED ASSETS

Government Accounting Standards Board (GASB) Statement 42 requires the disclosure of the impairment of any major capital assets. Over the years, there have been a number of the Water Department's assets that were either damaged or destroyed, were abandoned or became functionally obsolete.

One facility remains in service, which has become "functionally obsolescent", the portion of our Biosolids Recycling Center which performs composting. Composting of our sludge products was stopped in approximately March of 2007 as an interim solution to the air management problems that have occurred at this site. A permanent solution for sludge processing that does not involve composting is being utilized by the Water Department through the biosolids treatment and utilization plant operated by Philadelphia Biosolids Services, LLC (see Note 19). The Water Department's engineering division estimates the value of the compost facilities that are "functionally obsolescent" (which were built in conjunction with the remaining BRC facilities which will remain in service such as the mixing/receiving building, administrative offices and the dewatering facility) to be in the area of $20 million, including the value of any land acquisition and site preparation costs.

No asset impairments occurred during fiscal year 2014 and 2013.

NOTE 8: RESTRICTED ASSETS

Assets whose use is limited to a specific purpose have been classified as "restricted" in the Statement of Fund Net Position. Restricted assets as of June 30, 2014, are comprised of the following:

	(Thousands of Dollars) Cash and Investments	Accrued Interest
Amounts Reserved for:		
Capital Projects	$ 260,834	$ 505
Rate Stabilization	184,631	165
Residual	25,275	-
Debt Service	219,013	173
Total	$ 689,753	$ 843

NOTE 8: RESTRICTED ASSETS (CONTINUED)

Restricted assets as of June 30, 2013, are comprised of the following:

	(Thousands of Dollars)		
	Cash and Investments	**Accrued Interest**	**Grants Receivable**
Amounts Reserved for:			
Capital Projects	$ 150,603	$ 286	$ 252
Rate Stabilization	161,239	225	-
Residual	2,085	2	-
Debt Service	210,990	567	-
Total	$ 524,917	$ 1,080	$ 252

NOTE 9: VACATION LEAVE

Employees are credited with vacation at rates which vary according to length of service. Vacation may be taken or accumulated up to certain limits until paid upon retirement or termination. Employees' vacation time accrued under Other Noncurrent Liabilities on the Statement of Net Position in Fiscal Year 2014 was $10,170,963 and in Fiscal Year 2013 was $9,972,902. The expense for vacation pay is recognized in the year earned.

NOTE 10: SICK LEAVE

Employees are credited with varying amounts of sick leave per year according to type of employee and/or length of service. Employees may accumulate unused sick leave to 200 days and union represented employees may convert up to 20 sick days per year to vacation days at a ratio of 2 for 1. Non-uniformed employees (upon retirement only) are paid 30% of unused sick time, not to exceed predetermined amounts. Employees, who separate for any reason other than indicated above, forfeit their entire sick leave. The City budgets for and charges the cost of sick leave as it is taken.

NOTE 11: ACCOUNTING FOR THE NEW RIVER CITY PROJECT FUNDS – WATER SINKING FUND RESERVE SUBSTITUTION

Pursuant to the Water Department's General Bond Ordinance, the Sinking Fund Reserve provides a reserve against default of the payment of principal and interest on Water Revenue Bonds when due.

NOTE 11: ACCOUNTING FOR THE NEW RIVER CITY PROJECT FUNDS – WATER SINKING FUND RESERVE SUBSTITUTION (CONTINUED)

The New River City Ordinance dated January 23, 2007 (Bill No 060005) authorized the purchase and deposit of a surety bond that meets the requirements of the General Ordinance to replace $67,000,000 of the Sinking Fund reserve Balance. The $67,000,000 will be used as follows:

Cost of the surety bond	$2,010,000
Legal and financial services	290,000
Management fees	375,000
Costs of certain water and sewer infrastructure components of the New River City Program	64,325,000
Total	$67,000,000

The prepaid surety bond was recorded as an asset in the Sinking Fund Reserve and amortized over the lives of the outstanding bonds.

In connection with the New River City Program, the Water Department executed a program agreement with Philadelphia Authority for Industrial Development ("PAID") to provide program management and oversight for the program. To date, twelve projects totaling $83,697,833 have been executed (disbursements were limited to the $64,325,000). As of June 30, 2014, all projects were completed and $1,963 of the project funds remains undisbursed. The transfer of the water and sewer utilities at Philadelphia Naval Business Center from PAID to the Water Department, including the projects outlined above, and occurred in November, 2009.

NOTE 12: DEFERRED COMPENSATION PLAN

The City offers its employees a deferred compensation plan in accordance with Internal Revenue Code section 457. As required by the Internal Revenue Code and Pennsylvania laws in effect at June 30, 2014, the assets of the plan are held in trust for the exclusive benefit of the participants and their beneficiaries. In accordance with GASB Statement No. 32, *Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans*, the City does not include the assets or activity of the plan in its financial statements.

NOTE 13: ARBITRAGE REBATE

The City has issued Water Revenue Bonds subject to Federal arbitrage requirements. Federal tax legislation requires the accumulated net excess of interest income on the proceeds of these issues over interest expense paid on the bonds be paid to the federal government at the end of a five-year period. The arbitrage liability was zero as of June 30, 2014 and 2013.

NOTE 14: DEBT PAYABLE

A summary of changes in long-term debt obligations as of June 30, 2014 follows:

(In Thousands)

	Beginning Balance	Additions	Reductions	Ending Balance	Amounts Due Within One Year
Water and Sewer Revenue Bonds	$ 1,620,275	$ 293,170	$ (215,385)	$ 1,698,060	$ 114,735
Pennvest Loans	139,504	23,577	(9,696)	153,385	10,565
Unamortized Bond Premium	70,608	28,349	(15,150)	83,807	-
Derivative Instrument Liability	8,565	-	(2,854)	5,711	-
Net Pension Liability	8,962	17,711	-	26,673	-
Other Non-Current Liabilities:					
Accrued Worker's Compensation	17,846	2,277	(3,309)	16,814	-
Accrued Legal Claims	4,387	5,642	(6,500)	3,529	-
Compensated Absences	9,972	1,957	(1,758)	10,171	-
Total Non-Current Liabilities	$ 1,880,119	$ 372,683	$ (254,652)	$ 1,998,150	$ 125,300

An analysis of debt service requirements to maturity on the long-term obligations follows:

(In Millions of USD)

Years Ended June 30:	Principal Requirements	Interest Requirements	Total Debt Service Requirements
2015	$ 125.3	$ 79.6	$ 204.9
2016	136.7	75.4	212.1
2017	124.8	68.4	193.2
2018	131.6	63.5	195.1
2019	86.8	59.1	145.9
2020-2024	381.5	241.7	623.2
2025-2029	292.1	172.3	464.4
2030-2034	279.7	106.4	386.1
2035-2039	161.0	52.5	213.5
2040-2044	131.9	16.6	148.5
Total	$ 1,851.4	$ 935.5	$ 2,786.9

NOTE 14: DEBT PAYABLE (CONTINUED)

Pertinent information regarding long-term debt obligations outstanding is presented below:

Date of Issue	Amount of Original Issue	Purpose	Balance Outstanding at June 30, 2014
1997	$78,500,000	Water and Wastewater Revenue Bonds, Variable Rate Series of 1997B, issued for various capital projects, to fund the Debt Reserve Account, and to pay the costs of issuance related to the bond issue at a variable rate.	$63,800,000
1998	135,185,000	Water and Wastewater Revenue Refunding Bonds, Series of 1998, issued for defeasing a portion of the Series of 1993 Bonds, for defeasing a portion of the Fifteenth Series Bonds, and to pay the costs of issuance related to the bond issue at a rate of 5.25%.	38,025,000
1999	6,700,000	Pennsylvania Infrastructure Investment Authority Loan of 1999, issued for various capital projects at a rate of 1.41% - 2.73%.	410,107
2005	250,000,000	Water and Wastewater Revenue Bonds, Series of 2005A, issued for various capital projects, to fund the Debt Reserve Account of the Sinking Fund, and to pay the costs of issuance related to the bond issue at a rate of 3% - 5.25%.	117,250,000
2005	83,665,000	Water and Wastewater Revenue Refunding Bonds, Variable Rate Series of 2005B, issued for defeasing a portion of the Series of 1995 Bonds, and to pay the costs of issuance related to the bond issue at a variable rate.	67,175,000
2007	345,035,000	Water and Wastewater Revenue Refunding Bonds, Series of 2007A and 2007B, issued for defeasing the Series of 1997A and Series of 2001A Bonds, and to pay the costs of issuance related to the bond issue at a rate of 4% - 5%.	289,230,000

NOTE 14: DEBT PAYABLE (CONTINUED)

Date of Issue	Amount of Original Issue	Purpose	Balance Outstanding at June 30, 2014
2009	140,000,000	Water and Wastewater Revenue Bonds, Series of 2009A, issued for various capital projects, issued for funding the Debt Reserve Account of the Sinking Fund, and to pay the costs of issuance related to the bond issue at a rate of 4% - 5.75%.	140,000,000
2009	22,828,000	Pennsylvania Infrastructure Investment Authority Loan of 2009 (B), issued for various capital projects at a rate of 1.193% - 2.107%.	25,090,064
2009	35,667,000	Pennsylvania Infrastructure Investment Authority Loan of 2009 (C), issued for various capital projects at a rate of 1.193% - 2.107%.	36,230,899
2009	64,380,000	Pennsylvania Infrastructure Investment Authority Loan of 2009 (D), issued for various capital projects at a rate of 1.193% - 2.107%.	64,520,996
2010	8,111,000	Pennsylvania Infrastructure Investment Authority Loan of 2010 (B), issued for various capital projects at a rate of 1.193% - 2.107%.	27,133,256
2010	396,460.000	Water and Wastewater Revenue Refunding Bonds, Series of 2010A, issued for defeasing the Series of 2003 Bonds, issued for funding a payment to terminate the Series of 2003 Swap Agreement, for funding the required deposit into the Debt Reserve Account of the Sinking Fund, and to pay the costs of issuance related to the bond issue at a rate of 2% - 5%.	251,830,000
2010	185,000,000	Water and Wastewater Revenue Bonds, Series of 2010C, issued for funding a payment to terminate the Series of 2007 Swap Agreement, fund the required deposit into the Debt Reserve Account of the Sinking Fund, and to pay the costs of issuance related to the bond issue at a rate of 3% - 5%.	185,000,000

NOTE 14: DEBT PAYABLE (CONTINUED)

Date of Issue	Amount of Original Issue	Purpose	Balance Outstanding at June 30, 2014
2011	184,855,000	Water and Wastewater Revenue Bonds, Series of 2011A, and Water and Wastewater Revenue Refunding Bonds, Series of 2011B, issued for partially defeasing the Series of 2001A and Series of 2007A Bonds, for various capital projects, for funding of capitalized interest, for financing any required deposit into the Debt Reserve Account of the Sinking Fund, and to pay the cost of issuance related to the bond issue at a rate of 4% - 5%.	184,855,000
2012	70,370,000	Water and Wastewater Revenue Refunding Bonds, Series of 2012, issued for defeasing the Series of 2001A and 2001B Bonds and to pay the cost of issuance related to the bond issue at a rate of 1% - 5%.	67,725,000
2013	170,000,000	Water and Wastewater Revenue Bonds, Series of 2013A, issued to finance capital improvements, financing a deposit to the Debt Reserve Account, and to pay the cost of issuance related to the bond issue at a rate of 3% to 5.125%.	170,000,000
2014	123,170,000	Water and Wastewater Revenue Bonds, Series of 2014A, issued advance refund a portion of the Series of 2005A Bonds, to finance capital improvements, financing a deposit to the Debt Reserve Account, and to pay the cost of issuance related to the bond issue at a rate of 3% to 5%.	123,170,000
			$ 1,851,445,322

In prior years, the Water Fund defeased certain bonds by placing the proceeds of new bonds in irrevocable trusts to provide for all future debt service payments on old bonds. Accordingly, the trust account assets and the liability for the defeased bonds are not included in the Water Fund's financial statements. As of June 30, 2014, $138.5 million of bonds outstanding were considered defeased. As of June 30, 2013 $40.5 million of bonds outstanding were considered defeased.

NOTE 14: DEBT PAYABLE (CONTINUED)

Bond Issues

In August 2013, the city issued Water and Wastewater Revenue Bonds Series 2013 A in the amount of $170 million. Serial Bonds were issued in the amount of $120 million with interest rates ranging from 3% to 5% and have a maturity date of 2023. Term Bonds were issued in the amount of $50 million with an interest rate of 5.125% and mature in 2043. The proceeds of the bonds together with other available funds of the City's Water Department will be used to finance capital improvements to the City's Water and Wastewater systems, a deposit to the Debt Reserve account of the Sinking Fund and the cost of issuance relating to the Bonds.

In January 2014, the City issued Water and Wastewater Revenue Bonds Series 2014A in the amount of $123.2 million. Serial Bonds were issued for $93.2 million with interest rates ranging from 3.0% to 5.0% maturing July 1, 2027. Term bonds were issued in the amount of $30 million with a 5.0% interest rate maturing July 1, 2043. The purpose of the bonds is to provide funds that will be used for the advance refunding of a portion of the City's outstanding Water and Wastewater Revenue Bonds, Series 2005A, capital improvements to the City's Water and Wastewater System, a deposit to the Debt Reserve Sinking Fund and the cost of issuance relating to the bonds. The aggregate difference in debt service between the refunding debt and the refunded debt is $8.8 million. This refunding transaction resulted in a net economic gain of $6.8 million.

Pennvest Loans

In July 2010, the City of Philadelphia Water Department received approval from the Pennsylvania Infrastructure Investment Authority ("PENNVEST") for the Green Infrastructure Project (Series 2010B), bringing the total financing from PENNVEST to $214.9 million. During fiscal year 2014 and 2013, PENNVEST drawdowns totaled $23.6 million and $15.4 million, respectively, which represents an increase in bond issuances. The funding is through low interest loans of 1.193% during the construction period and for the first five years of amortization (interest only payment are due during the construction period up to three years) and 2.107% for the remaining fifteen years. Individual loan information as of June 30, 2014 is as follows:

Date	Series	Maximum Loan Amount	Approved Project Costs	Amount Requested through 6/30/14	Amount Received Yes/No
October 2009	2009B	$42,886,030	$42,339,199	$28,790,697	Yes
October 2009	2009C	57,268,193	56,264,382	41,771,895	Yes
March 2010	2009D	84,759,263	84,404,754	71,703,769	Yes
July 2010	2010B	30,000,000	31,376,846	27,741,841	Yes
	Totals	$214,913,486	$214,385,181	$170,008,202	

NOTE 14: DEBT PAYABLE (CONTINUED)

Pennvest Loans (Continued)

Individual loan information as of June 30, 2013 is as follows:

Date	Series	Maximum Loan Amount	Approved Project Costs	Amount Requested through 6/30/13	Amount Received Yes/No
October 2009	2009B	$42,886,030	$42,339,199	$25,908,165	Yes
October 2009	2009C	57,268,193	56,264,382	40,338,440	Yes
March 2010	2009D	84,759,263	84,404,754	70,930,405	Yes
July 2010	2010B	30,000,000	31,376,846	9,254,100	Yes
	Totals	$214,913,486	$214,385,181	$146,431,110	

NOTE 15: DERIVATIVE INSTRUMENT

City of Philadelphia, 2005 Water & Sewer Swap

Objective: In December, 2002, the City entered into a swaption that provided the City with an up-front payment of $4.0 million. As a synthetic refunding of all or a portion of its 1995 Bonds, this payment approximated the present value savings, as of December 2002, of a refunding on May 4, 2005. The swaption gave Citigroup (formerly of Salomon Brothers Holding Company, Inc), the option to enter into an interest rate swap to receive fixed amounts and pay variable amounts.

Terms: Citigroup exercised its option to enter into a swap May 4, 2005, and the swap commenced on that date. Under the terms of the swap, the City pays a fixed rate of 4.53% and receives a variable payment computed as the actual bond rate or alternatively, 68.5% of one month LIBOR, in the event the average rate on the Bonds as a percentage of the average of one month LIBOR has exceeded 68.5% for a period of more than 180 days. Citigroup is currently paying 68.5% of one month LIBOR under the swap. The payments are based on an amortizing notional schedule (with an initial notional amount of $86.1 million), and when added to an assumption for remarketing, liquidity costs and cost of issuance were expected to approximate the debt service of the refunded bonds at the time the swaption was entered into.

In May 2013, the City and Water Department converted the original variable rate bonds associated with the swap to an index-based rate, terminating the existing letter of credit in the process.

As of June 30, 2014, the swap had a notional amount of $67.175 million and the associated variable rate bond had $67.175 million principal amount. The bonds' variable rate coupons are based on the same index as the receipt on the swap. The bonds mature on August 1, 2018 and the related swap agreement terminates on August 1, 2018.

NOTE 15: DERIVATIVE INSTRUMENT (CONTINUED)

Fair value: As of June 30, 2014, the swap had a negative fair value of ($5.71 million). This means that the Water Department would have to pay this amount if the swap terminated.

Risk: As of June 30, 2014, the City is not exposed to credit risk because the swap had a negative fair value. Should interest rates change and the fair value of the swap become positive, the City would be exposed to credit risk in the amount of the swap's fair value. Since the City is now receiving 68.5% of one month LIBOR, and paying 68.5% of one month LIBOR plus a fixed spread, the City is no longer exposed to basis risk, or tax risk. The swap includes an additional termination event based on credit ratings. The swap may be terminated by the City if the ratings of Citigroup or its Credit Support Provider fall below A3 or A-, or by Citigroup if the rating of the City's Water and Wastewater Revenue Bonds falls below A3 or A-. There are 30-day cure periods to these termination events. However, because the City's swap payments are insured by Assured Guaranty Municipal Corporation (formerly FSA), no termination event based on the City's Water and Wastewater Revenue Bond ratings can occur as long as Assured is rated at least A or A2.

As of June 30, 2014, rates were as follows:

Terms	Rates	
Interest Rate Swap		
Fixed payment to Citi under swap	Fixed	4.53000 %
Variable rate payment from Citi under swap	68.5% of 1-month Libor	(0.10631) %
Net interest rate swap payments		4.42369 %
Variable rate note coupon payments	68.5% of 1-month Libor + fixed spread	0.10631 %*
Synthetic interest rate on bonds		4.53000 %

**Excludes fixed spread, which is similar to the City's expected Letter of Credit costs on a comparable variable rate bond*

As of June 30, 2013, rates were as follows:

Terms	Rates	
Interest Rate Swap		
Fixed payment to Citi under swap	Fixed	4.53000 %
Variable rate payment from Citi under swap	68.5% of 1-month Libor	(0.13334)%
Net interest rate swap payments		4.39666 %
Variable rate note coupon payments	68.5% of 1-month Libor + fixed spread	0.13334 %*
Synthetic interest rate on bonds		4.53000 %

**Excludes fixed spread, which is similar to the City's expected Letter of Credit costs on a comparable variable rate bond*

NOTE 15: DERIVATIVE INSTRUMENTS (CONTINUED)

Swap payments and associated debt: As of June 30, 2014, debt service requirements of the variable rate debt and net swap payments for their term, assuming current interest rates remain the same, were as follows:

Fiscal Year Ending	Variable Rate Bonds		Interest Rate	
June 30	Principal	Interest	Swaps, Net	Total Interest
2015	$ 15,535,000	$ 71,415	$ 2,971,612	$ 3,043,027
2016	16,315,000	54,900	2,284,392	2,339,292
2017	17,145,000	37,555	1,562,668	1,600,223
2018	18,015,000	19,328	804,226	823,554
2019	165,000	175	7,299	7,474
Total	$ 67,175,000	$ 183,373	$7,630,197	$7,813,570

NOTE 16: PENSION PLAN

Effective with fiscal year 2014, the City implemented GASB Statement No. 67, *Financial Reporting for Pension Plans.* The new GASB required the City to re-evaluate its status as a single, multi, or employer defined benefit pension plan. The new statement defines a single employer as the primary government and its component units. However, the City's pension plan includes an entity, the Philadelphia Housing Development Corporation (PHDC), that is not a component unit. Therefore, beginning with fiscal year 2014, the City's pension plan meets the definition of a multi-employer plan. The City also maintains one single-employer defined pension plan for the Philadelphia Gas Works.

In June 2012, the GASB issued Statement No. 67, *Financial Reporting for Pension Plans*. This Statement replaces the requirements of Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans* and Statement No. 50, *Pension Disclosures*. The statement establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring a participating employer's pension liability. In most respects, the requirements for pension plan financial statements remain unchanged from the prior standards; however, the statements do require additional note disclosures including new schedules of required supplementary information.

Required Supplementary Information calculated in accordance with GASB Statement No. 25 is presented in audited financial statements of the respective pension plans. Copies of these financial statements may be obtained by contacting the Director of Finance of the City of Philadelphia.

The Pension Plans' financial statements are prepared using the accrual basis of accounting. Member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits and refunds of contributions are recognized when due and payable in accordance with the terms of the Fund.

NOTE 16: PENSION PLAN (CONTINUED)

A. Plan Administration

The Philadelphia Board of Pensions and Retirement (the "Board") administers the City of Philadelphia Public Employees Retirement System, a multiple employer defined benefit pension plan with a small but increasing defined contribution component, which provides pensions for all officers and employees of the City, as well as those of three quasi-governmental agencies (per applicable enabling legislation and contractual agreements). The Board was established by section 2-308 of the 1952 Philadelphia Home Rule Charter. Its actions in administering the Retirement System are governed by Title 22 of the Philadelphia Code.

B. Plan Membership

At July 1, 2013, the date of the most recent actuarial valuation, pension plan membership consisted of the following:

Actives	26,788
Terminated Vested	1,281
Disabled	4,152
Retirees	21,696
Beneficiaries	8,614
DROP	2,427
Total City Members	64,958
Annual Salaries	$1,429,723,436
Average Salary per Active Member	$53,372
Annual Retirement Allowances	$676,634,789
Average Retirement Allowance	$19,634

C. Contributions

Per Title 22 of the Philadelphia Code, members contribute to the System at various rates based on bargaining unit, uniform status, and entry date into the System. As of July 1, 2013 uniform employees will be contributing either 5.00%, 5.50%, or 6.00% of pensionable earnings; non-uniform employees will be contributing either 1.93%, 2.03%, 2.55%, or 6.00% of pensionable earnings; and elected employees will be contributing either 8.16% or 9.60% of pensionable earnings.

Employer contributions are made by the City throughout each fiscal year (which ends June 30) and by three (3) quasi-governmental agencies on a quarterly basis. These contributions, determined by an annual actuarial valuation report ("AVR"), when combined with plan member contributions, are expected to finance the cost of benefits earned by plan members during the year, with an additional amount to finance any unfunded accrued liability.

NOTE 16: PENSION PLAN (CONTINUED)

C. Contributions (Continued)

Within the AVR, two contribution amounts are determined based upon two different sets of rules for determining the way the unfunded actuarial liability is funded.

The first method is defined in accordance with Act 205 and defines the Minimum Municipal Obligation ("MMO"), which is the City's minimum required contribution under Pennsylvania state law.

The second method is in accordance with the City's Funding Policy which predates the Act 205 rules and calls for contributions that are greater than the MMO until the initial unfunded liability determined in 1984 is fully funded.

Under both funding methods there are two components: the normal cost and the amortized unfunded actuarial liability. The actuarial unfunded liability is the amount of the unfunded actuarial liability that is paid each year based upon the given or defined amortization periods. The amortization periods are different under the MMO and City's Funding Policy.

D. Funding Policy

The initial July 1, 1985 unfunded actuarial liability ("UAL") is amortized over 34 year ending June 30, 2019 with payments increasing at 3.3% per year, the assumed payroll growth. Other charges in the actuarial liability are amortized in level-dollar payments follows:

- Actuarial gains and losses – 20 years beginning July 1, 2009. Prior gains and losses were amortized over 15 years.
- Assumptions changes – 15 years beginning July 1, 2010. Prior changes were amortized over 20 years.
- Plan changes for active members – 10 years.
- Plan changes for inactive members – 1 year.
- Plan changes mandated by the State – 20 years.

In fiscal year 2014, the City and other employers' contributions of $533.2 million was less than the actuarially determined employer contribution (ADEC) of $823.9 million. In the event that the City contributes less than the funding policy, an experience loss will be created that will be amortized in accordance with funding policy over 20 years.

The Schedule of Employer Contributions (based on the City's Funding Policy) is included as Required Supplemental Information and provides a 6-year presentation of employer contributions.

NOTE 16: PENSION PLAN (CONTINUED)

E. Minimum Municipal Obligation

For the purposes of the MMO under Act 205 reflecting the fresh start amortization schedule, the July 1, 2009 UAL was "fresh started" to be amortized over 30 years ending June 30, 2039. This is a level dollar amortization of the UAL. All future amortization periods will follow the City's Funding Policies as outlined above. In fiscal year 2014, the City and other employers' contributions of $553.2 million exceeded the Minimum Municipal Obligation of $523.4 million.

F. Benefits

The Public Employees Retirement System provides retirement, disability, and death benefits according to the provisions of Title 22 of the Philadelphia Code. These provisions prescribe retirement benefit calculations, vesting thresholds, and minimum retirement ages, that vary based on bargaining unit, uniform/non-uniform status, and entry date into the System.

Non-uniform employees may retire at either age 55 with up to 80% of average final compensation ("AFC") or may retire at either age 60 with up to 100% or 25% of AFC, depending on entry date into the System. Uniform employees may retire at either age 45 with up to 100% of AFC or age 50 with up to either 100% or 35% of AFC, depending on entry date into the System. Survivorship selections may result in an actuarial reduction to the calculated benefit.

Members may qualify for service-connected disability benefits regardless of length of service. Service-connected disability benefits are equal to 70% of a member's final rate of pay, and are payable immediately without an actuarial reduction. These applications require approval by the Board.

Eligibility to apply for non-service-connected disability benefits varies by bargaining unit and uniform/non-uniform status. Non-service connected disability benefits are determined in the same manner as retirement benefits, and are payable immediately.

Service connected death benefits are payable to:

1) surviving spouse/life partner at 60% of final rate of pay plus up to 2 children under age 18 at 10% each of final rate of pay (maximum payout: 80%);

2) if no surviving spouse/life partner, up to 3 children under age 18 at 25% each of final rate of pay (maximum payout 75%); or

3) if no surviving spouse/life partner or children under age 18, up to 2 surviving parents at 15% each of final rate of pay (maximum payout 30%).

NOTE 16: PENSION PLAN (CONTINUED)

F. Benefits (Continued)

Non-service connected deaths are payable as a lump sum payment, unless the deceased was either vested or had reached minimum retirement age for their plan, in which case the beneficiary(s) may instead select a lifetime monthly benefit, payable immediately with an actuarial reduction.

A Pension Adjustment Fund ("PAF") is funded with 50% of the excess earnings that are between 1% and 6% above the actuarial assumed earnings rate. Each year within sixty days of the end of the fiscal year, by majority vote of its members, the Board of Directors of the Fund (the "Board") shall consider whether sufficient funds have accumulated in the PAF to support an enhanced benefit distribution (which may include, but is not limited to, a lump sum bonus payment, monthly pension payment increases, ad-hoc cost-of-living adjustments, continuous cost-of-living adjustments, or some other form of increase in benefits as determined by the Board) to retirees, their beneficiaries and their survivors. As of July 1, 2013, the date of the most recent actuarial valuation, there was $1,096,608 in the PAF and the Board voted to make distributions of $0 during the fiscal year ended June 30, 2014.

The Fund includes a Deferred Retirement Option Plan (DROP Plan). The DROP Plan allows a participant to declare that they will retire within 4 years. During the 4-year period, the City will make no further contributions for the participant. The participant would continue to work and to receive their salary; however, any increases would not be counted towards their pension benefit. During the 4-year period the individual participates in the DROP Plan, their pension benefits will be paid into an escrow account in the participant's name. After the 4-year period, the participant would begin to receive their pension benefits and the amount that has been accumulated in the escrow account in a lump sum payment. The balance in the DROP Plan as of June 30, 2014 is $216.9 million.

The Annual Pension Cost and related percentage contributed for the three most recent fiscal years are as follows:

(Millions of Dollars)

Fiscal Year Ended June 30	Annual Pension Cost	Percentage Contributed	Net Pension Obligation
2012	$ 719.6	77.22%	$ 243.9
2013	729.1	105.43%	204.3
2014	816.3	69.35%	454.5

NOTE 16: PENSION PLAN (CONTINUED)

F. Benefits (Continued)

The actuarial valuation used to compute the current year's required contribution was performed as of July 1, 2013. Methods and assumptions used for that valuation include:

- the individual entry age actuarial cost method
- a ten-year smoothed market value method for valuing investments
- an annual investment rate of return of 7.85%
- projected annual salary increases based on new age based scale
- payroll growth rate is 3.3%
- no post-retirement benefit increases

Administrative costs of the Plan are paid out of the Plan's assets.

G. Funding Status

The following schedule shows the funding status based on the latest actuary report. The schedule of funding progress, which presents multiyear trend information about whether the actuarial value of plan assets is decreasing over time relative to the actuarial accrued liability for benefits, can be found in the Required Supplementary Information section immediately following the Notes to the Financial Statements.

(Millions of Dollars)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percent of Covered Payroll
	(a)	(b)	(b - a)	(a / b)	(c)	(b - a) / c
7/1/2011	$ 4,489.1	$ 9,487.5	$ 4,998.4	47.32%	$ 1,371.3	364.50%
7/1/2012	4,486.8	9,799.9	5,313.1	45.78%	1,372.2	387.20%
7/1/2013	4,799.3	10,126.2	5,326.9	47.39%	1,429.7	372.59%

NOTE 16: PENSION PLAN (CONTINUED)

G. Funding Status (Continued)

The City and other employers' annual pension cost and net pension obligation (NPO) for the Municipal Pension Plan for the current year were as follows:

	(Thousands of Dollars)
Annual Required Contribution (ARC)	$ 823,885
Interest on Net Pension Obligation (NPO)	16,242
Adjustment to ARC	(23,784)
Annual Pension Cost	816,343
Contributions Made	(566,179)
Increase in NPO	250,164
NPO at beginning of year	204,302
NPO at end of year	454,466
Interest Rate	7.95%
15 Year Amortization Factor (EOY)	8.59%

The amount of increase in NPO related to the Water Department was $17.7 million for fiscal year 2014.

H. Derivative Instrument

In 2010, the City of Philadelphia adopted GASB Statement No. 53 which addresses the recognition, measurement, and disclosure of information regarding derivative instruments entered into by state and local governments. Derivative instruments such as swaps, options, futures and forwards are often complex financial arrangements used by governments to manage specific risks or to make investments. By entering into these arrangements, governments receive and make payments based on market prices without actually entering into the related financial or commodity transactions. Derivative instruments associated with changing financial and commodity prices result in changing cash flows and fair values that can be used as effective risk management or investment tools. Derivative instruments, however, also can expose governments to significant risks and liabilities.

NOTE 16: PENSION PLAN (CONTINUED)

H. Derivative Instrument (Continued)

The City of Philadelphia Municipal Pension Fund (Pension Fund) enters into a variety of financial contracts which include options, futures, forwards and swap agreements to gain exposure to certain sectors of the equity and fixed income markets; collateralized mortgage obligations (CMO's); other forward contracts, and U.S. Treasury strips. The contracts are used primarily to enhance performance and reduce volatility of the portfolio. The Pension Fund is exposed to credit risk in the event of non performance by counterparties to financial instruments. The Pension Fund generally enters into transactions only with high quality institutions. Legal risk is mitigated through selection of executing brokers and review of all documentation. The Pension Fund is exposed to market risk, the risk that future changes in market conditions may make an instrument less valuable. Exposure to market risk is managed in accordance with risk limits set by Board approved guidelines, through buying or selling instruments or entering into offsetting positions. The notional or contractual amounts of derivatives indicate the extent of the Pension Fund's involvement in the various types and uses of derivative financial instruments and do not measure the Pension Fund's exposure to credit or market risks and do not necessarily represent amounts exchanged by the parties. The amounts exchanged are determined by reference to the notional amounts and the other terms of the derivatives.

The following table summarizes the aggregate notional or contractual amounts for the Pension Fund's derivative financial instruments at June 30, 2014:

List of Derivatives Aggregated by Investment Type

	Changes in Fair Value		Fair Value at June 30, 2014		
	Classification	Amount	Classification	Amount	Notional
Investment Derivatives					
Forward Currency Contracts	Net appreciation/(depreciation) in investments	$ (1,981,432)	Accrued interest and other receivables	$ (238,578)	$ 150,909,330
Futures	Net appreciation/(depreciation) in investments	24,249	Accrued interest and other receivables	(3,524)	101
Grand Totals		$ (1,957,183)		$ (242,102)	$ 150,909,431

NOTE 16: PENSION PLAN (CONTINUED)

H. Derivative Instrument (Continued)

A Derivatives Policy Statement identifies and allows common derivative instruments and strategies, which are consistent with the Investment Policy Statement of the City of Philadelphia Municipal Pension Fund. The guidelines identify transaction-level and portfolio-level risk control procedures and documentation requirements. Managers are required to measure and monitor exposure to counterparty credit risk. All counterparties must have credit ratings available from nationally recognized rating institutions such as Moody, Fitch, and S&P. The details of other risks and financial instruments in which the Fund involves are described below:

1) ***Credit Risk*****:** The Pension Fund is exposed to credit risk on hedging derivative instruments that are in asset positions. To minimize its exposure to loss related to credit risk, it is the Pension Fund's policy to require counterparty collateral posting provisions in its non-exchange traded hedging derivative instruments. These terms require full collateralization of the fair value of hedging derivative instruments in asset positions (net of the effect of applicable netting arrangements) should the counterparty's credit rating fall below AA as issued by Fitch Ratings and Standard & Poor's or Aa as issued by Moody's Investors Service. Collateral posted is to be in the form of U.S. Treasury securities held by a third-party custodian. The City has never failed to access collateral when required.

   It is the Pension Fund's policy to enter into netting arrangements whenever it has entered into more than one derivative instrument transaction with counterparty. Under the terms of these arrangements, should one party become insolvent or otherwise default on its obligations, close-out netting provisions permit the non-defaulting party to accelerate and terminate all outstanding transactions and net the transactions' fair values so that a single sum will be owed by, or owed to, the non-defaulting party.

2) ***Swap Agreements*****:** Swap agreements provide for periodic payments at predetermined future dates between parties based on the change in value of underlying securities, indexes or interest rates. During the year ended June 30, 2012 the Fund entered into interest rate swaps. Under the receive fixed interest rate type swap arrangements, the Fund receives the fixed interest rate on certain equity or debt securities or indexes in exchange for a fixed charge. There were not any total receive fixed interest Swaps this year. On its pay-variable, received-fixed interest rate swap, as LIBOR increases, the Fund's net payment on the swap increases. Alternatively, on its pay-fixed, receive-variable interest rate swap, as LIBOR or the SIFMA swap index decreases, the Fund's net payment on the swap increases.

NOTE 16: PENSION PLAN (CONTINUED)

H. Derivative Instrument (Continued)

3) ***Future Contracts*****:** Future contracts are types of contracts in which the buyer agrees to purchase and the seller agrees to make delivery of a specific financial instrument at a predetermined date and price. Gains and losses on futures contracts are settled daily based on a notional (underlying) principal value and do not involve an actual transfer of the specific instrument. Futures contracts are standardized and are traded on exchanges. The exchange assumes the risk that counterparty will not pay and generally requires margin payments to minimize such risk. In addition, the Fund enters into short sales, sales of securities it does not presently own, to neutralize the market risk of certain equity positions. Initial margin requirements on futures contracts and collateral for short sales are provided by investment securities pledged as collateral and by cash held by various brokers. Although the Fund has the right to access individual pledged securities, it must maintain the amount pledged by substituting other securities for those accessed. The realized gain from Future contracts was $749,289.

4) ***Forward contracts*****:** The Fund is exposed to basis risk on its forward contract because the expected funds purchase being hedged will price based on a pricing point different than the pricing point at which the for-ward contract is expected to settle. The realized loss from Forward contracts was $(1,913,361).

5) ***Termination risk***: The Fund or its counterparties may terminate a derivative instrument if the other party fails to perform under the terms of the contract. In addition, the Fund is exposed to termination risk on its receive-fixed interest rate swap. The Fund is exposed to termination risk on its rate cap because the counter-party has the option to terminate the contract if the SIFMA swap index exceeds 12 percent. If at the time of termination, a hedging derivative instrument is in a liability position, the city would be liable to the counter-party for a payment equal to the liability, subject to netting arrangements.

6) ***Rollover Risk***: The Fund is exposed to rollover risk on hedging derivative instruments that are hedges of debt that mature or may be terminated prior to the maturity of the hedged debt. When these hedging derivative instruments terminate, or in the case of a termination option, if the counterparty exercises its option, the Fund will be re-exposed to the risks being hedged by the hedging derivative instrument.

I. Summary of Significant Accounting Policies

Financial statements of the Fund are prepared using the accrual basis of accounting. Member contributions are recognized in the period in which the contributions are due. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits and refunds of contributions are recognized when due and payable in accordance with the terms of the Fund. Investments are valued as described in Note 2I.

NOTE 17: OTHER POST EMPLOYMENT BENEFITS

A. Plan description

The City of Philadelphia self-administers a single employer, defined benefit plan and provides health care for five years subsequent to separation for eligible retirees. Certain union represented employees may defer their coverage until a later date, but the amount that the City pays for their health care is limited to the amount that the City would have paid at the date of their retirement. The City also provides lifetime insurance coverage for all eligible retirees. Firefighters are entitled to $7,500 coverage and all other employees receive $6,000 in coverage. The plan does not issue stand alone financial statements, and the accounting for the plan is reported within the financial statements of the City of Philadelphia.

B. Funding Policy

The City funds its retiree benefits on a pay-as-you-go basis. To provide health care coverage, the City pays a negotiated monthly premium for retirees covered by union contracts and is self insured for non-union employees. For fiscal year 2014, the City paid $67.1 million for retiree healthcare.

C. Annual OPEB Cost and Net OPEB Obligation

The City's annual other post employment benefit (OPEB) expense is calculated based on the annual required contribution of the employer (ARC), an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The ARC represents a level of funding, which if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities over a period not to exceed thirty (30) years. The following table shows the components of the City's annual OPEB cost for the year, the amount actually contributed to the plan and changes in the net OPEB obligation:

	(Thousands of Dollars)
Annual Required Contribution	$ 128,619
Interest on Net OPEB Liability	7,068
Adjustment to Annual Required Contribution	(6,369)
Annual OPEB Cost	129,318
Payments Made	(67,100)
Increase in Net OPEB Obligation	62,218
Net OPEB Obligation at beginning of year	166,315
Net OPEB Obligation at end of year	$ 228,533

NOTE 17: OTHER POST EMPLOYMENT BENEFITS (CONTINUED)

C. Annual OPEB Cost and Net OPEB Obligation (Continued)

The City of Philadelphia's annual OPEB cost, the percentage of annual OPEB cost contributed to the Plan, and the net OPEB obligation for the fiscal year ended June 30, 2014 was as follows:

(Thousands of Dollars)

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Contributed	Net OPEB Obligation
6/30/2014	$ 129,318	52%	$ 228,533
6/30/2013	114,392	50%	166,314
6/30/2012	105,369	72%	109,019

D. Funded Status and Funding Progress

As of July 1, 2013, the most recent actuarial valuation date, the City is funding OPEB on a pay as you go basis and accordingly, the unfunded actuarial accrued liability for benefits was $1.7 billion. The covered annual payroll was $1.417 billion and the ratio of the UAAL to the covered payroll was 120.2%.

The required schedule of funding progress immediately following the notes to the financial statements presents multi-year trend information about whether the actuarial value of the plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

The projections of future benefit payments for an ongoing plan obligation involves estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Amounts determined regarding the funded status of the obligation and the contributions of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

E. Actuarial Methods and Assumptions

Projections of costs for financial reporting purposes are based on the types of benefits provided under the terms of the substantive plan at the time of each valuation and on the pattern of sharing costs between the employer and plan members to that point.

NOTE 17: OTHER POST EMPLOYMENT BENEFITS (CONTINUED)

E. Actuarial Methods and Assumptions (Continued)

Costs were determined according to the individual entry age actuarial cost method with the attribution period ending at each decrement age. This is consistent with the cost method used for the City of Philadelphia Municipal Retirement System. The City uses a level percent open approach as its method of amortization. Unfunded liabilities are funded over a 30 year period as a level percentage of payroll, which is assumed to increase at a compound annual rate of 4.25% per year. The actuarial assumption included a 7.95% compound annual interest rate on the City's general investments. The current plan incorporates the following assumptions: no post-retirement benefit increases since last year; a 7.85% Investment Rate of Return, a 3.30% Rate of Salary increases; and, a 4% Ultimate Rate of Medical Inflation.

NOTE 18: CLAIMS, LITIGATION, AND CONTINGENCIES

Generally, claims against the City are payable out of the General Fund, except claims against the City Water Department, City Aviation Division, or Component Units which are paid out of their respective funds and only secondarily out of the General Fund which is then reimbursed for the expenditure. Unless specifically noted otherwise, all claims hereinafter discussed are payable out of the Water Fund.

The Act of October 5, 1980, P.L. 693, No. 142, known as the "Political Subdivision Tort Claims Act," established a $500,000 aggregate limitation on damages arising from the same cause of action, transaction, occurrence, or series of causes of action, transactions or occurrences with respect to governmental units in the Commonwealth such as the City. The constitutionality of that aggregate limitation has been upheld by the United States Supreme Court. There is no such limitation under federal law.

Various claims have been asserted against the Water Department and in some cases lawsuits have been instituted. Many of these claims are reduced to judgment or otherwise settled in a manner requiring payment by the Water Department. As of June 30, 2014 and 2013, the aggregate estimate of loss deemed to be probable is $20.3 million and $22.2 million, respectively. This amount has been included on the Statement of Net Position under Other Long-Term Liabilities.

In addition to the above, there are other lawsuits against the Water Department in which some amount of loss is reasonably possible. The aggregate estimate of the loss, which could result if unfavorable legal determinations were rendered against the Water Department with respect to these lawsuits, is $9.2 million and $9.4 million as of June 30, 2014 and 2013, respectively.

NOTE 19: LONG TERM AGREEMENTS

The Water Department has entered into several long term agreements with third parties through the Philadelphia Municipal Authority as follows:

A. Automatic Meter Reading

In September 1997, the Water Department and the Water Revenue Bureau began the implementation of the Automatic Meter Reading Program (the "AMR Program") involving the replacement of all residential water meters with new meters equipped with radio transmitter meter reading devices ("ERT"). Installation commenced on schedule on September 11, 1997. By June 30, 2012, more than 482,841 new meters had been installed. The AMR Program significantly reduced the costs of meter reading and related support. As of June 30, 2014, more than 99.5% of the Water Department's customers have AMR meters, drastically improving the Water Department's ability to initiate and enforce collection of delinquent accounts. From 2011 through 2013, as required in the long-term meter reading contract, the service provider (ITRON) conducted battery replacement of the vast majority of customer reading endpoint devices (ERTs), thus enabling the battery capability of the existing population through 2025. The Water Department is also working on the purchase and installation of upgraded AMR devices for all commercial customers that have ERTs. The AMR Program agreement term ends in 2017. The Department has two one-year renewal options.

Under the agreement ITRON is paid a fixed amount for each monthly meter reading actually obtained. The Water Department paid ITRON, through the Philadelphia Municipal Authority ("PMA"), $1,984,362 and $1,964,275 in Fiscal Year 2014 and Fiscal Year 2013, respectively for meter reads. Additionally, the Water Department paid ITRON, through PMA, $1,809,838 and $1,732,516 in Fiscal Year 2014 and Fiscal Year 2013, respectively, for the purchase of meters.

B. Biosolids Treatment and Utilization

The City is required by Federal and Commonwealth law, administered by the U.S. Environmental Protection Agency ("EPA") and the Pennsylvania Department of Environmental Protection ("PADEP"), respectively, to treat and dispose of biosolids captured during wastewater treatment at the City's Water Pollution Control Plants ("WPCP's"). Biosolids from the three WPCP is treated at the Biosolids Recycling Center ("BRC"). The BRC had historically produced two grades of biosolids, as defined by state and federal regulations. These were Class A biosolids compost and Class B dewatered biosolids cake. Class B biosolids were used on farmlands and at mine reclamation sites and co-disposed with trash at municipal solid waste landfills. Class A compost, which was produced at the BRC until October 2007, was put to a variety of local and regional uses, including garden and horticultural applications and recreation sites.

NOTE 19: LONG TERM AGREEMENTS (CONTINUED)

B. Biosolids Treatment and Utilization (Continued)

Biosolids processing and distribution is governed at the national level by EPA regulations published at 40 CFR Part 503 regulations in February 1993 (the "Part 503 Regulations"). The Part 503 Regulations require, among other things, certain record keeping and monitoring procedures and compliance with technical standards for pathogen reduction, vector attraction reduction and pollutant limits. These regulations are self-implementing and directly enforceable, in that the EPA can initiate enforcement actions for non-compliance even in the absence of the EPA's issuance of permits under the National Pollutant Discharge Elimination System ("NPDES") permitting program. The Water Department is in full compliance with the technical standards in the Part 503 Regulations.

While the Water Department has administered a successful Class A and B biosolids program over the last 25 years, the nation has witnessed continuing health and environmental concerns raised by the public with Class B biosolids recycling. As such, in the summer of 2003, the Water Department began a process to move to an entirely Class A biosolids process, which could operate in Philadelphia without odors. It entered into a contract with the engineering consultant firm Camp, Dresser & McKee to assist with the procurement of facilities and services for Philadelphia to operate the dewatering station for 20 years and to construct new facilities to produce Class A biosolids products.

Philadelphia Biosolids Services, LLC ("PBS") submitted a proposal on November 24, 2004. PBS offered to build a pair of sludge dryers to produce Class A pellets. On June 19, 2008, City Council passed enabling legislation to allow the proposed contract with PBS to proceed. Mayor Nutter approved the contract with PBS in October 2008 and PBS has been operating the facility since October 13, 2008. The Water Department entered into a contract and lease with the Philadelphia Municipal Authority ("PMA") to operate the Water Department's existing BRC, including a dewatering station, and to construct new thermal drying facilities to produce Class A biosolids pellets. The contract term is up to 25 years, including a five-year renewal option. PMA has contracted with PBS for these services.

The contract included a provision for an interim period of up to five years, during which PBS took over operation of the existing Biosolids Recycling Center. Within the first four years, PBS financed $68,275,000 through the Pennsylvania Economic Development Finance Authority, designed, built and now owns and operates a thermal drying facility that handles all of the sludge processed by the Water Department and makes a Class A product in the form of pellets that is used as fertilizer and has potential as a fuel. PBS is responsible for the disposition of the Class A pellets, thus relieving the Water Department of this burden. The Class A period of operation will last 20 years with a five-year renewal at the option of the Water Department.

NOTE 19: LONG TERM AGREEMENTS (CONTINUED)

B. Biosolids Treatment and Utilization (Continued)

When the contract was executed, the Water Department transferred the remaining 60 employees at this facility to other assignments. Subsequently, the Water Department has also transferred to other units, certain vehicles and equipment that had been part of the existing BRC operation but were no longer needed by the contractor. At this time, most of the fixed assets associated with the facility, except for those related to the discontinued composting operations, remain in service (see Note 7).

Payments for the facility are made to PBS through PMA. Fiscal year 2012 payments totaled $21,835,872, which included partial year operation of the new Class A pellet facility. Fiscal year 2013 was the first full year of operation of the Class A facility with payments totaling $21,275,441. Fiscal year 2014 payments for the facility totaled $20,364,249.

C. Northeast Water Pollution Control Plant Digester Gas Cogeneration Facility

On December 23, 2011, the Department entered into a contract for the construction and leaseback of a 5.6 Megawatt digester gas (biomethane, which is a renewable energy source) cogeneration facility at the Water Department's Northeast WPCP. This project is expected to produce over 40 million kWh per year. The facility was placed into operation on December 12, 2013.

The parties to this agreement, which will bring green power to the Northeast WPCP, are the Philadelphia Water Department ("City"), Ameresco Energy ("Developer"), and Bank of America. The Developer will build the biogas combined heat and power system that runs on methane gas produced on site and incorporates a small amount of natural gas to optimize engine performance. Bank of America, the facility owner and lessor, has formed a special purpose entity "BAL Biogas 1" and the City pays a monthly fee through PMA, the lessee. The Philadelphia Water Department operates the facility. Under a separate but related agreement Ameresco Energy will maintain the equipment. The structure of the deal allows for Bank of America to apply for the IRS code section 1603 grant in lieu of tax credit under the ARRA and ITC rules that amount to 30% of the qualified cost.

In fiscal year 2014, the Water Department paid Bank of America, through PMA, lease payments of $2,427,767, maintenance fees of $1,291,352, and legal, administrative, and other miscellaneous fees of $54,700. Maintenance fees vary per year based on the amount of work required and is paid separately.

NOTE 19: LONG TERM AGREEMENTS (CONTINUED)

D. Laurel Street Combined Sewer Overflow

On June 7, 2011 the City of Philadelphia entered into an Amended and Restated Development and Tax and Claim Settlement Agreement (the "agreement") with Sugarhouse HSP Gaming, L.P. (HSP). In accordance with the agreement, HSP is required to fund development and expansion of the Laurel Street combined sewer overflow. In compensation for this construction, HSP is allotted a five year credit against its real estate taxes and settlement payments otherwise due to the City of Philadelphia. This credit is equal to 28 percent of the amount expended on the Laurel Street Combined Sewer Overflow project. If the credit exceeds the amount of real estate taxes and settlement payments due to the City, the credit carries over to the following year.

As the Laurel Street Combined Sewer Overflow is a capital asset of the Water Department, the Water Department is required to transfer to the General Fund of the City the amount of this credit. This credit is approximately $3.5 million per year during fiscal year 2014 through 2018.

NOTE 20: COMBINED SEWER OVERFLOW PROGRAM

The present NPDES permits require the Water Department to implement a combined sewer overflow program. In older sections of the City, both wastewater and stormwater are conveyed in one pipe to the sewage treatment plant. This is known as a combined system. During certain rain events, the additional stormwater exceeds the capacity of the collection system and/or wastewater treatment plant and causes an overflow. The excess stormwater/wastewater mix known as combined sewer overflow ("CSO") discharges directly to local waterways. The Water Department has 164 CSO points in its collection system.

Since 1997, the Water Department has been committed to restoring the region's waterways to fishable, swimmable, and beautiful rivers and streams that are life sustaining and are an amenity to nearby communities. The PADEP and the Water Department signed a consent order and agreement dated as of June 1, 2011 ("COA") that allowed the Water Department to officially embark on the implementation of its landmark strategy known as the *Green City, Clean Waters Program*. Pursuant to the *Green City, Clean Waters Program*, the Water Department will spend approximately $2.4 billion over the next 25 years ($1.2 billion in 2009 dollars) to use green technologies to substantially mitigate CSOs and enhance the quality of local waterways. The plan also includes wastewater treatment facility enhancements and pipe renewal and replacement.

NOTE 20: COMBINED SEWER OVERFLOW PROGRAM (CONTINUED)

The COA complies with Clean Water Act requirements by adopting the presumption approach to CSO control. The goal under the presumption approach is to eliminate or remove the mass of pollutants that otherwise would be removed by the capture of 85% by volume of the combined sewage otherwise collected in the City's combined sewer system during precipitation events. To ensure this ultimate goal is met, the COA requires that interim water quality milestones at years 5, 10, 15, and 20 of the COA. The interim milestones require the City to achieve specific targets in four categories: (1) Total Greened Acres; (2) Overflow Reduction Volume; (3) Miles of Interceptor Lined; (4) WPCP Upgrades: Design and Construction.

The COA includes financial protections in the event that the costs of complying with the COA exceed the Water Department's projections. Should COA costs increase to extent that the wastewater component of a customer's bill exceed 2.27% of the median household income the City may petition the PADEP for an extension of time to satisfy the COA so that the financial burden does not become excessive on ratepayers.

The COA also includes significant penalties for noncompliance with the 5 year milestone targets. Penalties start at $25,000 per month for each violation (for the first six months) and increase up to $100,000 per month for uncured violations of 13 months or more.

NOTE 21: PLEDGE OF REVENUES

Section 4.02 and 4.04 of the Water bond ordinance of 1989, as amended in 1993, which authorized the issuance of Water and Sewer Revenue Bonds, pledges and assigns to the Fiscal Agent for the security and payment of all bonds, a lien on and security interest in all project revenues and amounts on deposit in or standing to the credit of the: 1) Revenue Fund; 2) Sinking Fund et.al.; 3) Subordinated Bond Fund: 4) Rate Stabilization Fund; 5) Residual Fund; and 6) Construction Fund et al. The fiscal agent shall hold and apply the security interest granted in trust for the holders of bonds listed above without preference, priority, or distinction; provided however, that the pledge of this ordinance may also be for the benefit of a credit facility and qualified swap, or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price and interest on any series of bonds (other than subordinated bonds), on an equal and ratable basis with bonds, to the extent provided by any Supplemental Ordinance or Determination. The amount of this pledge is the equal to the remaining principal and interest outstanding on the Water and Sewer Revenue Bonds. The purpose for the debt secured by the pledge can be found in Note 14 to the financial statements.

NOTE 21: PLEDGE OF REVENUES (CONTINUED)

The following chart displays information related to the pledge as of June 30, 2014:

	Water and Sewer Revenue Bonds
Pledged Revenue Required for Principal and Interest Payments	$2,786.9 million
Term of Pledge	2044
Percentage of Revenue Pledged	100%
Current Year Pledged Revenue	$644.2 million
Current Year Principal and Interest Paid	$302.6 million

The following chart displays information related to the pledge as of June 30, 2013:

	Water and Sewer Revenue Bonds
Pledged Revenue Required for Principal and Interest Payments	$2,613.2 million
Term of Pledge	2041
Percentage of Revenue Pledged	100%
Current Year Pledged Revenue	$626.8 million
Current Year Principal and Interest Paid	$287.2 million

NOTE 22: RISK MANAGEMENT

The City is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The City (except for Aviation Fund operations, the Municipal Authority and PICA) is self-insured for fire damage, casualty losses, public liability, Workers’ Compensation and Unemployment Compensation. The Aviation Fund is self-insured for Workers' Compensation and Unemployment Compensation and insured through insurance carriers for other coverage.

The City covers all claim settlements and judgments, except for those discussed above, out of the resources of the fund associated with the claim. Claims expenditures and liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. These losses include: an estimate of claims that have been incurred but not reported; the effects of specific, incremental claims adjustment expenditures, salvage, and subrogation; and unallocated claims adjustment expenditures.

NOTE 22: RISK MANAGEMENT (CONTINUED)

At June 30, the amount of these liabilities was $349.3 million for the City. This liability is the City's best estimate based on available information. Changes in the reported liability since June 30, 2012 resulted from the following:

Amounts in Millions of USD

Fiscal Years Ending June 30	Beginning Liability	Current Year Claims and Changes in Estimates	Claim Payments	Ending Liability
2012	$353.5	$102.1	$(99.8)	$355.8
2013	355.8	101.6	(101.3)	356.1
2014	356.1	274.2	(281.0)	349.3

The City's Unemployment Compensation and Workers' Compensation coverages are provided through its General Fund. Unemployment Compensation and Workers' Compensation coverages are funded by a pro rata charge to the various funds. Payments for the year were $3.2 million for Unemployment Compensation claims and $62.2 million for Workers' Compensation claims.

The City's estimated outstanding workers' compensation liabilities are $280.2 million discounted at 3.5%. On an undiscounted basis, these liabilities total $367.5 million. These liabilities include provisions for indemnity, medical and allocated loss adjustment expense (ALAE). Excluding the ALAE, the respective liabilities for indemnity and medical payments relating to workers' compensation total $251.7 million (discounted) and $330.9 million (undiscounted). The Water Department's accrued liability for workers compensation was $20.3 million and $22.2 million at June 30, 2014 and 2013, respectively.

During the last five (5) fiscal years, no claim settlements have exceeded the level of insurance coverage for operations using third party carriers. None of the City's insured losses have been settled with the purchase of annuity contracts.

NOTE 23: RESTATEMENT OF NET POSITION / CHANGE IN ACCOUNTING PRINCIPLE

The following restatement of net position was necessary to properly reflect the adoption of GASB Statement No. 65, *"Items Previously Reported as Assets and Liabilities"*:

		(Amounts in Thousands)
Net Position, Beginning Balance of Fiscal Year 2013, as Previously Stated	$	865,320
Expense of Bond Issuance Costs due to the adoption of GASB Statement No. 65		(56,373)
Net Position, Beginning Balance of Fiscal Year 2013, as Restated	$	808,947

NOTE 24: SUBSEQUENT EVENTS

The Water Department self-insures up to $6.5 million for claims and damages under litigation. As of January 31, 2015, the amount of self-insurance available was $0.

Through January 2015, drawdowns totaling $0.4 million represent new loans from the Pennsylvania Infrastructure Investment Authority ("PENNVEST").

Required Supplementary Information

BUDGETARY COMPARISON SCHEDULE
Water Operating Fund
For the Fiscal Year Ended June 30, 2014
(Legally Enacted Basis) (Thousands of Dollars)

Revenues	Budgeted Amounts: Original	Budgeted Amounts: Final	Actual	Final Budget to Actual Positive (Negative)
Locally Generated Non-Tax Revenue	$ 606,789	$ 603,747	$ 607,107	$ 3,360
Revenue from Other Governments	1,350	850	1,946	1,096
Revenue from Other Funds	79,941	52,752	33,966	(18,786)
Total Revenues	**$ 688,080**	**$ 657,349**	**$ 643,019**	**$ (14,330)**
Expenditures and Encumbrances				
Personal Services	116,125	116,065	108,957	7,108
Pension Contributions	59,200	61,486	60,755	731
Other Employee Benefits	43,330	41,044	41,044	-
Sub-Total Employee Compensation	218,655	218,595	210,756	7,839
Purchase of Services	157,164	157,224	133,942	23,282
Materials and Supplies	49,002	48,881	45,946	2,935
Equipment	4,964	5,085	3,468	1,617
Contributions, Indemnities and Taxes	6,602	6,602	6,037	565
Debt Service	205,355	205,355	204,646	709
Payments to Other Funds	58,456	58,456	75,660	(17,204)
Advances and Other Miscellaneous Payments	9,882	9,882	-	9,882
Total Expenditures and Encumbrances	710,080	710,080	680,455	29,625
Operating Surplus (Deficit) for the Year	**$ (22,000)**	**$ (52,731)**	**$ (37,436)**	**$ 15,295**
Fund Balance Available, July 1, 2013	-	-	-	-
Operations in Respect to Prior Fiscal Years				
Commitments Cancelled - Net	22,000	22,000	37,436	15,436
Prior Period Adjustments	-	-	-	-
Adjusted Fund Balance, July 1, 2013	22,000	22,000	37,436	15,436
Fund Balance Available, June 30, 2014	**$ -**	**$ (30,731)**	**$ -**	**$ 30,731**

CITY OF PHILADELPHIA
PENSION PLANS AND OTHER POST EMPLOYMENT BENEFITS
SCHEDULE OF FUNDING PROGRESS
FISCAL YEAR ENDED JUNE 30, 2014

(Amounts in Millions of USD)

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
	(a)	(b)	(b - a)	(a / b)	(c)	(b - a) / c
City of Philadelphia Municipal Pension Plan						
07/01/2008	$4,623.6	$8,402.2	$3,778.6	55.03%	$1,456.5	259.43%
07/01/2009	4,042.1	8,975.0	4,932.9	45.04%	1,463.3	337.11%
07/01/2010	4,230.9	9,317.0	5,086.1	45.41%	1,421.2	357.87%
07/01/2011	4,489.1	9,487.5	4,998.4	47.32%	1,371.3	364.50%
07/01/2012	4,486.8	9,799.9	5,313.1	45.78%	1,372.2	387.20%
07/01/2013	4,799.3	10,126.2	5,326.9	47.39%	1,429.7	372.59%
City of Philadelphia Other Post Employment Benefits						
07/01/2008	$-	$1,156.0	$1,156.0	0.00%	$1,456.5	79.37%
07/01/2009	-	1,119.6	1,119.6	0.00%	1,461.7	76.60%
07/01/2010	-	1,169.5	1,169.5	0.00%	1,419.5	82.39%
07/01/2011	-	1,212.5	1,212.5	0.00%	1,469.2	82.53%
07/01/2012	-	1,511.9	1,511.9	0.00%	1,371.6	110.23%
07/01/2013	-	1,703.6	1,703.6	0.00%	1,416.9	120.23%

Other Supplementary Information

BONDED DEBT FOR THE FISCAL YEAR ENDED JUNE 30, 2014

(Thousands of Dollars)

	ORIGINAL AUTHORIZATION					FISCAL YEAR 2015	DEBT	
Series	Date	Issued	Outstanding June 30, 2014	Maturities	Interest Rates	Service Interest	Principal Requirements	Outstanding June 30, 2015
Revenue Bonds:								
Series 1997 (B)	11/25/97	100,000	63,800	8/2007 to 8/2027	Variable	53	3,400	60,400
Series 1998	12/25/98	135,185	38,025	12/2011 to 12/2014	5.25	998	38,025	-
Series 2005 (A)	05/04/05	250,000	117,250	7/2007 to 7/2035	3.250 to 5.250	5,724	5,535	111,715
Series 2005 (B)	05/04/05	86,105	67,175	8/2007 to 8/2018	Variable	2,691	15,535	51,640
Series 2007 (A)	05/04/07	191,440	137,010	8/2007 to 8/2027	4.00 to 5.00	6,551	-	137,010
Series 2007 (B)	05/04/07	153,595	152,220	11/2007 to 11/2031	4.00 to 5.00	6,923	245	151,975
Series 2009 (A)	05/21/09	140,000	140,000	1/2017 to 1/2036	5.15 to 5.25	7,294	-	140,000
Series 2010 (A)	04/15/10	396,460	251,830	6/2010 to 6/2019	0.500 to 4.110	12,023	49,275	202,555
Series 2010 (C)	08/05/10	185,000	185,000	8/2016 to 8/2030	2.530 to 4.560	9,022	-	185,000
Series 2011 (A)	11/16/11	135,000	135,000	1/2036 to 1/2041	4.50 to 5.00	6,737	-	135,000
Series 2011 (B)	11/16/11	49,855	49,855	11/2016 to 11/2026	4.00 to 5.00	2,461	-	49,855
Series 2012	11/01/12	70,370	67,725	11/2013 to 11/2028	1.00 to 5.00	3,305	2,720	65,005
Series 2013 (A)	08/22/13	170,000	170,000	1/2017 to 1/2043	3.00 to 5.125	8,472	-	170,000
Series 2014 (A)	01/23/14	30,000	30,000	7/2041 to 7/2043	5.00	1,408	-	30,000
Series 2014 (R)	01/23/14	93,170	93,170	7/2016 to 7/2027	3.00 to 5.00	4,219	-	93,170
Pennvest - 1999	04/30/00	6,700	410	7/2007 to 4/2019	1.41 to 2.73	10	80	330
Pennvest - 2009 (B)	10/14/09	28,791	25,090	7/2013 to 6/2033	1.193 to 2.107	288	2,124	22,966
Pennvest - 2009 (C)	10/14/09	41,772	36,231	7/2013 to 6/2033	1.193 to 2.107	417	2,803	33,428
Pennvest - 2009 (D)	03/31/10	71,704	64,521	7/2013 to 6/2033	1.193 to 2.107	747	4,164	60,357
Pennvest - 2010 (B)		27,742	27,133			316	1,394	25,739
Total Revenue Bonds		**2,362,889**	**$ 1,851,445**			**79,659**	**125,300**	**$ 1,726,145**
Total Bonded Debt			**$ 1,851,445**			**$ 79,659**	**$ 125,300**	**$ 1,726,145**

ANNUAL BONDED DEBT SERVICE REQUIREMENT:

Fiscal Year	Interest	Principal	Total
2015	79,659	125,300	204,959
2016	75,377	136,733	212,110
2017	68,402	124,808	193,210
2018	63,533	131,558	195,091
2019	59,079	86,827	145,906

The First Series through the Thirteenth were refunded.

Capitalized Interest added to Construction in Progress in Fiscal 2014 was $3,926,863.
Interest Expense was reduced by the same amount.

SUPPLEMENTAL SCHEDULE OF RATE COVENANT COMPLIANCE FOR FISCAL YEAR ENDED JUNE 30, 2014 (Legally Enacted Basis)

(Thousands of Dollars)

LINE NO.		2014
1.	Total Revenue and Beginning Fund Balance	$ 680,455
2.	Net Operating Expense	(410,797)
3.	Transfer (To) From Rate Stabilization Fund	(22,925)
4.	**Net Revenues**	**246,733**
5.	Revenue Bonds Outstanding	(201,710)
6.	General Obligation Bonds Outstanding	-
7.	Pennvest Loan	-
8.	**Total Debt Service**	**(201,710)**
9.	**Net Revenue after Debt Service**	45,023
10.	Transfer to General Fund	-
11.	Transfer to Capital Fund	(20,194)
12.	Transfer to Residual Fund	(24,829)
13.	**Total Transfers**	**(45,023)**
14.	**Net Operating Balance for Current Year**	**-**

The rate covenant contained in the General Ordinance requires the City to establish rates and charges for the use of the Water and Wastewater Systems sufficient to yield Net Revenues, as defined therein , in each fiscal year at least equal to 120%(coverage A) of the Debt Service Requirements for such fiscal year (excluding debt service due on any Subordinated Bonds). In addition, Net Revenues, in each fiscal year, must equal at least 100%(coverage B) of : (i) the Debt Service Requirements (including Debt Service Requirements in respect of Subordinated Bonds) payable is such fiscal year; (ii) amounts required to be deposited of Subordinated Bonds) payable in such fiscal year; (ii) amounts required to be deposited into the Debt Reserve Account during such fiscal year; (iii)debt service on all General Obligations Bonds issued for the Water and Wastewater Systems payable is such fiscal year; (iv) debt service payable on Interim Debt in such fiscal year; and (v) the Capital Account Deposit Amount for such fiscal year, less amounts transferred from the Residual Fund to the Capital Account during such fiscal year. To insure compliance with the rate covenant, the General Ordinance requires that the City review its rates, rents, fees, and charges at least annually.

Additional Rate Covenant. As long as the Insured Bonds are outstanding, the City covenants to establish rates and charges for the use of the System sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90% (coverage C) of the Debt Service Requirements (excluding debt service on any Subordinated Bonds) in such fiscal year.

COVERAGE A:	
Line 4	**$246,733**
/ Line 5	**$201,710**
= COVERAGE A:	**1.22**

COVERAGE B:	
Line 4	**$246,733**
/ Line 8 + Line 11	**$221,904**
= COVERAGE B:	**1.11**

COVERAGE C:	
Line 4 - Line 3	**$269,658**
/ Line 5	**$201,710**
= COVERAGE C:	**1.34**

APPENDIX II

CONSULTING ENGINEER'S REPORT

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ENGINEERING REPORT

Water and Wastewater Revenue Bonds Series 2015A

Water and Wastewater Revenue Refunding Bonds Series 2015B

BLACK & VEATCH PROJECT NO. 185124

PREPARED FOR

Philadelphia Water Department

18 MARCH 2015

BLACK & VEATCH
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BLACK & VEATCH CORPORATION
SUITE 1690 ONE PENN CENTER, 1617 JFK BLVD., PHILADELPHIA, PA 19103
+1 724-935-3027|FEINGOLDRA@BV.COM

18 March 2015

Mr. Rob Dubow
Director of Finance
City of Philadelphia
1300 Municipal Services Building
1401 J.F. Kennedy Boulevard, 13th Floor
Philadelphia, PA 19102

Dear Mr. Dubow:

In accordance with the requirements of The First Class City Revenue Bond Act (the "Act"), the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, and the amendments and supplements thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth, Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth, Fifteenth, Sixteenth, and Seventeenth Supplemental Ordinances (together the "General Ordinance"), and in accordance with the Water Department's agreements (the "Insurance Covenants") with Assured Guaranty Municipal Corporation ("AGM"), we are submitting herewith our Engineering Report dated 18 March 2015 (the "Engineering Report") prepared in connection with the issuance of Water and Wastewater Revenue Bonds, Series 2015A (the "2015A Bonds") and the Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "2015B Bonds" and collectively referred to as the "2015 Bonds"). This Engineering Report summarizes findings of engineering and financial studies related to the Water and Wastewater Systems of the City. We have made such investigation and review of the books, records, capital improvement programs, and water and wastewater facilities of the Water Department and such other investigations as we deemed necessary. Unless otherwise indicated, capitalized terms used but not defined herein shall have the same meanings assigned to such terms in the General Ordinance.

Projections of revenues and revenue requirements for the Water Department for the seven-year period of fiscal years 2015 through 2021 (the "Study Period") are shown in this Engineering Report. In the preparation of this Engineering Report, we conducted on-site inspections of the major water and wastewater facilities in November and December 2014, and personal interviews with key Water Department operating, engineering, and financial staff during the months of November and December 2014 and February 2015. The general physical condition of the Water and Wastewater Systems has been evaluated using three rating categories – good, adequate, and poor – as described below.

- *Good: The* facility is in condition to provide reliable operation in accordance with design parameters and requires only routine maintenance or minor improvements.
- *Adequate:* The facility is operating at or near design levels, however, non-routine renovation, upgrading, and repairs are needed to ensure continued reliable operation.

- *Poor:* The facility is not being operated within design parameters. Major renovations are required to restore the facility and assure reliable operation. Major expenditures for these improvements may be required.

Subject to the limitations set forth herein, this Engineering Report was prepared for the City of Philadelphia by Black & Veatch Corporation (Black & Veatch) and is based on information not within the control of Black & Veatch. Black & Veatch has not been requested to make an independent analysis, to verify the information provided to it, or to render an independent judgment of the validity of the information provided by others. As such, Black & Veatch cannot, and does not, guarantee the accuracy thereof.

In conducting our analyses and in forming an opinion of the projection of future operations summarized in this Engineering Report, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by Black & Veatch in performing the analysis follows generally accepted practices for such projections. While Black & Veatch believes the assumptions are reasonable and appropriate, and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur that are unknown at this time and/or which are beyond the control of Black & Veatch.

The City may only distribute the complete Engineering Report to third parties, including the above statements and not parts thereof. Any distribution of this Engineering Report or any excerpt thereof to third parties shall be at the City's sole risk. The City's duty to distribute only the complete this Engineering Report, including the above statements, shall not apply to internal City documents derived from the this Engineering Report, that come within the scope of applicable records laws and are requested under such laws by interested citizens.

Based on the Engineering Report and subject to the limitations therein, we offer the following statements and conclusions to indicate the City's conformance with specific requirements which must be met for the issuance of the Bonds, as stipulated in the Act and the General Ordinance:

1. Based on onsite physical inspections and investigations of major system facilities, conducted in November and December 2014, combined with discussions with key Water Department staff at that time and subsequently in February 2015, it is our opinion that the Water and Wastewater Systems are in good operating condition or adequate steps are being taken to return them to good operating condition. The capital improvement budget for fiscal year 2015 and the proposed six-year capital program for fiscal years 2016 through 2021 should provide adequate funds to sustain the systems in good operating condition.

2. Proceeds from the 2015A Bonds are to be applied to: (i) finance major portions of the Water Department's capital improvement program for fiscal years 2015 through 2020 and (ii) pay the issuance costs of the 2015A Bonds. Proceeds from the 2015B Bonds are to be applied to: (i) finance the refunding [a portion of] the outstanding Water and Wastewater Revenue

Bond, Series 2005A, (ii) refund [a portion of] the outstanding Water and Wastewater Revenue Bond, Series 2007A, and (iii) pay the issuance costs of the 2015B Bonds.

3. Project Revenues pledged to secure the Bonds are to be derived from the following sources: all rents, rates, fees, and charges imposed or charged for the connection to, or use or product of or services generated by the Water and Wastewater Systems to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the Water and Wastewater Systems, all grants, payments, and contributions made in aid or on account of the Water and Wastewater Systems exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights, and general intangibles representing the foregoing.

4. Based on actual and estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this Engineering Report) over the amortization period of the Bonds sufficient to meet the payment or deposit requirements of:

    a. All expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems;

    b. All reserve funds required to be established out of such Project Revenues;

    c. The principal or redemption price of and interest on all Existing Bonds and all Bonds issued under the General Ordinance, as the same become due and payable, for which such Project Revenues are pledged; and

    d. The Rate Covenant set forth in Section 5.01 of the General Ordinance.

    The Project Revenues forming the basis for this projection comply with the requirements of the definition of “Project Revenues” contained in Section 2 of the Act.

5. The Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient (including projected revenue increases indicated in the this Engineering Report) to comply with the Rate Covenant for each of two fiscal years following the fiscal year in which the Bonds are issued.

6. It is our opinion the rates and charges for use by the Water and Wastewater Systems should be sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least 90 percent of the Debt Service Requirements (excluding debt service due on Subordinated Bonds) in such fiscal year. The levels of additional service revenue projected

for the Study Period are anticipated to provide for the debt service coverage and requirements of the Insurance Covenants.

7. In our opinion, water and wastewater rents, rates and charges, including projected increases are within generally acceptable ranges for such services.

Very truly yours,
BLACK & VEATCH CORPORATION

Russell A. Feingold
Vice President

Table of Contents

LIST OF TABLES

LIST OF FIGURES

I. Introduction

A. PURPOSE

The purpose of this report ("Report") is to summarize the findings of engineering studies performed by Black & Veatch Corporation ("Black & Veatch") related to the water and wastewater systems of the Philadelphia Water Department ("Water Department"), a self-supporting, enterprise fund utility that is a department within the City of Philadelphia ("City"). The Restated General Water and Wastewater Revenue Bond Ordinance of 1989 and the amendments and supplements thereto as set forth in the First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth, Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth, Fifteenth, Sixteenth, and Seventeenth Supplemental Ordinances (together the "General Ordinance") require the preparation and submission of such an Engineering Report as a condition to be met prior to the issuance of bonds under the General Ordinance.

Subject to the limitations set forth herein, this Report was prepared for the City by Black & Veatch and is based on information not within the control of Black & Veatch. Black & Veatch has not been requested to make an independent analysis, to verify the information provided to it, or to render any independent judgment of the validity of the information provided by others. As such Black & Veatch cannot, and does not, guarantee the accuracy thereof.

In conducting the analysis and in forming an opinion of the projection of future operations summarized in this Report, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by Black & Veatch in performing the analysis follows generally accepted practices for such projections. While Black & Veatch believes the assumptions are reasonable and appropriate, and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur that are unknown at this time and/or which are beyond the control of Black & Veatch.

The City may only distribute the complete Report to third parties, including the above statements and not parts thereof. Any distribution of this Report, or any excerpt thereof, to third parties shall be at the City's sole risk. The City's duty to distribute only the complete Report, including the above statements, shall not apply to internal City documents derived from this Report, that come within the scope of applicable records laws and are requested under such laws by interested citizens.

B. SCOPE

This Report addresses the organization and management, system infrastructure condition, adequacy of system capacity, operation and maintenance practices, and staffing levels of the water and wastewater systems. It includes a review of the proposed Capital Improvement Program ("CIP") of the Water Department. The Report also includes the results of the financial plan of the water and wastewater systems, which are based on a review of the Water Department's financial data, records, and other information.

This Report has been prepared in conjunction with the issuance of Water and Wastewater Revenue Bonds, Series 2015A (the "Series 2015A Bonds") and the Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "Series 2015B Bonds"). The purpose of the Series 2015A

Bonds is to fund a portion of the fiscal year 2015 to fiscal year 2020 six-year CIP, make a deposit to the Debt Reserve Account, and fund the issuance costs of the 2015A Bonds. The purpose of the Series 2015B Bonds is to refund a portion of the outstanding Water and Wastewater Revenue Bond, Series 2005A (the “Series 2005A Bonds”), refund a portion of the outstanding Water and Wastewater Revenue Bonds, Series 2007A (the “Series 2007A Bonds”), and fund the issuance costs of the 2015B Bonds.

In the preparation of this Report, the Black & Veatch team performed site visits of major water and wastewater facilities during the month of November and December 2014. Black & Veatch reviewed the current condition and operation and maintenance of the water and wastewater systems. We conducted inspections of the Water Department’s major water and wastewater facilities in November and December 2014, including the three wastewater treatment plants and the three water treatment plants.

We also met with key Water Department staff during October to December 2014 and in February 2015 to discuss other facilities, regulatory compliance, staffing, and the overall mission of the Water Department. Staff interviewed during our studies included representatives from the following six of the seven divisions within the Water Department: Finance; Operations; Engineering and Construction; Public Affairs; Human Resources; and Planning and Environmental Services.

A financial feasibility was also performed and the financial projections for the seven-year period of fiscal years 2015 through 2021are summarized in this Report.

C. BLACK & VEATCH QUALIFICATIONS

Black & Veatch is one of the largest and renowned global engineering, construction and consulting firms specializing in utility engineering and utility financial management. Experience includes the planning, design, operational analysis, and construction of water, wastewater, and energy generation and transmission systems. In addition, the firm has extensive experience in assisting utilities with the management and financial aspects of utility operations. The firm has been engaged in more than 40,000 projects for over 7,000 clients, including utilities owned by municipalities ranging in size from small villages to large metropolitan regions, investor-owned utilities, industrial and commercial businesses, and agencies of the United States and international government agencies.

The physical evaluation of the Water Department's water and wastewater systems was conducted by experienced personnel of the firm's Water Sector Business which provides study, design, and construction services in all facets of the water and wastewater fields. Water system engineering experience of this business unit includes the design of a broad variety of facilities such as source of supply, pumping stations, treatment plants, and transmission and distribution systems. Wastewater system engineering experience includes design of collection, interceptor, and trunk sewers; pumping stations; treatment systems; and sludge disposal facilities. The Water Sector Business also has extensive experience in operator training, plant management studies, and preparation of operation and maintenance manuals for both water and wastewater systems.

The financial feasibility review was performed by professionals from Black & Veatch Management Consulting (“MC”) which provides services in such areas as utility rate studies, property valuation, depreciation rate studies, financial analysis and planning, non-audit accounting, management and operations analysis, and the preparation of consulting engineering reports for official statements. Having performed various financial studies for the City of Philadelphia Water Department continuously since 1972, including the preparation of engineering reports for the Water and Sewer Revenue Bonds, issued under both the General Water and Sewer Revenue Bond Ordinance of 1974, as amended and supplemented, and the Water and Wastewater Revenue Bonds, Series 1993, 1995, 1997A, 1997B, 1998, 1999, 2001, 2003, 2005, 2007, 2009, 2010A, 2010B, 2010C, 2010D, 2011A, 2011B, 2012, 2013A and 2014A issued under the General Ordinance, personnel of MC are familiar with the Water Department's financial affairs as they relate to revenues, expenses, rates, and other financing matters. Professionals from MC were also involved in the water and wastewater rate hearings for the first phase, related to the overall level of increases for fiscal years 2013 through 2015, which was completed in December 2012, and the second phase, related to stormwater rate revisions, which was also completed in December 2012. As a result of these rate hearings, schedules of water and wastewater rates for retail service have been approved for fiscal years 2013 through 2015, and currently the FY 2015 rates are in effect. Rates applicable to wholesale water and wastewater rates have also been adopted for this same three-year period.

II. Organization and Management

A. ORGANIZATION AND STRUCTURE

The water and wastewater systems serving the City of Philadelphia ("City") and a number of wholesale water and wastewater customers are owned by the City and are operated as a self-supporting enterprise fund utility. The Water Department was established by the Philadelphia Home Rule Charter, approved April 17, 1951 ("Home Rule Charter") as one of the City's ten operating departments. The Water Department is responsible for the planning, construction, operation, and maintenance of the water and wastewater systems; for complying with regulatory requirements; for rate setting and stakeholder engagement; budgeting and detailed cost accounting; and preparation of financial statements for the systems. The data from the Water Department's annual statements are included in the City's combined Comprehensive Annual Financial Report.

The Water Revenue Bureau ("WRB"), which is a division within the City's Revenue Department, is responsible for, billing, collection, and customer accounting for the water and wastewater systems and is currently overseen by the City's Revenue Commissioner. Functions such as customer care and delinquent enforcement are joint responsibilities of the Water Department and the WRB. The City's Finance Director has the ultimate oversight of the WRB.

The audit function for the City is the responsibility of the Office of City Controller. Other services are provided to the Water Department by other City departments. Legal matters affecting the Water Department are the responsibility of the City Solicitor's office, although the Water Department does have a Divisional Deputy City Solicitor assigned directly to the Water Department under the direction of the City Solicitor's office.

The Water Department is headed by the Water Commissioner who is appointed by the City's Managing Director with approval of the Mayor. In February 2011, Howard Neukrug was appointed Water Commissioner after the retirement of former Water Commissioner Bernard Brunwasser. Prior to his appointment as Commissioner, Mr. Neukrug served in multiple positions during his 36 years at the Water Department, including Deputy Commissioner of Environmental Services, Director of Office of Watersheds, and Director of Planning and Technical Services. The Commissioner is assisted in the management of the Water Department by a Chief of Staff, and five Deputy Water Commissioners, including the Deputy Commissioner of Finance; Deputy Commissioner of Operations; Deputy Commissioner of Planning and Environmental Services; the Deputy Commissioner of Compliance; and Deputy Commissioner of Administration and Human Resources. The Water Department is currently organized into seven major divisions: (1) Operations, (2) Engineering and Construction, (3) Finance, (4) Human Resources, (5) Public Affairs, (6) Planning and Environmental Services, and (7) Information Systems & Technology. There is also an Office of Compliance. Each division is divided into units and subunits responsible for carrying out specific functions. Senior management is actively involved in industry associations such as the American Water Works Association (AWWA), Water Environment Federation (WEF), National Association of Clean Water Agencies (NACWA), the Clean Water Council, and the National Resources Defense Council (NRDC), with several staff members contributing to manuals that document best practices in the field of water and wastewater management. An Organization Chart of the Water Department is shown in Figure II-1.

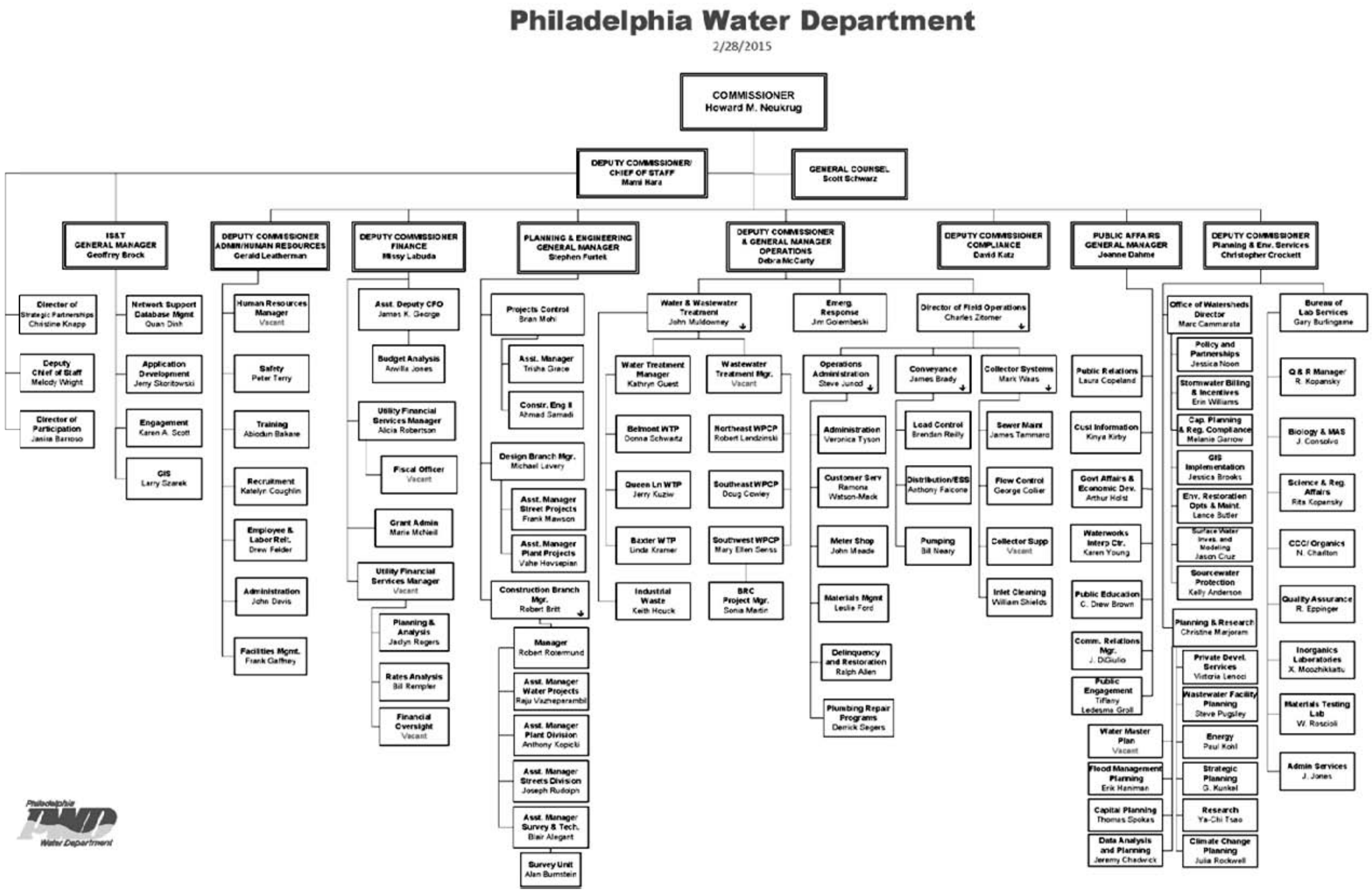


Figure II-I Organizational Chart

As of December 2014, the Water Department had a total of approximately 1,947 employees. Of these, approximately 1,430 are represented by District Council 33, and 290 are represented by District Council 47 of the American Federation of State, County, and Municipal Employees Union. The Water Department's 218 upper management, supervisory, senior engineering, and part time personnel are not eligible for union membership. Additionally, there are approximately 232 employees in the WRB whose positions are funded by the Water Department.

The City recently completed the labor agreement negotiations and has established contracts with both District Council 33 and District Council 47. The contract duration is eight (8) years, but is retroactively effective from July 2009.

The following sections provide an overview of the Water Department's key divisions and the WRB.

1. Operations Division

Over the years, the Philadelphia water and wastewater systems have grown and today are among the most complex, large municipal systems of their kind in the country. Operation and maintenance of these systems requires continuous attention for the following reasons:

- The public drinking water must be safe and comply with both the Safe Drinking Water Act of 1974 ("SDWA") regulations of the U.S. Environmental Protection Agency ("EPA") and state requirements by the Pennsylvania Department of Environmental Protection ("PaDEP").
- The effluent from the wastewater treatment plants discharged to the Delaware River must meet the limits set forth in the plants' National Pollutant Discharge Elimination System ("NPDES") permits.
- The water and wastewater treatment plants, the sewerage and water conveyance systems, and the pumping facilities must be maintained and operated in an acceptable manner that assures cost-effective and continuous performance with minimal adverse impacts to the public and the environment.
- Sewage sludge and other residuals must be properly treated, disposed of, and distributed in accordance with Water Department policy and governing federal and state regulations.

Additionally, the Water Department must provide sufficient forward-looking engineering and planning to ascertain future operating requirements likely to emerge from upcoming drinking water and environmental regulations. Because of the many new regulations that have been and continue to be promulgated, prudent advanced planning and engineering is essential to comply with strict timetables, and to minimize costly expenditures that result from these regulations. Due to the continued need for future regulatory compliance, the Operations Division interacts and works closely with the Planning and Environmental Services Division, the Engineering and Construction Division, and the Office of Compliance in planning for the future potential regulations.

The Operations Division's current organizational structure includes a Deputy Commissioner of Operations, who reports to the Water Commissioner. This Division includes the following key operating units:

- Water Treatment

- Wastewater Treatment
- Water Conveyance
- Wastewater and Stormwater Collection
- Operations Administration
- Industrial Waste

In October 2008, the Water Department privatized the operation of its Biosolids Recycling Center ("BRC") by leasing the BRC to a joint venture led by Synagro Technologies, Inc. ("Synagro") through the Philadelphia Biosolids Services ("PBS") Company for a 20-year period. This change in operations is further discussed in Section IV ("Wastewater System") of this Report.

The Operations Division is responsible for the day-to-day operations and maintenance of the water and wastewater systems and relies on the support of the other six divisions to accomplish its mission. It maintains a close relationship with the Planning and Environmental Services and Engineering and Construction Divisions in the following areas:

- Undertaking long-range planning and engineering.
- Coordinating regulatory agency requirements.
- Producing analytical results required to demonstrate permit and regulatory compliance.
- Preparing construction documents and coordinating design consultants.
- Coordinating construction projects.
- Establishing capital budgets and maintaining the current Capital Improvement Program ("CIP").

Based upon our interviews and investigations, we believe that the organization of the Operations Division is effective for responding to the myriad of issues affecting operations and maintenance. The structure provides for a smooth flow of communication to and from the division level and section levels. Management places great emphasis on holding regularly scheduled staff meetings with superintendents and technical group leaders to communicate plans and receive important feedback.

Based upon our observations and discussions with key staff, we find that the Operations Division coordinates effectively with the Planning and Environmental Services and Engineering and Construction Divisions. Operations related planning and design projects are typically identified by the Operations or Planning and Environmental Services Division and then developed by the Engineering and Construction Division. The Engineering and Construction Division is also responsible for including these projects in the CIP.

To provide for more efficient decision making, the Operations Division has implemented procedures focused on identifying all capital improvements and replacement/rehabilitation project needs at each of its major facilities. The projects are identified on a master list by facility and projected for a six-year capital planning period. This plant-focused process will feed into the Water Department's new Capital Planning Program, as discussed in more detail in the Planning and Environmental Services Division and Engineering and Construction Division discussions below.

The managers of the Operations, Planning and Environmental Services, and Engineering and Construction Divisions have responded capably to the needs of the water and wastewater systems and are well positioned to meet projected needs in the coming years. They possess qualifications and experience commensurate with their responsibilities which enable them to deliver reliable, cost-effective water and wastewater services to the Water Department's customers.

The Operations Division has developed a strong technical staff to supervise its operations and maintenance program. As of February 2015, there are approximately 1,300 employees in the Operations Division. This staffing level is similar or slightly higher compared to the previous two fiscal years. Based on consistent operational performance that meets or exceeds regulatory requirements, as well as discussions with management, it is our opinion that the Operations Division is adequately staffed to meet current system requirements.

2. Planning and Environmental Services Division

The Planning and Environmental Services Division is organized into three specialty related units designed to support the needs of the Water Department. The three specialty-related units include the Planning and Research Unit; Office of Watersheds Unit; and the Bureau of Laboratory Services Unit. This division had 212 budgeted positions with eight vacancies as of June 2014. Descriptions of the units are provided below:

a) **Planning and Research Unit**

The Planning and Research Unit represents a consolidation of the strategic planning and research activities associated with source water; water and wastewater infrastructure planning; strategic energy management planning; and stormwater management on private property. The primary mission is to direct and coordinate strategic planning for each of the Water Department's program areas as well as for capital projects. It is also responsible for the development of traditional research and technical service activities to identify and implement innovative ways to improve the Water Department's current assets, performance, and resources.

Within the Planning and Research Unit there are program units including: Capital Planning, Strategic Planning, Energy Management, Private Development Services, Flood Management Planning, Water and Wastewater Master Planning, Research, Climate Change Planning, and Data Analysis and Planning. Recently, activities related to source water protection research were moved to the Office of Watersheds Unit to better coordinate the holistic requirements of source water management for the Water Department.

- Capital Planning: The Capital Planning program unit has developed and is actively implementing a new capital planning process that focuses on consistent initiation, documentation, justification, alternatives analyses and tracking for all large capital projects. All capital planning will evolve out of this unit, with project identification by operations or planning activities feeding to the capital planning program. An International Water Association asset management study performed several years ago is serving as a foundation for business case evaluations of capital projects, resulting in a 5-year plan that matches-up with utility needs. This initiative is moving towards a 25-year capital plan for all major facilities.
- Strategic Planning: The function of this program unit is to conduct planning on a 25 to 50 year horizon to position the Water Department to meet long-term infrastructure needs, to be prepared to address future challenges, and to be positioned to take advantage of

potential opportunities that arise. One of this unit's key focus areas is Asset Management. The unit supports the Water Department's infrastructure condition assessment, prioritization, and replacement programs. The unit supported the implementation of the CapPlan™ water model and continues to implement the Water Department's Sewer Assessment Program ("SAP"). CapPlan™ will facilitate the prediction of water main breaks before they occur, and the focus of preventative maintenance and repair or replacement activities on the highest priority mains. The software uses physical criteria such as pipe age and material along with risk associated with proximity to nearby buildings and infrastructure to identify priority projects. Planning and Research is in the process of validating the model by assessing the justification of highly ranked projects.

- Energy Management: This program unit is responsible for the implementation of the Utility Wide Strategic Energy Plan, including development of new energy initiatives, conceptual design, and implementation. This initiative is discussed in more detail in Section IV.F.
- Private Development Services: This program unit interacts with the development community and is responsible for implementing the City's stormwater regulations, through review of Stormwater Management Plans ("SMP") and ongoing inspections. It is responsible for reviewing and approving the SMPs for proposed private development greater than 15,000 square feet. Private Development Services verifies ongoing compliance with the stormwater regulations by conducting regular inspections of stormwater infrastructure on private properties to ensure proper operation and maintenance after installation. The Green City, Clean Waters ("GCCW") program relies heavily on changes in the way stormwater is managed on private properties, particularly within the combined sewer portion of the Water Department's system. During fiscal year 2014, the Private Development Services program unit conducted approximately 1,423 inspections of active construction projects to ensure compliance with SMPs. The Department estimates that approximately 237 greened acres were achieved via private development in fiscal year 2014.
- Flood Management Planning: This program unit focuses primarily on City-wide flood management issues, and collaboratively works with the Climate Change program unit. This program unit was formed to assist the City with addressing flooding concerns raised by customers. Generally, this program unit will work with the City to plan to mitigate future flood impacts, as well as to respond and address existing flood issues that are raised by customers.
- Water Master Planning: This program unit leads the Water Department's efforts to ensure a sustainable drinking water supply for future generations. This unit is leading the 2065 Water Master Plan, which is a long-term approach to define the Water Department's water system of the future. Other water supply related activities include: compilation of the Annual Water Audit; conducting hydraulic reservoir and water quality modeling; evaluating potential climate change impacts; leading the Water Department's Iodine-131 track-down and monitoring efforts; and evaluating potential impacts from Marcellus Shale drilling. This group also continues to lead Source Water Protection initiatives, including the Watershed Control Program for the Queen Lane Water Treatment Plant, and the administration of the Delaware Valley Early Warning System, which provides early warning communications and notification for water suppliers on the Delaware and Schuylkill Rivers.

- Wastewater Master Planning: Wastewater Master Planning program unit has been established to provide a strategic planning effort surrounding each of the three water pollution control plants. It establishes processes and plans to ensure long term capital and operational needs are fully supported. Recently, this program unit was responsible for the preparation of each Facility Concept Plan by June 1, 2013 as required by the Long Term Control Plan Update ("LTCPU"). This program unit will continue work on wet weather facility plans in support of future LTCPU commitments. Long term goals will produce comprehensive facility master plans for each plant extending a minimum of 25 years into the future. It is the responsibility of the program to provide a holistic and total water approach to the facility planning efforts which includes the identification of emerging technologies in light of future regulations and operational challenges. Additional information related to the Wastewater Master Plan is included in Section IV of this Report.
- Research: The Water Department employs a variety of processes and equipment at their facilities and strives to continually evaluate and improve performance to meet the ever changing and more stringent standards of tomorrow. This program unit is responsible for identifying new processes and approaches, and conducting research for development and application of new technologies in the Water Department's business and operations. These are tactical initiatives that inform strategic planning efforts. In practice, this is similar to the traditional research and development program the Water Department has historically maintained. One initiative being looked at by this program unit involves the use of air scour technology for backwashing filters at the Queen Lane Water Treatment Plant. The research is focused on performance and the resulting savings in the amount of backwash water used and energy. This program unit is also leading the Water Department's participation in a Water Research Foundation project that is looking at the use of biofiltration at water treatment plants to assess the effectiveness of removing chemical contaminants, as well as future, emerging contaminants. The project will be conducted at the Baxter Water Treatment Plant and is expected to last 12 to 24 months.
- Climate Change Planning: This program unit was recently established within the Planning and Research Unit. A key focus for this program unit is to coordinate with the Mayor's Office of Sustainability. The Office of Sustainability has been pushing to understand the potential future impacts to the City from climate change. The Climate Change Planning program unit will provide input from the Water Department's perspective.
- Data Analysis and Planning: This program unit is focused on organizing and cataloguing the significant amount of information that is being generated by the Water Department, particularly since planning initiatives began for the LTCPU. It provides data and planning for the Private Development Services program unit, and assists with generating annual reports related to the Water Department's LTCPU.

In general, the main challenge for the Planning and Research Unit over the coming years will be the loss of experienced professionals due to normal retirements. This loss of institutional knowledge is occurring during a time of significant growth for this portion of the Water Department. Mitigating the loss of knowledge is the use of technology systems and planning processes to document system performance, as well as planning and research activities that can be accessed by future Water Department staff.

b) Office of Watersheds

The Office of Watersheds ("OOW") Unit is responsible for planning and implementation associated with the traditionally separate, but inherently related, Combined Sewer Overflow ("CSO") and Stormwater Management programs. The objective is to maximize the effectiveness of resources allocated to these programs and to ensure the comprehensive achievement of both programs' goals and regulatory requirements.

OOW developed and is now charged with implementing the Water Department's CSO LTCPU and the GCCW program in accordance with the Consent Order and Agreement ("COA"). The LTCPU program presents an innovative source control-based approach to managing wet weather, specifically combined sewer overflows, and its impact on receiving waters. The GCCW program focuses on using Green Stormwater Infrastructure ("GSI") and the restoration of the natural hydrologic cycle in the urban environment to intercept urban runoff before it reaches the sewer system. OOW recently supported the development and submittal of a draft Municipal Separate Storm Sewer System ("MS4") permit, which is still in the review process with the PaDEP.

With the signing of the COA, OOW has now matured from conducting planning and small scale demonstration studies, to implementing City-wide GSI and associated compliance tracking and reporting.

OOW is generally comprised of seven program units: Policy and Partnerships, Capital Planning and Regulatory Compliance, Green Stormwater Infrastructure Implementation, Surface Water Investigation and Modeling, Environmental Restoration Operations and Maintenance, Stormwater Billing and Incentives, and Sourcewater Protection. Each unit is described briefly below.

- The Policy and Partnerships program unit is responsible for interagency coordination, policy initiatives, funding development and watershed information development. Key activities conducted by this unit include coordination between various City agencies and private organizations (i.e. Licenses & Inspections, Department of Streets, the Fairmount Park Commission, watershed groups and non-profit organizations) to facilitate the implementation of green infrastructure and the development of policies to support these activities. This Unit also seeks and pursues grants and other funding sources to supplement the Water Department's overall budget.
- The Capital Planning and Regulatory Compliance program unit is responsible for planning traditional infrastructure improvements and tracking progress toward meeting permit requirements. The program unit develops and runs the hydrologic and hydraulic models of the watersheds and sewer system, upon which the GCCW program is built and by which the Water Department will measure compliance with the mass load pollutant reductions required under the COA. The program unit also conducts hydraulic modeling to identify solutions for storm flow-related basement flooding which has occurred in certain areas of the City in recent years. Finally, this program unit holds the permits, tracks progress toward meeting permit requirements, coordinates drafting and submittal of annual reports and

ultimately ensures that the Water Department is in compliance with the COA and MS4 permit.

- The Green Stormwater Infrastructure Implementation program unit is responsible for planning, design and implementation of GSI projects City-wide. This includes GSI projects that are designed by the Water Department, primarily for capturing stormwater and infiltrating it into the ground, evaporating it into the air, or slowly releasing it to the wastewater system. This program unit conducts planning to identify potential projects; manages planning and design contracts, and oversees construction of GSI projects.
- The Surface Water Investigation and Modeling program unit is primarily focused on field-based monitoring activities such as monitoring of GSI performance and water quality monitoring in the streams. They are also developing tributary and tidal waters water quality models which will be used to evaluate the effectiveness of the GCCW initiatives in the future.
- The Environmental Restoration Operation and Maintenance program unit is responsible for implementing watershed restoration projects; planning for the operations and maintenance of all GSI; and management of related maintenance contracts. Additionally, this program unit works with private developers to mitigate the impact of development. If a development negatively impacts the ecological system, the Water Department works with the private developer to design and implement an alternative project that offsets the impact of the original development.
- The Stormwater Billing program unit was recently moved from Planning and Research to OOW. This program unit supports the development of the stormwater rate structure; supports parcel data management and data processing; generation of monthly stormwater user fee billing and adjustment files; programmatic management of water account-parcel ID reference; and reviews all applications for credits or appeals under the stormwater billing program which was initiated in a four year phase-in beginning in fiscal year 2011. Stormwater billing provides an opportunity to encourage stormwater management through owner credits for managing stormwater. This program unit is currently supporting planning for modifications to the existing stormwater rate structure.
- The Sourcewater Protection program unit was recently moved from Planning and Research to OOW. The Sourcewater Protection program unit focuses on watershed compliance for the Long Term 2 Enhanced Surface Water Treatment Rule ("LT2ESWTR"). It also works with regional watershed groups to monitor and assess the impact of potential contaminants on the region's drinking water sources. Another area of focus is the Delaware Valley Early Warning System which provides water providers with early notification of contamination events to the raw water supply.

c) Bureau of Laboratory Services

The Bureau of Laboratory Services ("BLS") is the Water Department's environmental laboratory responsible for providing analytical services to meet water and wastewater regulatory requirements and to support various Water Department research initiatives. As the Water Department and regulations evolve, BLS strives to stay positioned to support the Water Department through sampling and analytical support at the levels required for modeling and regulatory development. To this end, BLS continues to expand its analytical capabilities and participates in cutting edge research initiatives. It recently received accreditation for cyanide analysis, and is developing Polymerase Chain Reaction (“PCR”) capabilities to track microbial contaminants. Additionally, it has acquired a liquid chromatograph with tandem mass spectrometers which will enhance its ability to monitor emerging chemical contaminants.

BLS operates a state-of-the-art laboratory facility and is comprised of the following groups: (1) Administrative, (2) Inorganic Laboratory, (3) Materials Engineering Laboratory, (4) Organic Laboratory, (5) Aquatic Biology Laboratory, (6) Scientific and Regulatory Affairs, (7) Quality Assurance, (8) Research, and (9) Watershed Sciences and Cross Connection Control. Its work is critical to maintaining high water quality standards, meeting regulatory reporting requirements, and assisting with the quality construction of the Water Department’s capital improvements. BLS is an accredited laboratory with the Commonwealth of Pennsylvania under Act 25, Chapter 252 for the analysis of environmental samples. BLS also maintains three process control laboratories; one at each of the Water Department’s three wastewater treatment plants.

BLS is responsible for managing compliance with the water quality monitoring requirements under both the federal SDWA and state regulations. Approximately 2,500 drinking water samples are collected each month from the water treatment plants, storage reservoirs, and distribution system. These samples are tested for chemical and bacteriological parameters to assure product quality. BLS conducts drinking water quality surveillance and investigations in the water distribution system. In addition to collecting water samples from approximately 85 standard locations throughout the city, BLS operates more than 30 online real-time water quality monitoring instrument panels that are placed at strategic locations within the system. This system serves as the foundation of the Water Department’s Contaminant Warning System (“CWS”). BLS administered the EPA grant and led the overall development of this program. The CWS is discussed in more detail in Section III.C.

BLS also collects and analyzes water samples related to customer complaints and targeted water quality investigations and research. BLS developed and is responsible for enforcing the City’s Cross Connection Control Program in collaboration with the Water Department of Licenses & Inspections and the Water Department of Public Health. The Cross Connection Control group maintains records for more than 20,000 backflow prevention assemblies installed on City water mains and conducts about 85 facility inspections on average every month.

BLS is involved in monitoring the water quality in Philadelphia’s urban streams. In this capacity, BLS maintains a staff of scientists focused on stream water quality monitoring and aquatic life assessments. These scientists work closely with the OOW’s data collection efforts that are required for the annual reports required under the MS4 and CSO program permits. The Watershed Sciences group is currently assisting the U.S. Environmental Protection Agency (“EPA”), Delaware River Basin Commission (“DRBC”) and the U.S. Geological Survey (“USGS”) with the collection of Delaware River samples for various research efforts to evaluate and ultimately enhance the water quality of the Delaware River.

The Materials Engineering Laboratory ("MEL") is responsible for testing products used by the Water Department and other city agencies. While its focus is on testing products used in construction of the Water Department's infrastructure, it also tests items such as tools, fasteners, and paint for adherence to specifications and performance. The MEL uses a Quality Certification Program ("QCP") to obtain quality materials for the Water Department's construction projects. The objective of the QCP is to protect the quality of major infrastructure materials and products by requiring adherence to accepted principles of quality control at the point of manufacture. In order to be eligible for supplying listed products to the Water Department, the supplier must achieve certification by BLS-MEL. Qualifications include an approved QC manual and evidence that it is consistently followed. Periodic on-site audits of manufacturing facilities are performed by MEL staff.

3. Engineering and Construction Division

The primary responsibility of the Engineering and Construction Division is to implement the Water Department's CIP. To accomplish this task, the division is comprised of the Design, Projects Control, and Construction units.

a) Design Unit

This group performs all engineering functions associated with design and construction of the Water Department's CIP. Generally, projects are identified by the Operations Division and submitted to the Design Section where they are assigned a project number and logged into the Water Department's Capital Program Integrated Tracking ("CAPIT") system. Projects are designed and submitted to Operations for approval, and then passed on to the Projects Control Unit for public bidding. The Water Department has embarked on facilities planning and capital program planning initiatives within the Planning and Environmental Services Division in order to provide additional vision for its capital budgeting process. The result will likely be a new workflow for large capital projects in which these projects go through additional planning steps prior to being designed and incorporated into the CIP. In addition, updates to the CAPIT are being reviewed to incorporate the increase in project volume due to the GCCW initiative and to improve reporting capabilities.

The Design Unit has two large groups (Plant Design and Water and Sewer Design). The Unit maintains its service levels by employing outside consultants to supplement the in-house staff, as necessary. A representative list of the group's activities follows:

- Evaluates and designs new and rehabilitation projects.
- Provides input into maintenance, renovation, and reconstruction issues.
- Reviews and coordinates designs prepared by consultants.
- Reviews shop drawings and reviews requests by contractors for deviations from plans and specifications.
- Maintains record plans.
- Provides engineering assistance to Operations Division during disruptions in water and wastewater service.

- Coordinates with other agencies such as the Pennsylvania Department of Transportation ("PADOT"), Philadelphia Streets Department and Redevelopment Authority, Southeastern Pennsylvania Transportation Authority ("SEPTA") and private utilities.
- Assists in public education of various issues associated with the water and wastewater systems.
- Reviews plans prepared by private developers for adherence to Water Department standards.

b) Projects Control Unit

This unit is currently responsible for developing, maintaining, tracking, and coordinating the CIP. Projects are developed by the facility manager, approved by the section manager and Deputy Commissioner of Operations then submitted to Projects Control where they are prioritized and placed in a timeline to allow budget development for a six-year horizon. Long-term projects are placed in a year 2050 file for incorporation into future budgets. The Water Department began preparation of its capital budget for fiscal year 2016 through 2021 in October 2014, when all divisions were supplied with documentation to complete and return to the Projects Control Unit reflecting their budgetary requests for the next fiscal year. The Water Department has developed and installed a computerized budgeting system to enable each division to prepare budget requests based on historical and current experience. The Water Commissioner reviewed all budget proposals with the assistance of the Projects Control's staff and submitted the Water Department's proposed fiscal year 2016 budget to the City's Planning Commission in December 2014. The Mayor approved the Water Department's Capital Budget and included it as part of his proposed budget to the City Council in March 2015 and is anticipated to be approved by Council by June 30, 2015.

The roles and responsibilities of this unit are evolving as the new Capital Planning Program is being developed and implemented. Large capital projects will now go through a comprehensive planning process which includes standardized documentation, justification and alternatives analysis prior to prioritization and inclusion in the CIP.

c) Construction Unit

This unit assumes responsibility for projects upon issuance of the construction notice-to-proceed. Responsibilities include assurance of contractor compliance with design contract documents, processing change orders if necessary, responding to requests for information and handling payment requests from contractors. The Construction Unit also provides surveying services to assist contractors with construction site stake out and compliance with surveying procedures.

4. Finance Division

The Finance Division is responsible for the development of water and wastewater revenue requirements and rates, the preparation and control of the operating budgets, the management of capital financing programs, the monitoring of customer revenue and rate programs, and the general accounting of operating and capital funds. In addition, the division handles the maintenance of the inventory control, functionalized cost, fixed asset accounting systems, procurement, and preparation and follow-up on documentation of federal and state grants. Further, the division provides support services in the areas of office and facilities management. The Finance Division also oversees the Water Department's Facilities Management, Machine Shop and Security units.

In accomplishing the responsibilities identified above, the Finance Division's major objectives include compliance with all legal reporting requirements, securing goods and services needed to continue operations from vendors, determining a fair and equitable water and wastewater rate structure to provide sufficient funds for both operating and capital programs, monitoring of all budgetary expenditures, promoting performance management measurement and reporting, and developing special accounting systems. Rate related responsibilities are now subject to the authorization of the newly established water, sewer, and stormwater Rate Board.

The Finance Division organizational structure includes a Deputy Commissioner, who reports directly to the Water Commissioner. The division has seven units (Procurement, Grant Administration, Planning and Analysis, Rates Analysis, General Accounting, Budget, and Facilities Management). The authorized staffing level for the division is 188. As of June 2014, 160 of the 188 positions were filled. The majority of these vacancies are in the Facilities Management unit.

a) Core financial services are provided by the Planning and Analysis, Rate Analysis, Procurement, Budget, General Accounting, and Grants Administration units.

b) The Facilities Management unit is responsible for all building maintenance work (concrete, electrical, HVAC) for all Water Department structures except the three water and three wastewater facilities. The Security unit and the Machine Shop unit both report directly to the head of the Facilities Management unit.

Key management positions within the Finance Division are staffed with highly capable individuals, some of whom are long-term Water Department employees. In recent years, the Finance Division has experienced retirements of key staff positions. Prior to these retirements, the Water Department had initiated succession planning, recruiting, and training efforts to address these retirements. The Finance Division is organized to efficiently respond to financial needs from other divisions of the Water Department as well as work with other City of Philadelphia departments and other entities outside of the City government, as necessary.

5. Human Resources Division

The Human Resources Division provides administrative and human resources planning services to the various divisions and their respective units. Some of the key objectives of this division include:

- Coordinating traditional personnel functions with initiatives in manpower and management training.
- Ensuring that personnel recruitment, placement, training, career development and safety programs are consistent with the Water Department's long-term human resources needs and affirmative action goals.
- Initiating policy development related to administration and human resources management.
- Ensuring the effective communication of policies and procedures generated by management throughout the Water Department.

- Coordinating labor management initiatives and employee relations programs with the Water Department's long range operational plans.

The four units in this division are Safety, Training, Recruitment, and Employee and Labor Relations. Authorized staff for the Human Resources Division is 24, and there are currently three vacancies.

The Training Unit led the development of the Water Department's Apprentice Program, which started in 2006. Under this program the Water Department seeks out motivated high school students interested in applicable trades (e.g., science, electrical, and mechanical) and hires these students as apprentices. The students work part-time as an apprentice until they graduate, and are then hired full-time under the apprentice program. Once they complete the required training, they will be hired as full-time civil service employees. Managers and mentors working with apprentices and graduates of the program speak highly of the program. The Water Department continues to fine tune this program and is looking to improve the quality of candidates selected in the future.

The Safety Unit utilizes an industrial hygienist to build training programs and support Water Department safety committees in their goal to assure a safe work environment. As noted in Table II-1, long term efforts have shown a general downward trend to leveling off of paid days lost. A particularly serious vehicle accident involving an employee in the Survey Unit resulted in an increase in the number of paid days lost for the period of fiscal years 2010 through 2014.

Table II-1 Safety Record

FISCAL YEAR	PAID DAYS LOST
2005	1,452
2006	1,873
2007	1,430
2008	1,757
2009	1,737
2010	2,616
2011	3,099
2012	3,010
2013	3,005
2014	3,297

6. Public Affairs Division

The Public Affairs Division supports and enhances the stakeholder engagement services performed by the Water Department's six other divisions to provide better service to the public. Public Affairs plays a critical role of representing the work performed by the Philadelphia Water Department to the public and representing the interests of the public to the Water Department. The Public Affairs Division consists of seven units as shown in the inset box. These units, together with their primary areas of focus, are presented below.

Public Affairs Division Includes Seven Units

- Community Relations
- Customer Information
- Fairmount Waterworks Interpretive Center
- Government Affairs
- Green City, Clean Water Outreach/Stewardship
- Public Education
- Public Relations

a) Public Education Unit

As its name implies, this Unit is responsible for carrying out the Water Department's public education outreach programs, particularly programs that bring information and educational materials about the Water Department's initiatives to schools, neighborhood groups, community events, and the individual water customer. The Public Education Unit has been responsible for the Water Department's strong publications and extended outreach programs that are geared toward providing a better understanding of urban watersheds, and the part each citizen and industry plays in protecting these valuable resources.

b) Fairmont Waterworks Interpretive Center

Among the many projects developed and being implemented by the Public Affairs Division is the Fairmount Water Works Interpretive Center ("Center"), which was opened in October 2003. The Center traces the history of the Schuylkill River and illustrates the complicated relationship between human civilization and the river. The Center is staffed by four environmental educators, and features interactive exhibits on the urban watershed; a Water Laboratory; a classroom/media center; and interpretive displays. The Center has attracted approximately 40,000 visitors per year during the last two fiscal years consisting of school children, adult groups, professional groups and the general public. The Center has formed strategic partnerships with partners such as the School District of Philadelphia, the Partnership for the Delaware Estuary, the University of Pennsylvania Institute for Environmental Studies, the Academy of Natural Sciences, and others. The Center is also in the final stages of developing a capital campaign for expanding into the unused space of its complex. This expansion will facilitate the formation of the Water Department's Urban Waters Institute.

c) Public Relations Unit

This Unit ensures that the Water Department's communications with the press are effectively delivered. The Water Department takes a proactive approach to informing the press about its mission. Topical press kits are routinely sent to the media to address subjects such as illegal use of fire hydrants, drought, and seasonal variations in the frequency of water main breaks.

The Public Relations Unit has developed a *Philadelphia Water Department Communications Guide* to serve as a reference information document. This guide provides information on what the Public Affairs Division does, the target audiences, the key topics, and the communication methods.

For each of these areas, the Public Relations Unit will be focusing on identifying its target audience and determining how to best reach out to that audience. Engagement strategies will include all forms of social media.

Public Affairs Division Key Topics:

- Community Relations
- Construction Projects
- Customer Services
- Customer Responsibility
- Education & Stewardship
- Flooding Green City, Clean Waters
- Rates
- Source Water Protection
- Stormwater Fee
- Stream Restoration
- Wastewater & Stormwater Services
- Water Quality
- Water Main Breaks & Sewer Repair

d) Government Affairs Unit

This Unit ensures that the Water Department interfaces on a continual basis with City Council, the Mayor's Office, and the State Capital. Legislation, at all levels of government, is monitored and routed to the appropriate Water Department staff for their review.

Another function of the Government Affairs Unit is to provide customer assistance for commercial customers that have stormwater fee inquiries. These inquiries are typically more technical in nature and require more effort to address, as opposed to routine stormwater billing customer inquiries which are handled by the Customer Information Unit.

e) Customer Information Unit

The Water Department is very customer service oriented. Although water and sewer billing complaints are primarily handled by the WRB, the Customer Information Unit within Public Affairs Division also handles customer calls, provides basic information, and directs calls to the appropriate units within the Water Department and WRB, as necessary. The Water Department Call Center currently handles billing inquiries that overflow from the WRB Call Center. As mentioned above, the Government Affairs Unit assists with inquiries from commercial customers. All operational complaints are handled by the Water Department Call Center. Operational complaints are tracked using a computer system.

During fiscal year 2014 the Unit received about 163,000 calls, with an average wait time of 1 minute, 24 seconds. Significant emphasis is placed on obtaining input from customers and using their input to continuously improve service.

In November 2012, the Water Department and WRB Call Centers were virtually connected through the implementation of a cloud technology. The new technology provides a host of new tools including Interactive Voice Response ("IVR"), call backs, and robust reporting. The two centers are still working on fine-tuning metrics and performance measurements.

The Public Affairs Division utilizes a Water Quality Council ("WQC") comprised of approximately 30 representatives from various civic, environmental, industrial, and academic organizations, including Water Department staff. The WQC meets quarterly to discuss policy and strategy for public education, and provides advice and support for the Water Department's public education programs.

The Public Affairs Division uses many different tools to communicate Water Department messages to their diverse target audiences. Choosing the appropriate tool requires an understanding of both the message to be communicated and the audience receiving the message.

Public Affairs Division Caters to Diverse Groups of Stakeholders:

- Visitors
- Individual Rate Payers
- Groups of Rate Payers
- Businesses
- Partners
- City Council/Elected Officials
- Regulators

The Public Affairs Division uses a range of communication tools including the following:

- Web and digital media;
- Phone/email;
- Print and collateral materials;
- Community meetings and public events;
- Partnerships and Citizens Advisory Councils; and
- Tours and demonstration projects.

7. The Office of Compliance

The Office of Compliance (formerly known as the Office of Environmental Policy and Planning) was created in June 2001 and is responsible for proactively managing and addressing the various environmental issues applicable to the operation of the Water and Wastewater System. These responsibilities include:

- Negotiating and challenging, as necessary, all permits including NPDES, Stormwater, Clean Air Act, and Total Maximum Daily Loads (“TMDLs”).
- Developing an overall strategy for the Water Department for the handling of new and emerging regulatory challenges, such as the TMDLs for Volatile Organic Compounds (“VOCs”), Polychlorinated Biphenyls (“PCBs”) and sediment loads, CSO implementation, and Sanitary Sewer Overflow (“SSO”) implementation.
- Reviewing, commenting on, and challenging, as necessary, any new laws and regulations affecting the Water Department.
- Testifying before applicable government agencies and commissions to advance and advocate the Water Department’s position.
- Responding effectively to any potential environmental problems or issues should they arise.
- Developing environmental policies that guide decision-making on operating and capital budget issues.
- Ensuring that all environmental reporting to governmental agencies is timely and accurate.
- Negotiating and resolving any environmental violations alleged by any regulatory agency.

- Negotiating and entering into contracts with the Water Department's suburban customers related to the Water Department's environmental initiatives or the customer's violations of the terms of its contract.
- Responding to both formal and informal requests for information as requested by any regulatory agency.

8. Information Science & Technology

The Information Services and Technology ("IS&T") unit located within the Water Department is part of the City's Office of Innovation and Technology ("OIT"). The IS&T unit is headed by a Director, who directly reports to the OIT, and at the functional level also reports to the Commissioner of the Water Department. The IS&T unit provides Geographic Information Systems ("GIS"), software, hardware, network support, and other technology-related services for the water, sewer and storm water utility operations.

Personnel that are focused on critical operational tasks such as monitoring and maintaining the treatment plants' Supervisory Control and Data Acquisition ("SCADA") and Distributed Control Systems ("DCS") are not part of the IS&T unit.

Under the leadership of the new IS&T Director, an IS&T unit organizational development initiative was launched in May 2012. As a first step, within the first 100-days, a comprehensive assessment of the IS&T unit was performed. The assessment indicated the need for improvement in the following major areas:

- Clear delineation of roles and responsibilities.
- Development of policies and procedures.
- Institutionalization of IT tradecraft best practices.

To address these needs IS&T has implemented the following key actions:

1. IS&T Unit Organizational Restructure: The IS&T unit has been re-organized into the following four teams, consisting of a total of 45 staff:
    a. System Team: This team is responsible for the operations, maintenance and planning activities associated with the physical network and server environment, database management and new technologies.
    b. GIS Team: This team is responsible for operating and maintaining the Water Department's ArcGIS database; the Water Department asset layers; and the quality control of geolocations in the GIS database.
    c. Business Team: This team focuses on IS&T portfolio management (historical, current, and planned applications), development and management of business requirements and documentation; and project management.
    d. Applications Team: This team is responsible for applications development, maintenance, and production support.
2. IT Best Practices: As part of organizational development, IS&T unit has adopted best practice initiatives including the following:

a. Training: With the goal of adopting best practices and sustaining a skilled workforce, the IS&T unit is currently providing its staff various training opportunities, including:

    i. Information Technology Infrastructure Library ("ITIL") best practices: This includes an ITIL 3-day training for managers and supervisors. The goal of this initiative is to better align and integrate the IS&T units and their service offerings with the Water Department's Strategic Plan and general needs.

    ii. Application Development Skills in the areas of mobile applications development using Zamoran; android applications and visual studio applications development; and a boot camp on SQL development.

    iii. In collaboration with OIT, staff is provided online training options using CBT Nuggets, and Plural Site.

b. Knowledge Exchange: Staff is also provided opportunities to visit data centers of other utilities such as Philadelphia Gas Works ("PGW"), which enables learning through knowledge networking.

c. Issues and Documentation Management: To enhance consistent logging and tracking of issues and enhance project management, IS&T has implemented the JIRA application. In conjunction with issues documentation, IS&T staff are also now using GITSTACK tool to consistently adopt and maintain source code documentation for applications that are developed by IS&T.

3. Major IT initiatives: A few of the key IT initiatives that have been implemented or in progress are:

    a. Operation Sunset: Through this initiative, IS&T has completed the decommissioning of the HP3000 mini mainframe data center. While in some applications, the historical data was converted from Image 3000 to other accessible formats, some other mainframe applications have been completely rewritten and providing access through a web user interface.

    b. New Data Center: A new data center is currently being constructed and is expected to be completed within three months of the date of this Report. Some of the key features of the new data center include new fire suppression; new server racks; efficient ventilation; new dry coolers, and scalable capacity.

9. Water Revenue Bureau

Established under the City Charter, the WRB reports to the Revenue Commissioner and ultimately to the Office of the Director of Finance. The WRB has the responsibility for meter reading, billing, and collection of water and wastewater revenue for services provided by the Water Department. WRB responsibilities also include enforcement of payments and customer relations. 242 of the 270 budgeted positions are currently filled.

Since 1992, the WRB and the Water Department have increased their level of coordination with respect to billing and collection of the Water Department's revenue. In accordance with a 1992 agreement, both the Office of the Director of Finance and the Water Commissioner monitor collection of water and wastewater revenues. The cooperation between these two City agencies has improved reporting on revenue collections, implementation of monthly billing, collection of aged receivables by private collection agencies, and enforcement actions. Monthly meetings with the WRB and the Water Department executive staffs, and meetings between the Office of the Director of Finance, Water Commissioner, and other key personnel, serve to maintain communications and enable prompt and direct response to issues involving both the WRB and the Water Department.

In September of 1997, the Water Department and the WRB began the implementation of the Automatic Meter Reading ("AMR") Program ("AMR Program") involving the replacement of all water meters with new meters equipped with radio transmitter meter reading devices. Installation commenced on September 11, 1997, and was completed as of March 2013. This program has greatly improved the accuracy of billing, which has resulted in fewer billing disputes and has had a positive effect on customer service and collections. In addition to the increased revenue that typically results from such billing program improvements, the AMR Program significantly reduced the costs of meter reading and related support. From 2011to 2013, as required in the Water Department's long-term meter reading contract with ITRON, the service provider, conducted battery replacement of the vast majority of Encoder, Receiver, and Transmitter units ("ERTs"), thus extending their capability to approximately 2025. During Fiscal Year 2014, the Planning and Research unit began studying second generation Advanced Metering Infrastructure ("AMI"), which is intended to replace the AMR System. AMI technology surpasses AMR technology by providing an array of enhanced customer service and operational capabilities, in addition to regular meter reading. The AMI team, comprised of representatives of the Water Department and the Water Revenue Bureau, continues to provide executive decision-makers with data and information to develop a strategic plan for the funding and implementation of the AMI System.

The Water Department collaborated with the WRB in the implementation of a new billing system. The Basis2© Customer Billing System was implemented in fiscal year 2008 and replaced the twenty-five (25) year old application previously supporting WRB. The Water Department and WRB continue to work together to develop, enhance, and validate several applications and reports related to the billing system. The Water Department in collaboration with WRB has initiated a process for integrating a few stand-alone applications such as the Water Revenue Assistance Program ("WRAP") database and Agency Receivables application in to the Basis2© system.

B. STRATEGIC PLAN AND MANAGEMENT INITIATIVES

The Water Department's primary mission is to provide a reliable supply of high quality drinking water for residential and community needs, and effectively manage wastewater and stormwater to enhance and sustain the region's watersheds and quality of life. The five (5) key elements of the Water Department's mission are:

- Provide the Greater Philadelphia region with integrated water, wastewater and stormwater services.
- Protect public health.
- Protect the environment.
- Support the sustainable growth of the City.
- Continue to be America's most innovative utility.

The Water Department's goals focus on maintaining the utility's financial health; increasing effectiveness of core service delivery; reinvesting in infrastructure; improving customer relations; increasing work force strength; conducting long-term facility and system planning; achieving sustainable operations; and supporting the Philadelphia business community. A key element of implementing the plan involves evaluating the skills and staffing needed to meet the Water Department's current and future needs. Additionally, each division will be assessing its responsibilities with respect to achieving the Water Department's vision. Therefore, it is possible that the Water Department's current organizational structure may change in the coming years as the implementation of the Strategic Plan moves forward. To fulfill this mission the Water Department has initiated a number of key utility management initiatives. A summary of the major initiatives is as follows:

- ***Green City, Clean Waters Program.*** In June of 2011 the Water Department signed a COA with the PaDEP that provides the basis for reducing the impact of CSOs to the region's streams and rivers. The COA requires the Water Department to implement its LTCPU also known as the GCCW program. This program commits the City to spending approximately $2.4 billion ($1.2 billion in non-inflated 2009 dollars) over 25 years to reduce the impact of CSOs. In September 2012, the EPA Region 3 and the Water Department agreed to an Administrative Order for Compliance on Consent, which incorporates the Water Department's COA with the PaDEP. The GCCW program has so far been extremely successful as evidenced by the following achievements:
    - GCCW has become a model "adaptive management strategy" looked to by other cities including New Orleans, Chicago, Baltimore, and Portland;
    - GCCW has garnered the support of diverse organizations including the EPA, the NRDC, the Clean Water Council, the City Administration and Council, and the private developer community;
    - GCCW has now been transitioned from the initial planning phase to an active implementation phase; and
    - GCCW is on a sustainable path as it has been institutionalized.

  More information on the scope, objectives, and financial impact of GCCW is found in Sections IV, V, and VI of this Report.

- ***Strategic Plan Implementation.*** In February 2011, the Water Department initiated the process of updating its strategic plan with the goal of identifying and implementing strategic initiatives to make the Water Department the model 21st Century Urban Water Utility. The Water Department finalized this plan in February 2013. The Plan, which is based on the Effective Utility Management ("EUM") principles advocated by AWWA, WEF, and other industry organizations, identifies the following eight (8) goals designed to enable the Water Department to achieve its vision of a 21st Century Urban Water Utility goals:
    - Improve Customer Service, Outreach, and Assistance
    - Increase Workforce Strength and Diversity
    - Improve the Financial Health

- Invest in Capital Planning
- Protect our Infrastructure
- Uphold Excellence in Core Services
- Ensure Sustainable Utility Operations
- Support a Strong and Diverse Philadelphia Business Community

- ***Succession Planning.*** The Water Department senior management positions are staffed with highly qualified and trained personnel. This high level of experience exists despite the number of retirements that have occurred over the past seven years as a result of the Deferred Retirement Option Plan ("DROP") created by the City in 1999 and through normal retirements and other staff turnover. Through the DROP program, approximately 535 Water Department staff has retired as of September 2014. To date, these positions have been primarily filled from within the ranks of the Water Department's staff, thus maintaining a high level of institutional knowledge and dedication to the City.
- ***Energy Management.*** In preparation for the deregulation of the power industry in Pennsylvania, which occurred in January 2011, the Water Department adopted a Utility Wide Energy Plan in 2010. The plan included projections of energy rates, conservation management strategies, and preliminary evaluations of renewable energy sources. The Water Department continues to implement the Utility Wide Energy Plan at all levels of the organization to reduce energy consumption while simultaneously realizing financial and environmental benefits. A key renewable energy project, the Northeast Water Pollution Control Plant Co-generation Facility, is complete and in operation.
- ***Security.*** The Water Department continues to implement security improvements to key facilities in accordance with its Vulnerability Assessment that was completed in 2002 and as needed to enhance security. These improvements focus on preventing, monitoring, or detecting access to key facilities, as well as maintaining critical operations during potential emergency situations. In 2013, the Water Department completed the implementation of the CWS which will facilitate early detection and efficient response to a water quality contamination occurrence in the distribution system.
- ***Enhanced Planning Services.*** The Water Department has multiple planning and asset management initiatives underway or recently completed including: enhanced Capital Program Planning; implementation of CapPlan™ Water for prioritization of water main repairs and replacements; completion of two of three phases of the Cityworks® work order management system for street side assets; facilities planning for the three water pollution control plants; and a long-term water supply plan. Over the next several years, these tools will assist the Water Department in identifying, justifying, and prioritizing capital improvements.

C. CONCLUSIONS

It is our opinion that the Water Department is organized in a manner which provides for efficient system operations and maintenance, and that the divisional and sub-divisional structure provides for delegation of management authority and responsibility through various levels and work units. A good working internal relationship exists among divisions to facilitate execution of all phases of the Water Department's responsibilities.

Despite the fact that a number of senior level staff are retiring, senior management positions are staffed with highly qualified and trained personnel. Recent senior staff retirements have been filled with experienced Water Department professionals and succession planning for future retirements is in progress. Senior management professionals that oversee critical operating, engineering, financial, planning, and support functions have worked at the Water Department for an average of almost 24 years. This institutional experience provides stability as the Water Department moves forward with key initiatives.

III. Water System

A. INTRODUCTION

The Philadelphia Water Department ("Water Department") began service in 1801 with the dedication of two pumping stations that raised water from the Schuylkill River to two elevated tanks located where City Hall now stands. From there the water flowed to the homes of early Philadelphia through wooden pipes. The Water Department has continued to serve the City's growing needs without interruption since this beginning, through continual adaptation of the latest technological advancements in water service.

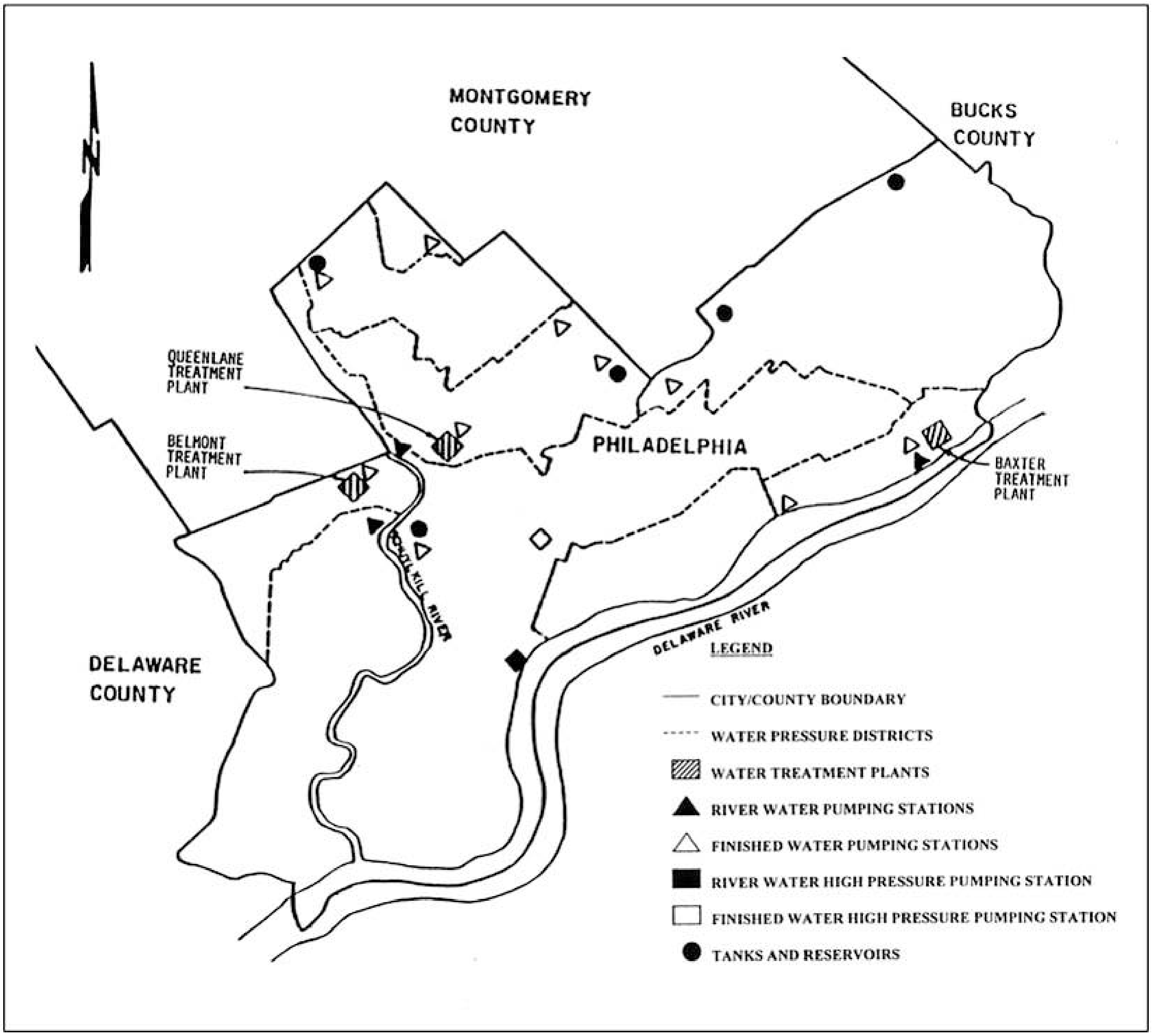
Today, the major elements of the water system include three river supply intakes, three treatment plants, storage facilities and a conveyance network. The water system service areas and major facilities are shown in Figure III-1 on the following page.

B. WATER SUPPLY

The Water Department presently supplies water to Philadelphia and portions of Montgomery County and Delaware County. Prior to FY 2015, the Water Department provided water service to Bucks County under a wholesale contract with the Bucks County Water and Sewer Authority ("BCWSA"). This contract provided for the sale of treated water to Bucks County at a maximum rate of up to 35 million gallons per day (mgd). In March 2014, BCWSA provide notice that it would cease purchases of water on July 1, 2014. Impacts to revenue are discussed in Section VI (Financial Requirements) of this Report. The service to Montgomery and Delaware Counties is provided under an agreement signed in fiscal year 2000 with Aqua Pennsylvania, a subsidiary of Aqua America (formerly known as Philadelphia Suburban Water Company), which provides for the sale of treated water at a rate of up to 9.5 mgd.

The Water Department obtains approximately 58 percent of the water supply from the Delaware River and 42 percent from the Schuylkill River. These withdrawals are authorized under water entitlements granted to the City of Philadelphia by the Pennsylvania Department of Environmental Protection ("PaDEP") and the Delaware River Basin Commission ("DRBC"). The DRBC is an interstate agency responsible for regulation of water resources in the Delaware River Basin. It is accountable to the states of Delaware, New Jersey, New York and Pennsylvania, and to the federal government.

The Water Department participates with the DRBC on drought and flow management planning and is adequately prepared to address future drought conditions should they occur. A 1984 Agreement among the states dependent on the Delaware River established patterns of division for the Basin's resources during formally declared drought periods. This agreement and resulting drought management plans have been used to effectively manage drought emergencies declared in the past and are expected to adequately address future drought emergencies. The Water Department participated in flow management planning with the DRBC as an advisor to Pennsylvania on the Supreme Court Consent Decree Parties Flow Working Group for the Delaware River. This effort led to the parties signing a Flow Management Plan that ensures adequate supplies for all users and provides protection against salt line migration, which is a significant concern for the Water Department.



Note: In January 2005, both the River Water High Pressure Pumping Station and the Finished Water High Pressure Pumping Station were decommissioned. These facilities are those shown above and remain in place, but have been taken out of service. The standard pressure fire protection system, which has been utilized for the provision of fire protection service to Center City for many years, replaces the decommissioned non-potable water high pressure fire system.

Figure III-I Water System Facilities

The Water Department's ability to draw water supply from both the Schuylkill and the Delaware Rivers provides flexibility and additional drought protection as it is not dependent on a single source of supply. The current permit for water withdrawal with PaDEP allows for the withdrawal of 423 mgd and 258 mgd from the Delaware River and Schuylkill River, respectively. These allocation limits are well above the treatment capacities of the Water Departments three treatment plants. The Department is currently re-negotiating its raw water allocation permit with PaDEP, but the Water Department does not anticipate any changes to its allocation limits. As of February 2015 Philadelphia County, which includes the majority of the Water Department's customers, was not under a drought watch or warning as declared by PaDEP.

1. System Capacity

The Water Department delivers water through an integrated system that reflects the PaDEP and DRBC entitlements, and contains raw water intake capability, treated water capacity, and storage capacity commensurate with those entitlements. The total rated capacity of the three water treatment plants is 546 mgd. The capacities of other elements within the water supply system appear in Table III-1. Compared with these capacities, the average annual daily treated water supplied in fiscal years 2011, 2012, and 2013 was 250 mgd, 237.1 mgd, and 238.4 mgd, respectively.

2. Population

The population served by the Water System is approximately 1,610,165 as per the 2013 Census data estimate and Water Department estimates, of which 1,553,165 were located in the City and approximately 57,000 were in Delaware and Montgomery Counties. While this represents slight population growth within the City, growth for the service area is generally expected to be flat out to 2030, with the City declining slightly over the next few years and stabilizing, and the suburban population growing slowly and then stabilizing. Declining average customer consumption and reduced leakage in the water distribution system are accounting for lower water delivery from the treatment plants. This value stood at an all-time low of 237.1 mgd for the fiscal year ending June 30, 2012. The reduction in consumption will impart both a slight reduction in water revenue and marginal operating costs. In summary, the water treatment, storage, and distribution facilities are of adequate capacity to provide for the present and foreseeable future requirements.

Table III-1 Water System Capacities

FACILITY	RAW WATER PUMPING CAPACITY	ALLOCATION, MAX DAILY WITHDRAWAL	HYDRAULIC TREATMENT CAPACITY	CAPACITY FOR PARTNERSHIP FOR SAFE WATER	WATER STORAGE CAPACITY	
					Raw Water	Treated Water
	mgd	mgd	mgd	mgd	mg	mg
Queen Lane Plant	200		150	140	207.2	85.0
Belmont Plant	170		110	86	83.3	42.1
Schuylkill Supply		258				
Baxter Plant	480		420	320	170.0	206.8
Delaware Supply		423 PaDEP				
Distribution System*					---------	271.0
System Totals	**850**	**681 PaDEP**	**680**	**546**	**460.5**	**604.9**

mg – million gallons
mgd – million gallons per day
* Includes treated water stored at East Park Reservoir, Roxborough Basins and Standpipes, Somerton Standpipes, Foxchase Tank, and Oak Lane Reservoir.

C. WATER SYSTEM PLANNING INITIATIVES AND COMPLIANCE

The Water Department has maintained continuous compliance with all drinking water regulations in effect at the time. This Section describes the Water Department's water quality initiatives, compliance with present regulations, and planning initiatives and actions being taken to meet anticipated future regulations, water system demands and Water Department goals.

1. Partnership for Safe Water

Since January 1996, when the Water Department signed a voluntary agreement with the U.S. Environmental Protection Agency ("EPA") to participate in the Partnership for Safe Water Program (the "Partnership"), the Water Department has been committed to reducing turbidity, an industry standard measure of water quality and water treatment effectiveness. The purpose of the multi-phased Partnership is to provide a format for drinking water utilities around the country to survey their facilities, treatment systems, operations, maintenance, and management procedures in order to identify opportunities and implement practices that will enhance the water system's potential to prevent the entry of *Cryptosporidium, Giardia*, and other parasitic organisms into the treated water. The Water Department joined approximately 300 other water treatment utilities in evaluating and assessing their water treatment procedures against extremely stringent performance goals. The self-assessments and other reviews focused on improvements that can be made without incurring substantial capital or operating expenditures. Through these efforts, the turbidity of Philadelphia's drinking water is commonly about five times lower than required by state and federal requirements. The stringent quality standards of the Partnership result in less available capacity (546 mgd) when compared to the total hydraulic capacity (680 mgd) of the treatment plants. Recent peak demands are still well within the Partnership capacities for each treatment plant.

In 1998, Philadelphia became the first major city in the U.S. with multiple drinking water plants to receive an EPA Director's Award for meeting certain additional requirements of the Partnership for Safe Water (Phase III of the program), including completion of a self-assessment and peer review. The Water Department continues to meet or exceed all of the Phase III requirements. In 2013, the Water Department received the 15-year Director's Award marking fifteen consecutive years achieving Partnership for Safe Water - Phase III Goals. This represents a tremendous accomplishment and is a tribute to the Water Department's dedication to providing the best possible service to its customers. The Water Department's association with the Partnership has resulted in overall lower turbidity of its finished drinking water and enhanced public health protection. These efforts have also enabled the Water Department to meet the requirements of the Interim Enhanced Surface Water Treatment Rule and the Long Term 2 Enhanced Surface Water Treatment Rule.

In the spring of 2011, the Water Department extended its commitment to the protection of public health and the Partnership process by becoming a charter member of the Partnership for Safe Water's Distribution System Optimization program. This program builds upon the self-assessment and optimization pillars of the Water Treatment Program but focuses on the distribution system. Recognizing that water quality changes from the time the water leaves the plant until it reaches the customer tap, this program is designed to encourage and assist utilities in evaluating their distribution system operations and developing strategies for improvement. The program emphasizes improving distribution system integrity, particularly in the areas of water quality, hydraulic reliability, and physical security. The cornerstone of the program is the self-assessment through which the utility identifies limiting factors that will be used to develop an improvement plan.

The Water Department completed the Phase II data collection and reporting requirements and submitted those results to the Partnership. The Water Department is currently working toward completion of Phase III, and recently completed the self-assessment the results of which are being used to develop an improvement plan. The intent of the self-assessment is to identify areas for system optimization that do not require capital improvements. The self-assessment focuses on nineteen (19) performance limiting factors ("PLFs") identified by the Partnership. To complete the assessment the Water Department conducted a series of internal interviews during which younger staff interviewed experienced "subject matter experts" in each of the PLF areas to identify opportunities for improvement. In the process, the Water Department also identified performance improvement initiatives ("PIIs") or areas for improvement that are not specifically addressed in the Partnership. A steering committee is compiling the interview results and developing the improvement plan for submittal to the Partnership in the coming months. Upon approval of the plan by the Partnership, the Water Department will implement the plan.

2. Regulatory Requirements

The water operations of the Water Department are subject to the requirements of the Safe Drinking Water Act of 1974 ("SWDA"), as amended in 1986 and 1996. The 1986 Amendments extended the regulatory agenda of the EPA to include, among other things, the development of drinking water standards for 83 contaminants, criteria by which surface water supplies would be required to utilize filtration performance standards for disinfection, and the banning of lead-containing materials from distribution and home plumbing systems. The 1996 Amendments changed the emphasis of developing rules only slightly, but these latest Amendments did stress some new issues such as the protection of source waters, annual reports to consumers on the quality of their drinking water, regulation of filter backwash water within treatment facilities, and the establishment of a state revolving loan fund. Since 1998, several additional rules have been implemented.

The Interim Enhanced Surface Water Treatment Rule ("ESWTR") and the Stage 1 Disinfectants and Disinfection Byproducts Rule ("Stage 1 D/DBPR") were both promulgated in December 1999 and became effective in January 2002. Long Term 1 Enhanced Surface Water Treatment Rule extended the provisions of ESWTR to smaller systems and was promulgated in January 2002. The Filter Backwash Recycling Rule was promulgated in May 2001 and became effective in December 2003. The Radionuclides Rule was promulgated in December 2000 and also became effective in December 2003. The Arsenic Rule was promulgated in March 2001 and became effective in January 2006. The Long Term 2 Enhanced Surface Water Treatment Rule ("LT2ESWTR") and the Stage 2 Disinfectants/Disinfection Byproducts Rule ("Stage 2 D/DBPR") were promulgated in January 2006 and became effective in March 2006 with full compliance required as of April 2012. The Groundwater Disinfection Rule ("GWR") was promulgated in November 2006 and became effective January 2007, but is not relevant to the Water Department who relies exclusively on surface water. Several of these key regulations are discussed below. The Unregulated Contaminant Monitoring Rule 1 ("UCMR-1") was promulgated in September 1999, followed by Unregulated Contaminant Monitoring Rule 2 ("UCMR-2") in January 2007 and most recently by Unregulated Contaminant

Monitoring Rule 3 ("UCMR-3") in May 2012 which required a new round of contaminant monitoring to be conducted between 2013 and 2015.

The Water Department has an extensive water quality monitoring program to assess the potential impacts of, and ensure compliance with, the SDWA regulations. The Water Department's BLS analyzes approximately 2,500 drinking water samples each month collected from the water treatment plants, storage reservoirs, and distribution system. The Water Department's Planning and Environmental Services Division tracks the development of regulations, provides input into the formulation of the regulations, and works cooperatively with the Operations Division to conduct research (laboratory, pilot, and plant scale) to ensure the Water Department is positioned to meet future regulations.

Philadelphia treated water quality meets all existing drinking water regulations, including the full requirements of the Stage 2 D/DBPR and LT2ESWTR, as required since April 2012.

a) Lead and Copper Rule

The Lead and Copper Rule was promulgated in June 1991. It addresses the control of copper and lead that may leach from home plumbing systems. Compliance with the rule is based upon treatment technique requirements that are triggered if measured lead and copper levels exceed the action levels of 0.015 mg/l for lead or 1.3 mg/l for copper at more than 10 percent of customer taps sampled.

Compliance Status: The Water Department is in full compliance with the regulation. The Water Department has taken steps to further optimize its treatment process including an aggressive public outreach effort to inform customers how they can minimize leaching of lead from home plumbing. The Water Department has a uniform treatment approach at all three water treatment plants, using optimized pH and a zinc orthophosphate corrosion inhibitor. The Water Department adds zinc orthophosphate at a dose of 1.5 ppm phosphate to water to control the rate of metal loss by corrosion in the water supply network, which includes the internal piping in residences and commercial or industrial facilities. The Water Department achieved a 90th percentile lead level of 0.005 mg/L and a 90th percentile copper level of 0.3 mg/L based on 2014 monitoring results. The next required sampling under this rule will occur in 2017. The Water Department is in compliance with the associated Optimized Corrosion Control Treatment ("OCCT") permit, which requires finished water levels of phosphate to be greater than 0.2 mg/L as phosphorus and finished water pH to be between 6.8 and 7.8.

b) Total Coliform Rule (TCR)

The TCR was published in 1989 and became effective in 1990. It set goals and limits for the presence of total coliforms in drinking water and required water systems to monitor for total and fecal coliform at specific locations throughout their distribution systems. EPA published revisions to the TCR in February 2013. The Water Department participated in technical reviews that supported the revisions to the rule and has provided ongoing support in the national awareness of rule changes. The Revised Total Coliform Rule ("RTCR") goes into effect April 1, 2016.

The RTCR removes the maximum contaminant levels ("MCL") for total coliform that was established under the TCR, and focuses more on using detection of total coliform as a means of identifying and addressing potential contamination issues. The rule also establishes criteria that enable systems to transition to reduced monitoring requirements. Such a system creates incentives for better system operation and has the potential to reduce monitoring burden. The RTCR maintains the MCL for *E. Coli* and the associated required actions.

Compliance Status: The Water Department is in full compliance with the TCR and its performance has been exceptional. The Water Department has not had any total coliform violations from its 80 monitoring locations in recent history. Further the Water Department is prepared to maintain compliance under the RTCR when it becomes effective in April 2016.

c) Disinfectants/Disinfection By-products Rule

This rule regulates levels of disinfectants and disinfection by-products. Stage 1 of the rule was promulgated in December 1998 and became effective on January 1, 2002. Stage 2 of this Rule was promulgated in January 2006 and became effective on March 6, 2006 with compliance monitoring required as of April 2012. These rules contain maximum residual disinfectants levels ("MRDLs"), MCLs for disinfection by-products and a treatment technique for total organic carbon (TOC) removal. The Stage 1 Rule reduced the MCL for total trihalomethanes ("TTHM") from 100 micrograms per liter (µg/L) to 80 µg/L and established an MCL of 60 µg/L for the sum of five haloacetic acids ("HAA5"), another group of disinfection by-products. In addition, MRDLs were established for chlorine (4 mg/L), chloramines (4 mg/L), chlorine dioxide (0.8 mg/L), chlorite (1.0 mg/L), and bromate (0.010 mg/L). The Stage 2 Rule maintains the TTHM and HAA5 MCLs at 80 µg/L and 60 µg/L, respectively, but changes the method of calculating the system annual average from running annual averages to locational running annual averages ("LRAAs"). This regulation also requires compliance with Operation Evaluation Levels ("OELs") for TTHM and HAA5. The OELs are indicators of operational performance and are designed to assist in identifying operational issues that could lead to future non-compliance. Under Stage 2, the Water Department is no longer required to report the annual averages of TTHMs and HHA5, only the LRAAs.

Compliance Status with Stage 2: Under this regulation the Water Department completed an Initial Distribution System Evaluation to identify sample locations for compliance monitoring and submitted the resulting report to EPA as required. The Water Department initiated compliance monitoring in April 2012 as required and is in full compliance with LRAAs for the second quarter of fiscal year 2015 for all locations ranging from 29 to 46 µg/L for TTHMs and 25 to 34 µg/L for HAA5s. The Water Department is also in compliance with the OELs and the 4.0 mg/L MRDL for chloramines, with the highest individual sample measuring 1.98 mg/L.

d) Enhanced Surface Water Treatment Rule

The Interim Enhanced Surface Water Treatment Rule ("IESWTR") rule was promulgated in December 1998 and became effective on January 1, 2002. This Rule lowered the turbidity treatment technique level to 0.3 nephelolometric turbidity units ("NTU") in 95 percent of the samples from the previous level of 0.5 NTU. It also set a maximum turbidity of 1.0 NTU in the finished water and required installation of continuous turbidity monitors on each filter. The Rule requires that operating procedures be revised and follow-up investigations be conducted if individual filters are found to exceed specific monitoring criteria.

The LT2ESWTR was promulgated in January 2006 and became effective on March 6, 2006 with compliance monitoring to begin in April 2012. Regulatory requirements under the LT2ESWTR maintained the filter performance criteria of IESWTR but added treatment requirements based upon the concentration of *Cryptosporidium* or *E. coli* in the source water of individual treatment plants. The Rule required microbial monitoring (2 years of monthly *Cryptosporidium* and *E. coli* monitoring) to determine each drinking water treatment plants average source water *Cryptosporidium* level. Based on this level, the treatment plants are placed in different "bins" with varying removal and/or inactivation credit requirements, with higher influent *Cryptosporidium* levels requiring greater removal or inactivation. Utilities must meet their resulting requirements by implementing enhanced treatment practices as defined in the "microbial toolbox." The microbial toolbox defines a range of treatment, prevention or optimization options that utilities can implement to obtain the additional removal and/or inactivation credits required to meet the treatment technique of this Rule.

Compliance Status: The Water Department is in full compliance with all requirements of this Rule. Through its participation in the Partnership program, the Water Department maintained filtered effluent turbidity at levels less than or equal to 0.1 NTU more than 99.9 percent of the time during fiscal years 2013 and 2014.

The Water Department, utilizing the analytical services of the BLS, completed the microbial monitoring under LT2ESWTR. Based on the monitoring results, the Belmont and Baxter Treatment Plants had average *Cryptosporidium* levels less than 0.075 oocysts/L and qualify for Bin 1, meaning that no additional treatment is required. The Queen Lane Plant's average *Cryptosporidium* level exceeded 0.075 oocysts/L but was less than 1.0 oocysts/L, putting the Queen Lane Plant into Bin 2. Bin 2 plants are required to achieve 1.0 log removal/inactivation credit through implementation of microbial toolbox components. The Water Department is meeting their 1.0 log requirement by maintaining the very low levels of turbidity in the combined and individual filters effluents ("CFE" and "IFE") required to achieve the CFE and IFE credits, and by implementing a Watershed Control Program ("WCP"). The Water Department submitted the WCP plan to PaDEP for approval in April 2011. PaDEP approved the WCP as a back-up credit to the Water Department's CFE and IFE credits. Thus, the WCP will provide 0.5 log back-up to ensure the Water Department will not fall out of compliance should the filter effluents exceed CFE or IFE requirements. The Water Department submitted WCP annual reports for 2012 and 2013 to PaDEP as required in order to maintain the WCP credits.

The Water Department will begin the second round of microbial monitoring under LT2ESWTR in April 2015.

e) Consumer Confidence Reports Rule

The 1996 SDWA Amendments require the Water Department to issue an annual report on treated water quality to its consumers, called the Consumer Confidence Report ("CCR"). In January 2013 EPA released the Consumer Confidence Report Delivery Options Memorandum, which allows water system to deliver CCRs electronically.

Compliance Status: The Water Department has done this annually in the format required by the Rule. The 2014 CCR was delivered electronically in accordance with the 2013 requirements. The Water Department's CCR goes beyond the requirements and provides educational information regarding source water protection and the water treatment process, along with information about research and public outreach initiatives.

f) Filter Backwash Recycling Rule (“FBRR”)

The FBRR became effective in December 2003. The recycle streams regulated by the FBRR are filter backwash water, sludge thickener supernatant, and liquids from dewatering processes. The rule requires recycled flows to pass through all processes of the treatment plant in order to maintain removal credit for *Cryptosporidium.* In the case of conventional treatment facilities like those of the Water Department, this requires the return of recycled streams prior to or concurrent with the point of primary coagulant addition. The rule also requires the Water Department to maintain records related to the wastewater streams generated at each treatment plant.

Compliance Status: The Water Department currently discharges all of its filter backwash and settling basin waste streams to the sewer system for treatment at the wastewater treatment plants, with the exception of the spent backwash water at the Baxter water treatment plant. The Baxter filter backwash water is recycled to the raw water basin, ahead of the point of coagulant addition, for reprocessing through the complete treatment process. Therefore, the Water Department is in compliance with the requirements of the FBRR.

g) Source Water Assessment Program

The 1996 SDWA Amendments required each state to develop a Source Water Assessment Program, designed to stress protection of the source water prior to treatment. The Water Department was selected by PaDEP to lead a joint effort with Aqua Pennsylvania and Pennsylvania-American Water Company to perform a source water assessment of water intakes along the Schuylkill River and its tributaries during fiscal years 2001 and 2002. A similar effort was undertaken with utilities that utilize the Delaware River as a source of supply. In all, the program involved 50 surface water intakes on the Schuylkill and Delaware Rivers.

More recently the focus of this effort has been to utilize the knowledge gained from the Assessments to develop and implement source water protection plans and programs.

Compliance Status: The Water Department completed Source Water Protection Plans for the Schuylkill and Delaware Rivers in 2006 and 2007, respectively. The Protection Plan for the Schuylkill River served as the foundation for the WPC that was approved by PaDEP in 2012. The Water Department has submitted WPC annual reports to PADEP as required to maintain the LT2EWSTR credit.

h) Arsenic Rule

The Arsenic Rule became effective on March 3, 2001 and established an MCL of 0.01 mg/L for total arsenic. The compliance date for systems with arsenic levels that exceed the MCL is January 23, 2006.

Compliance Status: The Water Department is in compliance with the Arsenic Rule. Arsenic levels in the finished water supply are below method limits of detection.

i) Radionuclides Rule

The Radionuclides Rule became effective on December 8, 2003. It retained the MCLs for combined radium-226 and 228 (5 pCi/L) and gross alpha (15 pCi/L) and established a new MCL for uranium of 30 μg/L.

Compliance Status: The Water Department is in compliance with the Radionuclides Rule. Compliance monitoring in 2011 and 2014 resulted in Radium-226 and uranium levels in the finished water supply below method detection limits. Detectable levels of Radium-228 and gross alpha have been recorded but were in all cases less than one-half of the MCL. In 2011 the Water Department began voluntarily measuring alpha emitters to capture radioactive iodine.

In April 2012, the Water Department completed a year-long monitoring program aimed at understanding the source and extent of Iodine-131 in their source and drinking waters. This effort was in response to data released by the EPA in the wake of the Fukushima nuclear incident in Japan.

The Water Department's research into this issue revealed that industry understanding of the source and occurrence of Iodine-131 in drinking water is limited. In an effort to expand the knowledge base and discussion, the Water Department jointly hosted an expert workshop with the Water Research Foundation ("WRF"), Water Environment Research Federation, and the American Water Works Association ("AWWA") in January 2013. Experts participating in the workshop represented the drinking water sector, the wastewater sector, regulatory agencies, academia, and public health organizations. The intent of the workshop was to establish the current state of knowledge of Iodine-131 and discuss next steps for the Water Department and the water industry as a whole. Workshop proceedings were published in October, 2013 through the WRF.

j) Unregulated Contaminant Monitoring Rule (UCMR)

The EPA has used the UMCR to collect data on unregulated contaminants since 2001. UCMR-1 and UCMR-2 were conducted from 2001 to 2005 and 2007 to 2011, respectively. Each of these rules required utilities to monitor for 25 unregulated contaminants. UCMR-3 was published in 2012 and went into effect in 2013. UCMR-3 requires monitoring for 30 contaminants during 2013 to 2015.

Compliance Status: The Water Department completed UCRM-1 and 2 monitoring as required and completed the monitoring required under UCMR-3 in 2013. The results were published in the CCR as required.

3. Water Security

The Water Department continues to implement the recommendations of the Vulnerability Assessments conducted water system wide in 2002. These recommendations included the installation of physical security measures (e.g., fencing and alarm systems), cyber security measures, emergency generators, and real-time water quality monitors at key locations in the treatment process. Additional improvements included the conversion from gaseous chlorine to liquid sodium hypochlorite and the use of security guards at critical facilities. In the coming years the Water Department plans to spend approximately $10 million toward additional security initiatives.

In 2008 Philadelphia was one of four cities nationwide to receive an EPA Water Security Initiative Contamination Warning System ("CWS") Demonstration Pilot grant. Through this program the Water Department developed a comprehensive and integrated system to detect, confirm, respond to, and remediate contamination of the distribution system. The primary components of the CWS are the on-line water quality monitoring, enhanced response sampling and analysis procedures, customer complaint surveillance, enhanced security monitoring, and public health surveillance. These five core components are integrated via a Geographic Information Systems ("GIS")-based dashboard that builds upon Cityworks® and provides Water Department management access to all of the information and tools real-time and in a user friendly application. The enhanced access to all of this information enables the Water Department to more readily identify and respond to a contamination event.

The final component of the program is the Consequence Management Plan, which defines in detail how the Water Department will respond to a contamination event. This plan utilizes the National Incident Management structure and defines the roles and responsibility of management and various units in a response situation. It was developed in cooperation with city, state and federal response agencies. The program is viewed as a success by both the Water Department and EPA. The Water Department will continue to optimize the system for response scenarios. They have also found it valuable on a day-to-day basis. The real-time information allows not only BLS but other operational units within the Water Department to monitor water quality in the distribution system and to better understand how the system operates. It has also promoted and continues to promote communication both within the Water Department and with outside agencies. The Water Department intends to continue to use the CWS for routine system monitoring and to conduct periodic full scale exercises to maintain their preparedness in the event of an emergency.

The Water Department is a founding member of the EPA Region 3 Laboratory Response Plan for Drinking Water, which was recently incorporated into the Water Laboratory Alliance ("WLA") under the Environmental Laboratory Response Network. Through the WLA, the Water Department has access to federal, state and local laboratories for analytical support during a water quality contamination event. The Plan defines the roles of various agencies that might be involved in a response, includes protocols for initiation of the laboratory network, and details sample transport, QA/QC, and data reporting requirements.

4. Water Accountability

The Water Accountability Committee of the City of Philadelphia exists to promote a high level of efficiency in the water delivery and billing processes, and perform the strategic planning necessary to implement lasting improvements in water and revenue loss reduction. The committee is a multi-functional team including personnel from the Water Department and the WRB. The Water Loss Control Program strives to reduce the volume of non-revenue water. Major elements of this program are: compilation of the annual water audit, progressive leakage management, customer meter management, revenue protection, reduction of unauthorized consumption and piloting of new technologies. The first of two elements are discussed in this Section, the remaining are discussed in Section III.G. Through these programs, the Water Department has reduced non-revenue water by approximately 15 percent since fiscal year 2000.

a) Annual Water Audit

The Water Department has been very active in promoting new auditing methods through the AWWA, and was the first utility in the United States to adopt the best management water audit methodology published in 2000. They have received recognition as an industry leader in this regard. The method accounts for all water as either consumption or losses (apparent or real). Apparent Losses are the paper losses due to customer meter inaccuracies, data handling error, and unauthorized consumption. These losses cause water utilities to lose a portion of the revenue to which they are entitled and understate the aggregate consumption of the customer population. Real Losses are physical losses, largely leakage. These losses inflate the marginal water production costs for water utilities. Summary results of the annual audit for fiscal years 2004 to 2013 are presented in Table III-2. The structure of the audit methodology is important in that it fixes a cost impact on the volume of both apparent and real losses. It can be seen that, despite a reduction in overall loss volumes, the overall cost impact of losses continues to increase, largely due to increased costs to supply water and the costs of uncaptured revenue due to apparent losses. Hence, enhanced water loss control is still a large priority for the Water Department. It is noted that the WRB launched the new Basis2© Customer Billing System in January 2008. This system continues to be refined and outfitted with various reporting capabilities to better analyze customer consumption trends and anomalies.

The Infrastructure Leakage Index (ILI) gives a measure of leakage control standing and is the ratio of the current level of leakage to the technically low limit believed achievable (unavoidable level) if leakage must be completely minimized due to scarce resource availability, shortages, or other causes. For systems not confronting such pressures, AWWA recommends targeting an ILI of no more than 8.0. The Water Department's loss control activities have been effective in reducing their ILI over the past decade from a high of 12.1 in 2004 to a low of 8.8 in 2013.

The Water Department continues to hold leadership roles in AWWA and other industry organizations and is at the forefront in advancing proactive water loss control methods in the US water industry. This has included outreach to a number of state and regional water regulatory agencies to introduce the water audit methodology. During these activities, the Water Department has had opportunities to share its best practice approaches with many agencies, assist other utilities in compiling water audits and benchmark the Water Departments performance with national and international water providers. Benchmarking activities provide beneficial information regarding realistic goals for water losses. In aggregate, all of these activities contribute to the development of better performance indicators and benchmarks and lead to greater improvement in the area of water loss.

Table III-2 Water Audit Results 2004 – 2013

COMPONENT	FY2013	FY2012	FY2011	FY2010	FY2009	FY2008	FY2007	FY2006	FY2005	FY2004
Water Supplied, mgd	238.4	237.1	250.0	244.5	245.8	250.7	255.3	253.8	260.3	263.0
Billed Consumption, mgd (may include some unmetered consumption)	152.1	152.6	158.4	165.9	174.6	175.8	169.5	177.0	176.9	176.9
Non-revenue Water, mgd	86.3	84.6	91.6	78.6	73.3	74.9	85.8	76.8	83.4	86.1
Percent Non-revenue Water by volume	38.5	38.4	39.7	34.9	32.3	32.4	36.3	32.7	34.6	35.4
Percent Non-revenue Water by cost	21.1	22.2	23.2	16.3	12.5	15.1	17.5	13.0	12.4	9.0
Unbilled Authorized Consumption, mgd	5.4	3.3	2.1	2.0	2.1	2.1	2.3	2.4	2.3	2.4
Unbilled Authorized Consumption Costs ($1,000)	$1,398.4	$1,052.0	$866.9	$778.5	$713.8	$717.2	$214.3	$191.0	$155.2	$159.7
Apparent Losses, mgd	20.5	21.4	23.1	17.0	15.0	19.0	21.9	15.2	14.2	11.1
Apparent Losses costs, million	$43.1	$43.1	$43.5	$30.0	$22.2	$27.3	$30.8	$20.3	$19.1	$10.9
Real Losses, mgd	60.4	60.0	66.3	59.6	56.2	53.8	61.6	59.2	66.9	72.6
Real Losses costs, million	$8.2	$8.3	$7.4	$5.9	$4.8	$4.9	$5.1	$4.3	$3.9	$4.1
Infrastructure Leakage Index, dimensionless	8.8	10.2	11.5	9.9	8.9	9.0	10.3	9.9	11.0	12.1

Philadelphia Water Department – Water Revenue Bureau Annual Water Audit Summary

b) Leakage Management

The Water Department manages leakage via a combination of traditional leak detection and repair activities (find and fix approach) and by advanced technologies such as pressure management (predict and prevent approach). The Leak Detection Survey program has operated successfully within the Water Conveyance Section for over thirty years. Leak detection crews use state-of-the-art technology (leak correlator and correlating leak loggers) to proactively survey the water distribution system for hidden leaks. In fiscal year2014, 775 miles of small diameter mains were surveyed, with corrective measures abating approximately 14.9 mgd of leakage. Summary results of this proactive program are presented in Table III-3.

Table III-3 Leak Survey

SERVICE PARAMETER	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14
Leak Survey (miles of pipeline)	953	1,133	995	1,137	962	775
Leakage Abated (mgd)	31.38	28.51	36.4	26.2	20.5	14.9

As mentioned above, the Water Department is also utilizing inline technology to detect leaks in large-diameter transmission mains and is investigating the use of pressure management to control leakage by using District Metered Areas (DMA). More on these initiatives is discussed in Section III.G.5 (Piloting New Technology).

5. Water System Planning

Consistent with the Strategic Plan, the Water Department has several planning initiatives ongoing that are specific to assessing the long-term needs of the water supply and system.

a) Water Master Plan

The Water Department is currently in the process of developing a 50 year water system master plan (50-year Water Master Plan) that will chart the course for its water utility through the year 2065. The 50-year Water Master Plan is being undertaken to meet treatment, system, and customer demands through the year 2065; provide reliable and continuous service; remain fiscally responsible; and influence future water quality regulations.

The 50-year Water Master Plan is being completed in three primary phases. The first phase consists of assessing the historical and current operating conditions with respect to source of supply, treatment, distribution, demand, regulatory issues, and water security. There are then three workshops planned to collectively assess issues related to regulatory issues and water quality; demand; and system redundancy and resiliency.

The second phase consists of evaluating current asset condition, development of level of service goals, and development of factors, drivers, and boundary conditions for future planning. The evaluation of assets will consist of deriving an asset inventory for both linear and above ground assets that includes a condition assessment. Level of service goals will be developed for supply, treatment, and distribution functions. Factors, drivers, and boundary conditions will look at elements such as functional costs, climate change, changing customer demographics, and the regulatory environment to assess how the Water Department's water utility will need to evolve to become the utility of the future.

The final phase will consist of developing planning scenarios, assessing alternative planning scenarios, and then developing a concrete water system master plan for what the Water Department deems as the "Utility of the Future." The final 50-year Water Master Plan will include a 25 year capital improvement program that results from the overall planning initiative.

In terms of timing, the overall planning initiative is to last from approximately July 2015 through December 2015, with each phase noted above lasting approximately six months. Another important initiative being completed on a parallel path is a wastewater system master plan. In general, at the end of both planning initiatives, the Water Department intends to have a "one water," "utility of the future" concept that focuses the Water Department on managing all aspects of water for the Philadelphia region.

b) Climate Change Planning

The Mayor's Office of Sustainability is leading the Climate Change Program for Philadelphia. A vulnerability analysis for the Water Department's assets will be incorporated into the City's overall plan that is scheduled for completion by 2015. Vulnerability to sea level rise will be evaluated using the Water Department's tidal models and mapping with sea level rise data. The Water Department is involved with the U.S. Army Corps of Engineers and others on a regional investigation of storage options to capture excess flood flows. Securing the water supply to protect it from flooding and other impacts associated with sea level rise is a high priority. The security of the electric supply is also vital to water supply, and the Water Department is preparing a plan to use cogeneration to reduce peak load days which will help ensure the security of the electric supply while also reducing peak load charges.

D. WATER TREATMENT PLANTS

The water system is served by the Baxter, Queen Lane, and Belmont Water Treatment Plants. The Baxter plant treats water from the Delaware River, while the Queen Lane and Belmont plants are supplied by the Schuylkill River. All three plants provide similar treatment, consisting of raw water sedimentation, coagulation, flocculation, clarification, dual media filtration, disinfection and fluoridation. Finished water can be stored at the treatment site for later distribution, or discharged directly to the distribution system. Portions of each treatment facility date from the early 1900s. Major improvements and additions were completed at the Belmont plant in 1965 and at the Queen Lane plant in 1960. The Baxter plant went on line as a new rapid sand filtration plant in 1959. The plants have been upgraded continuously over the years to address structural issues and to incorporate advancements in equipment and technologies. All three plants are fully automated and have recently completed replacement of their original distributed control systems such that they have state of the art technology that offers enhanced system security and flexibility with a Microsoft Windows®-based interface.

A centralized preventive maintenance program serves common components of the three water treatment plants. Components that require either periodic repair or rehabilitation are placed on a master schedule that includes both preventive and corrective maintenance activities. Priorities for actions are defined using this schedule and reviewed at periodic intervals. Each plant maintains a preventive maintenance program for equipment components that require inspection and lubrication on a more frequent basis than the components covered by the centralized program's master schedule.

The Water Department continues to be proactive in researching and implementing new technologies and operating practices in order to optimize treatment and prepare for future regulatory requirements. A decade long pilot study precipitated the ongoing full scale trials of post filter chlorination at the Belmont Plant and bench scale evaluations of alternative pre-oxidants and coagulants as new products become available. In fiscal year 2011 the Water Department compiled the results of a decade of pilot, bench and full scale tests, and in fiscal year 2012 initiated a planning effort to develop a vision for future long term upgrades to the water treatment plants. This project involves evaluating site constraints and developing conceptual designs for several advanced treatment processes (MIEX®, membrane filtration, ultraviolet disinfection and post filtration chlorination) to prepare the Water Department to make future plant upgrades as needed. The project was completed in December 2013. At this point there is no specific timeline or budget for any improvements identified; rather the results will feed into the recently initiated system-wide 50-year Water Master Plan.

1. Baxter Water Treatment Plant

The Baxter Water Treatment Plant became operational as a new rapid sand filtration plant in 1959. The Baxter plant draws water from the Delaware River and sends treated water to the Torresdale Treated Water Pumping Station for distribution to the northern and central parts of the City. The Baxter plant is the largest of the three water plants, with a design capacity of 320 mgd and a peak hydraulic rate of 420 mgd. Plant production information for the past six years is shown on Table III-4.

Table III-4 Baxter Annual Plant Production

FISCAL YEAR	DAILY OUTPUT (MGD)	
	AVERAGE	MAXIMUM
2011	146	190
2012	141	203
2013	139	189
2014	141	185

The Deferred Retirement Option Plan ("DROP"), enacted in 1999 as a means of retaining talent and experience, has been a major factor in the retirement of staff in several positions across the Water Department. The Water Department has acted proactively to bring on qualified new staff early, either as outright hires or interns, to enable knowledge transfer to occur over a transition period. The Baxter plant is budgeted for a staff of 56, and currently has eight vacancies. Four of the vacant positions are expected to be filled within the next six months, including key positions such as the instrumentation group leader and the mechanical group leader.

In May 2010, the Water Department was notified of a failure in a section of the vegetated roof of the 100 year old Baxter clearwell basin ("CWB"). This 40 million gallon basin stores treated drinking water and provides water by gravity to the Lardner's Point Pump station. The failure resulted due to concrete failure and presents a significant challenge to the Water Department as the basin cannot be taken off-line without disrupting the operation of the Lardner's Point Pump station. As a temporary measure, the Water Department installed covers and is monitoring water quality at the influent and effluent of the basin. These measures allowed for continued operation of the basin, with no adverse effects to water quality, while a permanent solution was developed. The design of the permanent solution is complete and is intended to be bid in the summer of 2015. The solution is to replace the 100-year old 40 million gallon ("MG") basin with four 5 MG tanks and associated yard piping and other ancillaries. This is a change from the original plan to install two 10 MG tanks. The project will be conducted in two stages and is estimated to cost over $90 million.

In an ongoing effort to optimize the treatment process, Baxter staff is continuing to conduct a bench scale evaluation of a new coagulant. If successful, the polymer/ferric blend could allow the plant to reduce the coagulant dose as compared to current ferric chloride coagulation, thus reducing residuals production. The study was prompted by the need for very high coagulation doses during and after recent extreme weather events. The study will capture seasonal variation in water quality and provide the opportunity for plant staff to research other utilities' experience with the product prior to conducting a full-scale trial in the future. Results have been mixed so far with regard to the overall effect of the new blend on Total Trihalomethane and Haloacetic acid levels in the distribution system.

The Baxter plant uses a SCADA system program to monitor the treatment process from the intake to the plant effluent. All on-line process data (water quality and operational) is collected and displayed real-time, allowing plant staff to quickly observe and react to changes. Baxter completed replacement of an outdated Distributed Control System ("DCS") with a new state-of-the-art system and is currently planning upgrades to the service and software initiating in FY 2016 with completion in FY 2017. The upgrade, estimated at $1.2M is necessary due to new version releases and concern with being able to obtain continued support for the current version.

Vulnerability Assessments conducted in 2002 identified measures to reduce vulnerability to an emergency situation (intentional or accidental). The measures identified included physical security, cyber security, process control, and redundancy. While the implementation of the recommendations are complete, the Baxter plant continues to make minor additions to its security system and expects to deploy additional security cameras and access control to internal areas using operating funds and its own forces. In addition, the plant is also continuing to address the replacement of the court-access hatches in the filtered water storage basins and is targeting completion in approximately six years.

Other projects recently completed or ongoing tasks at the Baxter plant are listed below:

- Upgrades and repairs of the sedimentation basins remains a work in progress due to the need to address other issues that were discovered during construction, including major repairs to sedimentation basin turntable drives. The work started in April 2010 and the north side basins are complete. Work on the south side basins is currently underway and is anticipated to be completed in the spring of 2015.
- Work on the replacement of filter effluent and flow valve packages on filters continues as an internal initiative. To date, 66 filters have been completed. It is anticipated that the replacements for all filters will be complete by the end of fiscal year 2016.
- Work on the isolation valves on each of the four filter quadrants, being pursued as a contracted effort, is a necessary precursor to the replacement new backwash valves on all filters. Installation of the isolation valves on the North-side started in spring 2013 and is complete. The South filters will be bid in FY 2016 and work is estimated to be completed in FY 2017.
- Concrete repairs to the intake building and pre-treatment building were completed in January 2015.

Capital projects planned for the coming years are listed below.

- Reinforcement of the raw water basin berm and pier is currently underway and is expected to be complete by the end of FY 2015.
- A project to dredge the intake and bypass intake is anticipated to be bid in fiscal year 2016. Levels of silt accumulation do not compromise production capacity under the demand conditions currently encountered.

- The design of raw water basin outlet gates and inspection and repair of existing concrete is currently underway. Construction is being coordinated with a project at Torresdale Pump Station as both will require a temporary plant shutdown for underwater inspection.
- The automation of the sedimentation basin gate valves will be pursued using in-house forces and is targeted for FY 2016.
- A project to replace 12 filters, including the replacement of media, and replacement of under-drains and gravel, was bid in November of 2014. The work will be performed on two filters at a time and is expected to be completed in one year.
- After a determination was made that the existing ferric chloride tanks (two tanks, 55,000 gallons each) were in poor condition, a contract was let to replace these tanks with four above ground 50,000 gallon tanks. The new tanks are onsite and construction is presently underway on the containment structures for the ferric storage system. The ferric dosing system is also being redesigned with the expectation of achieving better mixing.
- In keeping with new recommendations from the U.S. Public Health Services, the level of fluoride in drinking water has been dropped from 1.0 ppm to 0.7 ppm. The plant has determined that the fluoride storage tanks are in need of replacement and plans to downsize the storage capacity of new tanks in keeping with the reduced dosing standard.
- A contract for the replacement of the ammonia feed system has been awarded and is currently in the submittal review stage. Construction is expected to start in the spring of 2015.
- Improvements to the carbon dosing lines and diffusers are currently in the preliminary stages of evaluation.

2. Queen Lane Treatment Plant

The Queen Lane Water Treatment Plant began service in 1912 as a 70 mgd slow sand filter plant. The plant was improved several times, including a complete renovation in 1960. The Queen Lane plant draws water from the Schuylkill River and serves as the main distribution point for service to center city and northwest Philadelphia, west of Broad Street and east of the Schuylkill River. The plant is rated at 140 mgd. Recent plant production rates are shown on Table III-5. It is noted that repair work to the plant center conduit limited plant flow for part of fiscal year 2012.

Table III-5 Queen Lane Annual Plant Production

FISCAL YEAR	DAILY OUTPUT (MGD)	
	AVERAGE	MAXIMUM
2011	65.4	88.9
2012	60.1	93.7
2013	62.1	84.6
2014	61.8	91.8

The Queen Lane Plant has 55 budgeted positions with seven vacancies as of December 2014. The current vacant positions include a science technician, electrician I, electronic technician I, semi-skilled laborer and day time plant operator I. With the exception of the plant operator I, the other positions are actively being filled. A new position of graduate engineer has been created as part of a succession planning strategy to address looming retirements at key supervisory and technical positions. The current assistant plant manager will retire in March of 2015 and the current plant engineer will assume the position.

Residuals from the flocculation and sedimentation basins are sent to the Southeast Water Pollution Control Plant (“WPCP”), as is the filter backwash. The solids load necessitates the addition of phosphate at the WPCP. The Water Department conducted several trials in which a portion of the residuals were sent to the Northeast WPCP. However, there were operational issues associated with this transfer of residuals to the Northeast WPCP, and as a result all solids are still being sent to Southeast WPCP.

Vulnerability Assessments conducted in 2002 identified measures to reduce vulnerability to an emergency situation (intentional or accidental). The measures identified included physical security, cyber security, process control and redundancy. The Water Department has been actively implementing the recommendations of the assessments at Queen Lane through the installation of a new security system at the raw water basin (fence alarm and new key pads), security cameras at select locations, closure of an existing raw water basin access tunnel, and installation of real-time water quality monitors (pH, turbidity, chlorine and conductivity) at the raw water basin effluent and clearwell effluent. At this time, plant staff has completed the installation of all internal plant measures. External measures include new fencing and lighting around the clearwell basin, a new driveway, and new maintenance entrance are priority projects for the Water Department, however, these have been delayed as a result of community meetings and feedback. Pending community consultation, these projects will be put out to bid in the near future.

Vulnerability to power outages, exposed during Hurricane Sandy in October 2012 when both power lines to the plant were lost, is being addressed in two ways. A standby third power line has been installed with a commitment by the power provider (PECO) to make the physical connection if either of the existing feeds goes down. In addition, a new backup generator capable of carrying the full plant load has been included as part of the upgrades to the plant’s main switchgear which will be bid in November of 2014.

Projects recently completed or ongoing at the Queen Lane plant are listed below.

- The software upgrade for the Distributed Control System is complete and the plant is currently using this system in parallel with the earlier version as part of a transitional operational assurance phase.
- Doors and windows in the filter building have been replaced, and the additional replacement of remaining building windows is currently under design.
- The full rehabilitation of the flocculation/sedimentation basins was completed in December of 2013. This was a multi-year effort with one basin being taken off line and rehabilitated each year. This work included replacement of all equipment (flocculator motors, paddles, shafts and pedestals, and baffle walls) as well as structural repairs.

- Construction of a new pumping station for Roxborough and the Queen Lane High Service District is complete. The 90-day acceptance testing is complete and the pump station was operational as of the summer of 2014. The new pump stations replace the existing pumping equipment at the filter plant, which will be decommissioned.
- Plant staff has implemented security improvements in-house including: installation of security cameras with digital video recorder, card readers, and LED lighting.
- Installation of a backup power line to service the facility is complete.
- A project to repair/replace the gunite on the raw water basin wall and construction of an emergency spillway, as required by PaDEP, were completed in 2014.
- A small generator dedicated to the automatic shutdown of the flocculation/sedimentation process in the event of loss of chemical feed has been acquired and installed.

Projects planned to be implemented in the near term at the Queen Lane plant are listed below.

- Plant staff will conduct a full scale plant trial to evaluate a new technology for air scour for filter backwashing. The new technology will be piloted in filters #17 and #19 and compared to an existing filter's performance. The trial is being conducted to assess potential for improved filter performance and to evaluate the potential savings that may be realized. Backwash water is sent to the combined sewer system. Reducing the volume of backwash waste would reduce the load to the system consistent with the Water Department's efforts under the GCCW program. This project was initiated in the spring of 2013.
- The contract has been awarded to rehabilitate two failed filters (Filters #7 and #16) with new media, underdrains, and surface wash systems.
- Phase I of design for the renovation of the pretreatment building is complete. It will involve the removal of old chemical storage tanks. Phase II is in design and consists of a layout for future use as office space, a conference room, and storage areas.
- Design on the replacement of the main switchgear is complete. The project, which will include specification and purchase of a new generator adequate to run key plant processes during a power outage, will be put out to bid in November 2014.
- Replacement of the influent valves for the individual filters has been awarded and is awaiting the issuance of the "Notice to Proceed".
- New butterfly backwash valves on the north filters is in design with Project Controls. The corresponding valves in the south filters were replaced under a prior contract.
- A new HVAC system is planned for the Administration section of the filter building.
- Painting of the wash water tank is proceeding to the design phase.
- Discussions are underway regarding the best strategy to adopt for the dredging of the raw water basins to remove accumulated sediment.
- A low voltage transformer replacement project for the filter building is in design.
- Cracks on the north and south clearwells are planned to be repaired.
- Corrosion protection will be applied to the filters once the valves are replaced.

3. Belmont Treatment Plant

The Belmont Water Treatment Plant draws water from the Schuylkill River and serves as the source of supply for West Philadelphia. The Belmont plant is rated at 86 mgd. Recent plant production rates are shown on Table III-6.

Table III-6 Belmont Annual Plant Production

FISCAL YEAR	DAILY OUTPUT (MGD)	
	AVERAGE	MAXIMUM
2011	43.4	68.1
2012	44.3	54.1
2013	43.7	53.9
2014	44.9	54.1

The Belmont Plant has 53 budgeted positions, with one vacancy as of December 2014. Management anticipates filling this position by July 2015. Management also anticipates losing key skilled employees to retirement in 2015 and has implemented a plan to assure knowledge transfer to junior employees who can take over these positions.

Residuals from the flocculation and sedimentation basins are sent to the Southwest WPCP as is the filter backwash. An internal discharge permit for the Belmont plant residuals flow was issued by the Water Department's Industrial Waste Unit ("IWU") in July 1994. The permit required that routine discharges to the sewer be monitored weekly. Additional sampling is required during periods of high treatment flow rates and high river turbidity. Although this permit has expired and IWU has not reissued it, the plant continues to operate and monitor under the same conditions as required by the permit. The primary purpose of the permit was to ensure sufficient collection and transfer of information between the two plants to allow the Southwest WPCP to effectively treat the residuals load from Belmont. Now that the processes and procedures have long been established, the permit is essentially irrelevant and will likely not be reissued.

The Water Department continues to investigate methods for the reduction of Disinfection Byproducts ("DBP") production at all three plants. At Belmont, these investigations have focused on switching to post-filtration chlorine contact. The Belmont Plant converted part of their clearwell to a post-filter chlorine contactor and conducted full scale trials of post-filter chlorination starting in August 2008 and continuing through fall of 2012 continued each spring through fall. Results of this effort are promising and suggest that DBPs can be reduced below current levels which are already in compliance. In the spring and summer of 2012, the Belmont staff implemented several techniques to address some of the operating challenges that had been encountered in previous years, namely high post backwash turbidity spikes and shortened filter runs. These techniques included: installation of ultrasonic devices in the raw water basin, coating the sedimentation basin weirs with resin, covering the north basin weirs, and testing various polymers. These enhancements resulted in more efficient operations compared to the previous two years, but a comprehensive solution has not been identified. The Belmont staff will continue to refine this process in order to realize the DBP reduction benefits without sacrificing operational efficiency as the trial continues in future years. The trials were discontinued in 2013 as the rehabilitation of the raw water basin limit the plant's operational flexibility. Management anticipates continuing the trials upon completion of the raw water basin rehabilitation which will likely occur in 2016.

Other projects recently completed or ongoing at the Belmont plant are listed below:

- Replacement of the filter effluent valves and actuators is complete. Various upgrades to the zinc phosphate, potassium permanganate, and sodium hypochlorite feed and storage systems are complete.
- Replacement of the medium voltage switchgear and purchase of a high voltage generator capable of powering the whole plant is complete.
- Painting of the lime silo is complete.
- Rehabilitation of the raw water basin is underway. This project includes, dredging, relining of the basin, replacement of the center flume, spillway construction, and the addition of the carbon feed system. Spillway construction is complete. The rehabilitation of the East Basin and construction of the new center flume are ongoing and the plant is operating off of the West Basin. Once these projects are complete and the East Basin is back in service, the West Basin rehabilitation will begin.
- Rehabilitation of asphalt driveway is complete. As part of this project, all of the piping and feed lines under the parking lot were mapped and abandoned lines removed.
- North flocculation/sedimentation effluent gates have been replaced.
- Addition of hydroxide feed to the rapid mix and rapid mix bypass chamber is complete.
- Rebuilding of control valve on the ferric chloride feed is currently being completed in-house.
- Completed upgrades of various instrumentation and replacement of critical wiring at key installations in-house.
- Finished Water Basin crack repair and cover replacement is ongoing starting with the North Finished Water Basin which is currently out of service.
- Upgrades of existing DCS software nearly complete with final commissioning expected in the summer of 2015.
- Painting of valves and pipes in the filter building is complete.
- Touch up Painting work was performed on the sodium hydroxide tanks by plant staff.

Future projects at the Belmont plant are listed below:

- Emergency repair of corrosion on one lime silo. The plant has sufficient storage with one silo out of service.
- Repair of terrazzo floor in filter building (along with similar work at Baxter and Queen Lane).
- Replacement of water supply line to administration and hypochlorite buildings.

- Automation of the flocculation/sedimentation basin blowdown process for the removal of settled solids.
- Automation of the filter-to-waste process to allow for remote initiation of valves that send filter effluent to a drain after filter startup and add sludge density meter is scheduled for bid in the spring of 2015.
- South filter building egress design is complete and is scheduled to be bid in fiscal year 2016.
- Backup water service.
- Design is complete for the rehabilitation of the flocculation/sedimentation basins, including the flocculation area and concrete.
- Design is complete for the carbon system rehabilitation.
- Dredging of the Schuylkill River at intakes is in design.
- Design of replacement of the steel fluoride tanks is complete and in Projects Control.

Other projects that are currently in design include:

- A new ferric storage system (to replace rather than repair the existing buried system) is currently under design. This project will address chemical building spill containment and drain replacement as well.
- Installation of security lighting and cameras, access control, fencing, access card system, cameras, and portal hardening to be bid at the end of fiscal year 2015 an expected to commence in early fiscal year 2016.
- Motor Control Center replacement design is complete and influent valve wiring design is in progress.
- Pre-oxidation chemical feed system. This is a long-term project pending pilot studies to be conducted at Baxter

E. WATER CONVEYANCE

The mission of the Water Conveyance Section is to reliably and efficiently transport and distribute water on demand, preserving quality and providing service focused on overall customer satisfaction. The section is composed of three units, including: Distribution, Pumping, and Load Control. The Division has 338 authorized positions. Currently, there are 25 vacancies. This represents a decrease in authorized positions since fiscal year 2013.

The vacancies are cyclical by nature, the result of turnover in upper level positions, promotions to fill the next level vacancies and ultimately a trickle down to vacancies in entry level positions such as Water Distribution Repair Helper. Filling these entry level positions can take up to six months, not for lack of need but simply because it takes that long to hire. Lingering vacancies can create the perception that the positions are not needed making them vulnerable for elimination during budget negotiations, which is a concern for operations management. When staffing levels slide, meeting service levels becomes challenging. These vacancies reduce the number of crews available for repairs; this was particularly noticeable during the winter of 2013-2014 as a reduced number of crews worked 12 hour shifts to address the higher than typical occurrence of main breaks.

1. Distribution Unit

The main responsibilities of this unit are as follows:

- Provide permanent repairs and maintenance to the water distribution infrastructure.
- Provide twenty-four hour emergency response and local control of the water distribution system.
- Rectify system failures and maintain product control.
- Provide reliable and cost effective water supply, while being responsive to customers' needs and the environment.

Major components of the distribution system include: 3,028 total miles of pipeline (404 miles of transmission and 2,624 miles of distribution mains), 25,321 hydrants, and 91,957 valves.

Table III-7 shows the major performance parameters for the unit for the last four fiscal years.

Table III-7 Repair Record

SERVICE PARAMETER	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Breaks Repaired	646	954	563	823	969
Discontinuance Orders Completed	177	167	292	308	256
Valves Repaired	293	246	400	174	242
Connections	64	76	82	127	115
Leak Survey (miles of pipeline)	1,133	995	1,137	962	775
Hydrants Repaired	5,556	5,630	6,279	5,496	4,231

The Water Department's FY 2014 level of 303 breaks per 1,000 miles is higher than the national average of 270 breaks per 1,000 miles; however the 5 year average of 248 breaks per 1,000 mains remains below the national average. The total number of main breaks in 2014 was 969 breaks (2.7 breaks per day). This was above the historical 10-year average break rate of 762 breaks per year (2.1 breaks per day).

A preventive maintenance program that involves both field investigations as well as systematic scheduling of repairs and replacements is in place for the pipeline infrastructure. The Distribution Unit conducts leak surveys, examinations of portions of repaired mains to determine the root cause of breaks, and corrosion control studies as part of the preventative maintenance program. The Water Department uses multiple technologies to inspect large diameter transmission mains, which require greater sensitivity than smaller mains due to the level of detectable noise made by leaking water. There is a regular inspection rotation using *Sahara*® inspection technology, which allows for in-pipe inspections of active transmission mains. Additionally, the Water Department continues to evaluate new inspection technologies as they become available.

The Water Department has expanded and enhanced their preventative maintenance program by adopting CapPlan™. CapPlan™ is an asset management program that utilizes a variety of data to prioritize infrastructure improvements. Inputs include physical attributes such as pipe age, material and inspection results along with risk information, such as proximity and type of nearby infrastructure. The software uses the information to develop a prioritized list of capital improvement projects. Water Department personnel review the list for inclusion into the annual update of the CIP.

To ensure proper operation of the network's 91,957 valves, a valve tracking program is in place. This program records all valve activities (operation, inspection, repair and replacement). Table III-8 summarizes the valve program for fiscal year 2013.

Table III-8 Valve Maintenance (Fiscal Year 2013)

VALVES	TOTAL	SMALL (12" OR SMALLER)	LARGE (16" OR LARGER)
Operated	9,340	8,517	823
Found defective	488	464	24
Repair/Replace	174	168	6

In fiscal year 2014, hydrant availability was 99.7 percent. The Water Department attributes this high reliability to the implementation of a new process used to track hydrant information and deploy repair crews. The process was initiated in 2006 and has resulted in hydrant availability above 99 percent since that time. A preventive maintenance program includes routine inspections, repairs, and painting. During fiscal year 2014, the Water Department partnered with the Fire Department to inspect almost all of the city's 25,364 fire hydrants, leading to 4,231 repairs and 2,511 hydrants painted. Additionally, 656 tamper-proof hydrant locks were installed. The Water Department reported that approximately 62 percent of the hydrants have locking devices, and hydrant abuse has been controlled to levels that have no noticeable effect on the operation of the water system.

In calendar year 2012, asset and work order tracking of this infrastructure was migrated to the Cityworks® computerized maintenance management system. This allows street-side maintenance activities to be tracked uniformly and provides for a more unified customer information and maintenance system.

2. Pumping Unit

The unit's responsibility is to maintain and repair all raw and potable water pumping systems. Additionally, the unit maintains all raw water intakes, finished water reservoirs, system tanks and standpipes. The unit strives to maximize pump availability, pump efficiency, and the productive use of all maintenance resources. Table III-9 details the unit's performance for these three parameters.

Table III-9 Pumping Unit Activity

PERFORMANCE MEASURE	FY 2011	FY 2012	FY 2013	FY 2014
% Pump Availability	95.2	95.3	95.4	94.0
% Station Efficiency (wire to water)	79.8	79.8	77.3	76.5
% Planned Work (a productivity measurement)	96.2	96.5	95.5	94.8

Pump availability remains at a consistently high level due to the proactive maintenance approach employed. Despite the age of the majority of the pumps, the unit has been able to hold pump efficiencies steady through good maintenance practices and the use of techniques such as impeller modification to better suit actual demand. The slight decrease in availability during 2013 and 2014 is attributable to transition periods for the new superintendent and three new group leaders.

Station efficiency is an overall measure of pumping efficiencies across all stations and represents the percentage of energy put into the system that is actually used to move water (the ratio of mechanical output to electrical input). The efficiency has remained stable at about 78 percent over the past four years, which is relatively close to the original efficiency of the equipment when it was new. The decrease in station efficiency in fiscal years 2013 and 2014 is attributable to meter calibrations conducted during that time.

The percent planned work activity is a measure of productivity for the Pumping Unit staff in terms of time spent on planned maintenance activities as compared to time spent on emergency repairs. This measure reflects the effectiveness of the preventative maintenance program. The Pumping Unit uses a Computerized Maintenance Management System ("CMMS") to plan and track maintenance activities and to generate monthly and annual reports regarding pump efficiency, pump availability, and labor productivity. The software, MAXIMO®, is also used in the Water Department's treatment plants to support asset management.

The Pumping Unit, in concert with Load Control, is currently developing a 25-year Pumping Facilities Plan. The goal of the 25-year plan is to right-size overall system pumping capacity to better match current and projected demands and to ensure the integrity of the facilities for another 50 years. This will be achieved by taking an integrated approach to defining pumping needs, considering all stations as part of a system as opposed to as individual stations. During the planning process Pumping Unit staff will inspect the all existing facilities (pump stations) to identify needed upgrades or repairs. Inspections will include electrical and structural components in addition to the pumping infrastructure. In addition, the Pumping Unit will work closely with Load Control to ensure an integrated approach to defining pumping capacity requirements for each pump station. To date, approximately one half of the facilities have been inspected. Based on these inspections, Lardner's Point and West Oak Lane are targeted for replacement, while Torresdale Raw Water, East Oak Lane and Chestnut Hill will undergo phased rehabilitation. Details on these upgrades are included in Section 3.F.2.

3. Load Control Unit

The mission statement of the Load Control Unit follows: "In order to provide a reliable supply of water to meet all community needs we will operate the water transmission system Load Control

Center, maintain the Supervisory Control and Data Acquisition system, conduct hydraulic investigations, develop and utilize a current hydraulic model of the entire water distribution system and assist in long-term planning for responsible management of the City's water supply infrastructure."

The development of a hydraulic model for each city pressure district is complete, as is a city-wide transmission system model. An integrated system-wide model was also completed in 2010. The existing models have been used to simulate operational changes, size pumps, plan water main relays, and investigate water quality issues. Water Department staff updates the models to account for ongoing system changes and increase the accuracy and reliability of information produced.

The Load Control Center and water transmission system operate continuously. All pumps are controlled centrally using a SCADA system. It is a priority of the unit to provide a reliable supply of water in a cost effective manner. This is achieved by using the SCADA system to maximize the use of system storage during peak hours, and then pumping to refill lost storage during the less costly off-peak hours. This protocol also ensures adequate turnover in the storage tanks throughout the city. Table III-10 illustrates the unit's ability to control electrical demand, which was a major cost component of the operation prior to December 2010. In January 2011, deregulation of electrical rates and suppliers resulted in increased electricity costs and a significant restructuring of how electricity is billed and purchased. Post January 2011, electrical rates are purchased on the open market for the City as a whole rather than separately by the Water Department. The traditional electrical usage profile (more off-peak than peak usage) of the Water Department continues to be beneficial when purchasing power for the City, but the benefit of off-peak pumping is less directly tied to electricity costs than it had been before. This change, combined with the increased cost of electricity, resulted in the observed increased total power expenditures in fiscal years 2011 and 2012. Therefore, operation of the pumping stations was adjusted in fiscal year 2013 to optimize pumping under the new electricity purchase scenario. Average daily delivery to the water system in fiscal year 2014 was approximately 240 mgd, down from the system's historical peak of 378 mgd in 1977. Load Control is challenged to find operational cost savings to match the delivery rate decline, while using pumping systems that were designed for higher demands. At most pumping stations, only the smallest pump runs during on-peak hours. The 25-year Pumping Facilities Plan will address this issue through the right-sizing of all pump stations. In the meantime, Load Control engineers have worked with Pumping Unit staff to trim the diameter of a pump impeller at the Torresdale High Service Pump Station. This project will allow for operational flexibility during the rehabilitation of the Baxter clearwell. Load Control and Pumping Unit staff continues to monitor each district for opportunities to improve pumping efficiency and lower overall costs. Most recently, Load Control engineers prepared specifications that the Pumping Unit used to purchase two new, replacement pumps for the Chestnut Hill Pumping Station. The Pumping Unit completed the installation and testing of these two pumps in September 2013.

Table III-10 Load Control Unit - Electrical Demand

PERFORMANCE MEASURE	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Average Daily Delivered Water, mgd	244.5	250.0	237.1	238.3	239.5
Total Power Consumption, million kilowatt-hours	120.6	122.7	119.7	122.0	134.1
Total Peak Billing Demand, Kilowatts	144,501	148,897	147,116	156,263	168,574
Total Expenditures for Power	$6,610,500	$8,540,000	$8,812,000	$8,349,000	$8,990,187
Cost per million gallon pumped (raw & treated water)	$74.69	$93.59	$101.55	$95.91	$102.84

The Load Control Unit also provides a variety of water distribution system testing and investigative functions. A current initiative includes the replacement of in-system meters and the addition of new meters in strategic locations. The new meters will allow for better tracking of water flow within the distribution system. Additional functions include: fire flow testing, fire system troubleshooting, water quality investigations, and investigation of new leak management initiatives. Asset management support services provided by the unit include: planning and scheduling of capital program water system work, review of all capital program design documents, and coordination of the Large Valve Management Program. The unit also plays a lead role in the Water Accountability Committee and the Reservoir Team.

F. SYSTEM STORAGE AND PUMPING

The Water Department provides finished water storage at each treatment plant. There are also six other treated water storage reservoirs, standpipes, or basins in the system. All finished water storage is covered.

1. Finished Water Reservoirs

The Water Department's Reservoir Team manages the strategic planning, capital program projects, and operations and maintenance functions of the Water Department's reservoirs.

The principal covered storage reservoirs and their approximate capacities are:

East Park (Northeast)	147.2 million gallons
Oak Lane	72.8 million gallons
Roxborough (Upper & Lower)	28.5 million gallons

In addition, the Fox Chase elevated storage tank (1.5 MG), the two Somerton standpipes (10 MG), and the two Roxborough standpipes (11 MG) provide a total of 22.5 MG of distribution system storage. The Pumping Unit recently completed the rehabilitation all of their standing storage tanks. Work to rehabilitate and recoat the two Somerton Standpipes (5 MG each) was completed in 2009 and similar work at the Fox Chase Elevated Tank was completed in fiscal year 2010. Rehabilitation of the two Roxborough Standpipes was completed in October 2013. These were the last of the five distribution system tanks to be rehabilitated. This effort is expected to enhance water quality and increase the security and integrity of the tanks.

The Oak Lane Reservoir was taken out of service on February 24, 2009, immediately after it was discovered that the polypropylene membrane cover was deteriorating and particles from the cover were released into the water. Operations to implement the shutdown were efficient and effective with no negative impact on water supply. The reservoir provided water to the East Oak Lane and West Oak Lane Pumping Stations. These pumping stations were supplied directly from Lardner's Point Pumping Station until a new lining could be installed. A new polyethylene cover was installed in 2012. The reservoir was disinfected and monitored prior to being put back in service on March 5, 2013. The new liner was recently inspected and is in good condition.

The floating cover on the East Park Reservoir has reached its useful life. The Water Department will replace the reservoir with two 30 MG concrete tanks, for an effective storage volume of 40 MG. The tanks will provide water quality, security and maintenance benefits over the existing reservoir and floating cover. Design of the basins is complete and the project is to be bid during fiscal year 2015 with a notice to proceed anticipated for the fall of 2015. In preparation for this project, Pumping Unit staff installed a 30-inch pressure reducing valve on the East Park low duty system. This will allow for bypassing of the reservoir during construction and provide better control when operating directly off Queen Lane High Service. The project is estimated to cost $70 million. The need for additional storage will be evaluated as part of the 50-year Water Master Plan.

2. Pumping Stations

Pumping stations are located at each treatment plant with seven other stations located off-site that provide water service pressure for the distribution system. The major pumping stations, divided into Delaware and Schuylkill Divisions, are:

DELAWARE DIVISION	SCHUYLKILL DIVISION
East Oak Lane	Belmont High Service
Fox Chase Booster	Belmont Raw Water
Lardners Point	Chestnut Hill
Torresdale Low Service	East Park Booster
Torresdale High Service	Queen Lane High Service
Torresdale Raw Water	Queen Lane to Roxborough
West Oak Lane	Queen Lane Raw Water
	Roxborough High Service
	Navy Pumping Station

By utilizing reservoir storage capacity and pumping capabilities through the Load Control Center, the Water Department is able to provide water during periods of water shortage in a given service area. A great deal of flexibility is built into the system. With few exceptions water can be provided city-wide from any of the three treatment plants.

The Water Department has completed the construction and testing of the new Queen Lane High Service/Roxborough Express Pumping Station in fiscal year 2013 with the new pump station going on-line in June of 2013. The new pump station replaces an outdated pump station previously housed within the Queen Lane Water Treatment Plant filter building, providing enhanced reliability through upgraded electrical systems and more efficient pumps. The pumping capacity was reduced to allow for more efficient use of the neighboring Oak Lane Pump Station. This holistic approach will increase reliability and efficiency for both pump stations and likely result in reduced energy consumption. The project cost of $19.3 million was funded by Pennvest loans.

The right-sizing of the Queen Lane High Service/Roxborough Express Pumping Station is consistent with the 25-year Pumping Facilities Plan which, as previously mentioned, is aimed at right-sizing and ensuring integrity of all pump stations for the next 50 years. Some stations will be targeted for rehabilitation and others for full replacement. Projects already slated for completion in the near-term will proceed and be incorporated into the plan. For example, an electrical upgrade is planned for East Oak Lane Pumping Station and will be bid in spring 2015, and at Torresdale Raw Water Pumping station a project to upgrade the electrical and install a generator is in Projects Control, while a project to replace header valves and install a diversion gate in ongoing.

Projects to rehabilitate the Baxter clearwell and emergency intake are ongoing. Pumping and Load control have collaborated with Water Operations on these projects to incorporate improvements such as a bypass around and redundant effluent piping from the clearwell both of which will allow for greater flexibility in the operations of Torresdale High Service Pumping. These projects will move forward as planned and be incorporated into the 25-year Plan.

The Water Department continues to implement the recommendations of the Vulnerability Assessments system-wide. To this end, the Water Department is installing new fencing and security systems at key pumping facilities and has installed surveillance cameras at all remote facilities. The Department is also acquiring emergency generators for all pumping stations. Generators have been installed at the Belmont High Service, Roxborough High Service, Torresdale High Service and Fox Chase Pumping Stations. Design is complete for generators and switchgear for the Torresdale Raw

Water Pumping Station and the East Oak Lane Pumping Station. These projects are now in Projects Control. Plans for generators at Belmont Raw Water, Queen Lane Raw Water and West Oak Lane Pumping Stations are in design. These will be coordinated with projects identified in the 25-year Plan as appropriate. It is the Water Department's goal to install standby generators at all of its pumping stations and treatment plants in the coming years.

G. OPERATIONS ADMINISTRATION

Operations Administration provides administrative support services to all operating units within the Operations Division. Operations Administration reports to the Director of Field Operations and includes five (5) operating units: Meter Management, Delinquency & Restoration, Customer Service, Plumbing Repairs, and Materials Management. There are currently 176 budgeted positions and 9 vacancies. This represents an increase in budgeted positions resulting from the hiring of several employees previously employed by the contractor responsible for the recent meter battery change-out.

Operations Administration is responsible for leading several initiatives including the implementation of Cityworks®, the operations and maintenance of meters city-wide, responding to customer complaints, and addressing delinquency and restoration issues. Key programs led or supported by Operations Administration are discussed in the following sections.

1. Cityworks® Development and Implementation

A major initiative within the Water Department in recent years has been the development and implementation of a customer complaint and maintenance management system called Cityworks® (a product of Azteca, Inc.). The Water Department's GIS is the foundation of the system. The system implementation was substantially complete as of June 2012, with the key operating units having received training and actively using the system at that time. Integration or migration of data from the various legacy databases used by different operating units is also complete. The Water Department will continue to introduce the system to other operating units as needed and to customize reporting and data retrieval functions. Cityworks® is used primarily by the Water Department's field units that work on street side assets associated with the conveyance and collector systems. The software is used to track service requests taken from the Public Affairs Call Center, as well as work orders for system maintenance and repair generated within the field units. It has replaced the individual systems that were previously used by each unit to track infrastructure repairs, replacements, and related projects. This has resulted in streamlined work, consolidated data in one location, and reduced duplication of effort between units. Cityworks® is also an integral component of the CWS, specifically as related to tracking customer complaints and reviewing maintenance activities that might contribute to a water quality event in the distribution system.

2. Meter Management

The Water Department's water meter management program maintains several dozen production meters and a customer meter population of close to one half million. The Water Department also manages the AMR system that provides routine customer meter readings to the billing process. These programs are discussed below.

(1) Production Metering

The Water Department maintains meters on transmission supply mains at its three water treatment plants, pumping stations, reservoirs, as well as interconnections to BCWSA and Aqua Pennsylvania. All meters are connected to the Load Control Center SCADA system and are continuously monitored and balanced on a daily basis. Most meters are verified on at least an annual basis by Load Control technicians and an engineering consultant, and the export sales meters are checked quarterly. This structured level of meter management ensures accuracy in the calculation of the total volume of water supplied to the distribution system.

(2) Customer Meter Management

Customer meters are managed by the Water Department’s Metering Unit. This group replaces faulty meters and AMR equipment, investigates suspicious consumption patterns, and performs a host of related duties. The Metering Unit also operates meter test equipment and performs routine meter accuracy testing. The demands on the Metering Unit have grown since the implementation of AMR, as more reliable customer consumption data now exists, revealing many more problems such as tampering and equipment failure.

The Meter Shop has also focused recently on the assessment of large customer meters to determine whether they are sized appropriately. Large meters are defined as those greater than one inch in size. Approximately 3 percent of all meters fall in this category, but these accounts tally almost 50 percent of the billed consumption total. Highlights of this program are presented below:

- Meters ranging from one to two inches in size are generally replaced every 10 years to maintain accurate registration. Meters from three to six-inches have a 4-year replacement interval, and those from eight to ten-inches are replaced on a 2-year frequency. This increasing frequency of replacement for the large meters provides a higher level of accuracy and performance.
- The Metering Unit has undertaken a concerted look at downsizing large meters that are oversized in the system. The Water Department has incentive to right size larger customer meters to more accurately measure metered flow that can vary across a broad range. Large meter management results in benefits to both the customer and the Water Department. Meter downsizing results in a decrease to the customer's monthly water service charge, while replacing misapplied or improperly-sized meters typically results in increased flow registration and related volumetric billings. Approximately 250 meters per year were downsized from fiscal years 2006 to 2009 at the request of customers. These customers had an incentive to downsize as a significant portion of their water and sewer bill was based on a fixed charge that was graduated by meter size. With the Water Department’s implementation of a stormwater charge in fiscal year 2011, a customer’s total water, wastewater, and stormwater bill is less dependent on meter size and the number of downsizing requests have decreased. The Water Department installed fifteen new single jet meters to pilot the use of these meters and confirm if their advertised high accuracy is observed in the field. They are also evaluating the use of mag meters for large customers as that technology is developing. New meter evaluations are being led by the Planning and Research Unit in cooperation with the Meter Shop.

3. Automatic Meter Reading System

The first installation phase of the AMR System from 1997 to 1999 included the replacement of all residential water meters, sized 5/8-inch or 3/4-inch, with new meters equipped with Encoder, Receiver, and Transmitter units (“ERTs”). Until very recently, the Water Department’s AMR System was the largest and most significant AMR endeavor in the United States to be fully implemented. This installation of the AMR system is complete as of March 2013 for all residential, large meter commercial and industrial customers. Significant improvements in customer service and consumption data integrity have been realized as a result of the AMR System. The system is also being leveraged to gain additional benefits in the areas of leakage management and control of unauthorized consumption. Additional benefits of the system include:

- Reduced intrusion into individual homes, resulting in greater customer convenience and security
- More accurate and reliable meter readings
- Fewer customer complaints due to estimated billing
- Improved ability to detect apparent losses, particularly unauthorized consumption
- Long-term savings and revenue improvements

In January2013, the Water Department completed a two year initiative to change out AMR batteries. The original ERTs on residential accounts, which were initially installed from 1997 to 1999, have been replaced with similar ERT units that have a new battery. Additionally, the Water Department specified that that all large metered accounts (1-inch and above) and all accounts within District Metered Area 5 (described below) and the Navy Yard have fixed network-capable ERTs installed. These ERTs have the ability to provide meter reads as often as every 15 minutes and can transmit the data real-time (hourly) via a fixed communication system. The ability to provide more frequent meter reads will provide the Water Department with sufficient data to develop detailed customer consumption profiles, manage district pressures, and better identify leaks or meter tampering.

Overall, the battery change-out will keep the AMR system functioning properly through its contract life (2019) and provide an opportunity to assess the benefits and drawbacks of a fixed network system. As of March 2013, all standard residential ERTs have been switched out along with 8,000 of the planned 15,000 fixed network capable ERTs, including some of the associated fixed network communication equipment.

The Water Department is currently conducting a feasibility study to evaluate the economic and customer benefits and the technical feasibility of transitioning to a potential Advanced Metering Infrastructure (“AMI”) in conjunction with the use of Meter Data Management System (“MDMS”).

4. Revenue Protection

The Revenue Protection Program focuses on recovering uncaptured revenue from compromised customer accounts. Management estimates that it has been successful in recovering over $30 million since its inception. Each year the program pursues targeted groups of accounts perceived as areas of missed water consumption and billings. For the past three years the major focus of the program has been “zero consumption” accounts; the majority of which have occurred due to tampering. Table III-11 presents the annual amount of revenue billings identified over the past several years, but does not represent actual cash collections.

Many of the accounts investigated by Revenue Protection occur due to unauthorized consumption. As in many large urban areas, unauthorized consumption occurs in many different ways. The Water Department actively attempts to address the major causes of unauthorized consumption and the associated lost revenue. Over 30,000 accounts are shutoff for non-payment every year, and a notable portion of these accounts are illegally restored by customers. In these instances, the Water Department shuts these accounts off a second time. The Delinquency & Restoration Unit has piloted several new technologies to improve shutoff effectiveness. They are in the process of implementing new technologies and procedures for shut-off. With tablet based technology Delinquency & Restoration representatives will have the ability to accept payments on delinquent accounts in the field or shut off the meter for delinquency after electronically recording the final meter read. Having the final meter read will allow the Water Department to more quickly identify unauthorized restoration of the service. As the Water Department begins planning for installation of the next generation of meters, they anticipate upgrading to AMI which may include leak noise loggers on customer piping, automatic shutoff valves, automated backflow detection and other enhancements. The Water Department is also looking closer at enforcement actions and billing policies to discourage the high level of unauthorized consumption in the City.

Table III-11 Water Department and Water Revenue Bureau Annual Water Audit Summary

FISCAL YEAR	WATER RECOVERED, MGD	REVENUE RECOVERED
2000	1.39	$2,493,949
2001	5.81	$3,398,952
2002	0.69	$1,705,932
2003	1.14	$2,386,379
2004	1.67	$2,449,327
2005	1.74	$3,084,261
2006	1.01	$1,622,768
2007	0.36	$871,780
2008	0.40	$1,026,920
2009	1.00	$1,803,272
2010	1.49	$2,554,261
2011	2.30	$3,889,675
2012	2.40	$4,336,492
2013	2.56	$4,453,107
2014*	1.74	$5,015,532
Total	**25.70**	**$41,092,607**

* Fiscal Year 2014 data reflects Water Department's Revenue Protection Program efforts only.
Water Revenue Re-inspection program data is not available.

Reduction of unauthorized fire hydrant use is another Water Department loss control initiative. As mentioned above, recent efforts have focused on installing tamper-proof, center compression locks ("CCL") in those areas most susceptible to fire hydrant abuse. At the end of fiscal year 2013, the

Water Department reported that approximately 62 percent of all hydrants were equipped with tamper-proof locks. It is the Water Department's intent to have tamper-proof locks installed on all hydrants in the future.

5. Piloting New Technology

The Water Department is continuously seeking opportunities to enhance and optimize their water loss control, metering and revenue collection services, through participation in research studies and internal efforts. These efforts are led by Planning and Research Unit in cooperation with Operations Administration and other Operations Division units

As part of the project "Leakage Management Technologies," the Water Department isolated a small area of the distribution system to establish a pilot District Metered Area ("DMA"). The objective of the pilot is to utilize continuous flow and pressure monitoring to evaluate leakage levels, and apply advanced pressure management techniques to control leakage and prevent water main breaks. The research found that the DMA approach is feasible and the Water Department achieved a significant, sustainable leakage reduction in the DMA. Upon the completion of the study in 2007, the Water Department continued its efforts to fully optimize operations of the DMA for leakage control by integrating established Water Department programs such as acoustic leak detection and water main replacement. Flow modulated pressure control is used to coincide with changes in demand to reduce the potential for leakage. Pressure reducing valves are used to reduce system pressure during low flow periods (typically at night), and increase pressure during higher flow (daytime) periods. Maintaining optimal pressure is effective in reducing background leaks or seepage, while monitoring the change in flows during low flow periods helps to identify trends of newly emerging leakage. In 2012, the Water Department expanded the DMA initiative to the Navy Yard. The isolated nature of the distribution network in the Navy Yard, combined with the high pressures in this distribution network make the area ideal for a DMA. The Water Department will continue to focus on these DMAs in the near-term with consideration of additional applications of DMA principles in other parts of the distribution system. As previously noted, Fixed Network AMR ERTs are being installed on all customer accounts in DMA5. This will give the Water Department the capability to compute a daily water balance of supply flows into the DMA and compare it with the total daily customer water consumption. Equipment has been installed for 2,250 accounts and the Water Department is in the process of collecting and analyzing the data. As mentioned above, in 2007 the Water Department began to contract for services from the Pressure Pipe Inspection Company (now part of Pure Technologies) for use of its *Sahara®* service of inline acoustic leak detection for large diameter transmission pipelines. Traditional, above-ground acoustic leak detection cannot detect leaks on inaccessible piping (e.g., under highways or creeks) and the Sahara® technology is providing a valuable tool for the Water Department to better maintain its large diameter piping. The six year old program has scanned 40 miles of large piping and identified 82 leaks, the vast majority of which have been repaired. The Water Department conducts the surveys two times per year, with the assistance of their contractor. The Water Department has determined that there are leaks on the customer side and is now addressing the problem by replacing the service lines. Between surveys, the Water Department addresses the leaks detected as appropriate. Two of the leaks that have been detected to date would be very difficult to access for repair. Thus, management has determined not to repair these as they present little risk due to the low volume of leakage identified. The Water Department is assessing other technologies as they become available. Such technologies might feature enhanced capabilities with respect to leak detection, measurement of pipe wall thickness, and video.

The Water Department's ongoing activities continue to build on successful efforts of the past. Future program initiatives include:

- Utilize the full potential of the new billing system to enhance the management of customer account data.
- Increase staff levels to enhance revenue collections.
- Search for opportunities to improve efficiency and timeliness in addressing leakage on customer services connection piping.
- Leverage the Cityworks® maintenance management system to better track leak occurrences, pipeline failure modes, and response and repair times.
- Establish a process to reliably track the period of time when leaks are identified to the completion of repairs, and improve practices to minimize this average period of time.
- Investigate opportunities for additional DMAs with enhanced pressure management capabilities.
- Evaluate and pilot an array of new metering capabilities known as Advanced Metering Infrastructure (AMI) including leak noise loggers on customer piping, automatic shutoff valves, automated backflow detection and other enhancements. Develop a proactive planning approach to main replacements that includes a more long term outlook and includes large transmission mains.
- Focus on utilizing trenchless technology.

H. CONCLUSIONS

The findings discussed in sections B through G of this chapter provide the basis for our overall conclusion on the condition of the Water System. The general physical condition of the major facilities of the Water System has been evaluated using the following three ratings:

- *Good:* The facility is in condition to provide consistent and reliable operation in accordance with regulatory requirements and service needs with the planned level of maintenance and capital improvements.
- *Adequate:* The facility is operating at or near design levels, however, non-routine renovation, upgrading, and repairs are needed to ensure continued reliable operation.
- *Poor:* The facility is not being operated within design parameters. Major renovations are required to restore the facility and assure reliable operation. Major expenditures for these improvements may be required.

Based on onsite physical inspections and investigations of major system facilities, conducted in November and December 2014, combined with discussions with key Water Department staff at that time and subsequently in February 2015, it is our opinion that the major facilities of the Water System is in good operating condition or adequate steps are being taken to return them to good operating condition. The approved capital improvement budget for fiscal year 2015 and the proposed six-year capital program for fiscal years 2016 through 2021 should provide adequate funds to sustain the systems in good operating condition.

IV. Wastewater System

A. INTRODUCTION

By the end of the Nineteenth Century, Philadelphia had established a Department of Sewerage and had constructed approximately 800 miles of sanitary and storm sewers. In 1923, the Northeast Water Pollution Control Plant ("WPCP") went into service with a capacity of 60 million gallons per day (mgd). From that point until the mid-1940s, most expenditures were for collection and transmission facilities rather than for treatment works. It was not until 1946 that wastewater service charges in the City provided the means of financing the modernization of the original Northeast WPCP and the construction of the original Southeast and Southwest plants as primary treatment facilities. All three wastewater treatment plants were upgraded in the 1970s and 1980s to provide secondary treatment. Construction of the Biosolids Recycling Center ("BRC"), formerly the Sludge Processing and Distribution Center ("SPDC") which manages sludge produced from all three treatment plants, was subsequently completed in 1989. The most significant recent change to the BRC operation is its privatization in 2008 to a joint venture led by Synagro through the Philadelphia Biosolids Services ("PBS") company. Under a 20-year contract with the Water Department, PBS leased a portion of the property and assumed responsibility for the operation of the existing facility until a new Class A Drying Facility was constructed and operational. The new facilities were fully operational and producing Class A pelletized bio-solids in February 2012.

B. WASTEWATER SYSTEM OVERVIEW

The Philadelphia Water Department's wastewater system currently serves the City of Philadelphia, and parts of Bucks, Montgomery, and Delaware Counties. According to the 2013 Census data estimate and Water Department estimates, the total service area population is approximately 2,303,165 including approximately 1,553,165 people within the City and 750,000 residents in outlying municipalities. The service area population is distributed over 364 square miles, with 230 square miles in suburban communities and 134 square miles in the City.

The wastewater collection system consists of approximately 3,716 miles of total collector system piping , 19 pumping stations (16 Water Department Owned and 3 owned by others but operated by the Water Department), 94,116 manholes, 26 storm relief structures, 71,962 stormwater inlets, and 56 metering chambers to monitor flows from surrounding townships. There are 762 miles of sanitary sewer, 737 miles of storm sewer, 1,855 miles of combined sanitary, 13 miles of force mains (sanitary and storm) and 349 miles of appurtenant piping. The sewers range in size from 8-inch diameter to 21 feet by 24 feet arch-shaped conduits and are primarily constructed of brick, vitrified clay, or reinforced concrete. The wastewater system is divided into three drainage districts, each served by a treatment plant as indicated in Figure IV-1.

In November 2009, most of the water and wastewater infrastructure of the Navy Yard was turned over to the Water Department for operation and maintenance. The wastewater system and storm system contain 21 miles of sewer, 60 miles of stormwater conduits, and three pumping stations. The infrastructure has been fully integrated into the Water Department's planning, operations and maintenance programs and is reflected in the overall statistics presented above.

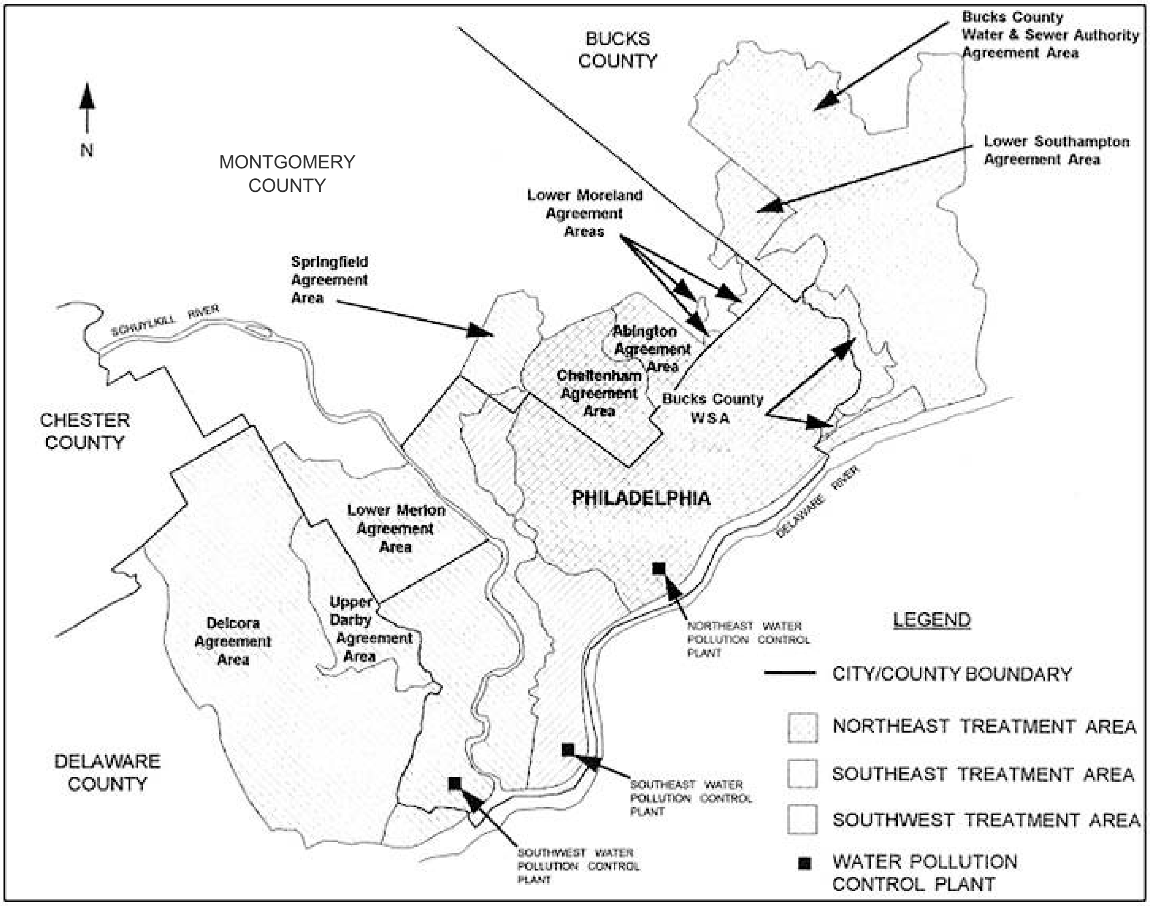


Figure IV-I Wastewater Service Areas

C. WHOLESALE SUBURBAN CUSTOMERS

Contracts for wastewater treatment service with nine neighboring municipalities and authorities provide for the billing of charges based on wastewater strength and volume. As illustrated in Figure IV-1, parts of Bucks and Montgomery Counties contribute to the Northeast WPCP; parts of Montgomery and Delaware Counties contribute to the Southwest WPCP; and Springfield Township of Montgomery County contributes to the Southeast WPCP.

Table IV-1 summarizes the contract limit flows and actual flows by receiving plant.

Table IV-1 Suburban Flows to WPCPs

PLANT	AVERAGE DAILY FLOW (MGD)	
	Annual Maximum (Contract Limit)	Fiscal Year 2013
Northeast WPCP	56.6	38.9
Southeast WPCP	1.0	0.4
Southwest WPCP	84.7	41.9
Total	**142.3**	**81.2**

D. CONSENT ORDER AND AGREEMENT FOR COMBINED SEWER OVERFLOWS

A primary initiative for the Water Department over the coming years will be the ongoing implementation of the Consent Order and Agreement ("COA") with the Pennsylvania Department of Environmental Protection ("PaDEP"). The purpose of the consent order is to improve the overall water quality of the City's rivers and streams by reducing combined sewer overflows ("CSOs") from the Water Department's combined sewer system. The Water Department's primary means for complying with the consent order is the approved Long Term Control Plan Update ("LTCPU"), also known as the Green City, Clean Waters ("GCCW") program. The LTCPU outlines the Water Department's strategy for implementing traditional and non-traditional improvements that will focus on eliminating or removing no less than the mass of pollutants that otherwise would be removed by the capture of 85 percent by volume of combined sewage collected in the combined sewer system during rainfall events. The implementation of the LTCPU will require a significant increase in capital expenditures over the next 25 years, as well as the focus of staff and management on implementing, tracking, measuring, and reporting progress toward compliance with the COA's requirements. To achieve this level of program oversight, the Office of Watersheds ("OOW") underwent a Program Quality Review process as discussed in Section II.2. The OOW restructured and developed processes and procedures to enable it to execute and track the projects required under GCCW.

This COA is particularly significant because it is the first of its kind and represents a shift from traditional Combined Sewer Overflow ("CSO") programs and agreements. The Water Department's LTCPU will address CSOs through large scale implementation of green stormwater infrastructure city-wide, with only minimal installation of the more traditional gray infrastructure improvements (in the form of treatment plant capacity increases and collection system improvements). This approach focuses on controlling pollution at its source and improving water quality by restoring the natural hydrologic cycle in the urban environment. The approach is consistent with EPA's strategy for addressing wet weather impacts. The Water Department will be in the spotlight and under scrutiny as regulators and peers observe their progress during the implementation of this program.

As discussed above, the overall goal of the COA is for the Water Department to eliminate or remove no less than the mass of pollutants (Biochemical Oxygen Demand ("BOD"); Total Suspended Solids ("TSS"); and fecal coliform bacteria) that otherwise would be removed by the capture of 85 percent by volume of the combined sewage collected in the combined sewer system (CSS) during precipitation events on a system-wide annual average basis. To track the progress toward this goal and determine compliance with the COA, a Water Quality Based Effluent Limit ("WQBEL") Table with performance standards will be included in the Water Department's renewed National Pollutant Discharge Elimination System ("NPDES") permits. The Table below is an excerpt from the COA and provides Water Quality Requirements to be included in the Water Department's renewed NPDES permits:

Table 1 - WQBEL Performance Standards							
Metric	Units	Baseline value	Cumulative amount as of Year 5	Cumulative amount as of Year 10	Cumulative amount as of Year 15	Cumulative amount as of Year 20	Cumulative amount as of Year 25
[plant name] WPCP upgrade: Design	percent complete	0	* note (1)	* note (1)	* note (1)	100%	100%
[plant name] WPCP upgrade; Construction	percent complete	0	* note (1)	* note (1)	* note (1)	100%	100%
Miles of interceptor lined	miles	0	2	6	14.5	14.5	14.5
Overflow Reduction Volume (2)	million gallons per year	0	600	2,044	3,619	5,985	7,960
Total Greened Acres	Greened Acres	0	744	2,148	3,812	6,424	9,564
Equivalent Mass Capture -TSS	percent	62%	Report value	Report value	Report value	Report value	85%
Equivalent Mass Capture - BOD5	percent	62%	Report value	Report value	Report value	Report value	85%
Equivalent Mass Capture - Coliform bacteria	percent	62%	Report value	Report value	Report value	Report value	85%

(1) Performance Standards for “percent complete” for the WPCP upgrade design and construction projects were not available at the time of the COA. The City shall provide these targets to the Water Department along with the Facility Concept Plan for the WPCP. The Facility Concept Plan is due on a specific date given in the COA. After the Water Department approves the Facility Concept Plan, the targets for “percent complete” will be entered into Table 1. The formal modification of Table 1 may be accomplished by the DEP by issuing a revised NPDES permit.

(2) Overflow Reduction Volume means the difference between the volume of overflow in million gallons per year for the condition prevailing at the time of the report and the volume of overflow in million gallons per year for the baseline year. The baseline year is represented by Philadelphia’s physical systems as they were configured on January 1, 2006. Both volumes will be determined from modeling, using climatic data representing the same “typical year” for Philadelphia as determined in the LTCPU development process, and a hydrologic/hydraulic model calibrated with flow data collected for verification of actual performance.

As the Table shows, the Water Department will be evaluated on its progress in the following areas:

- Upgrade of Water Pollution Control Plants (Design and Construction): The Water Department submitted Facility Concept Plans for each WPCP and their respective collection systems to PaDEP and the EPA by the June 1, 2013 deadline. The Water Department’s plan is to increase the primary treatment capacity of the Northeast WPCP by 215 mgd, and Southeast WPCPs by 60 mgd. These increases will be achieved through a combination of collection system and plant upgrades to increase both the flow delivery to the plant and the flow through the treatment train. The Southwest WPCP will not increase the permitted treatment capacity, but will add equipment redundancy to ensure full operability during wet weather events.

- Miles of interceptor lined: Involves lining streamside interceptors within the Cobbs and Tacony-Frankford watersheds to improve stream quality and aesthetics during dry weather. The Water Department is on target to meet their five-year target. They are conducting this work under contract to increase inspections and identify new projects without compromising existing services. The Department appears to be ahead of schedule to meet this requirement. As of June 2014, the Water Department reports that 6.2 miles of interceptor have been lined. There are another 4.3 miles of projects being prepared for construction, and another 4.6 miles of projects in design.
- Reduction of CSO volume: Tracks the reduction of total CSO volume compared to the baseline year of 2006. The Water Department has various traditional and green infrastructure improvements completed or planned and are positioned to meet the 5-year requirement. These projects include, but are not limited to, increasing the Northeast WPCP collection system and plant capacity through constructing a secondary treatment Bypass conduit and rehabilitating an existing sewer through sealing and relining projects.
- Total Greened Acres: Provide a measure of runoff capture during wet weather events. One Greened Acre is equivalent to one inch of managed stormwater runoff from one acre of drainage area, or 27,158 gallons of managed stormwater. Of the 9,564 cumulative Greened Acres to be achieved by Year 25, approximately 3,000 are expected to be completed through private development. As of June 2014, 392 greened acres have been constructed throughout the City by the Water Department and through private re/development. Thus, the Water Department is on target for meeting the 5-yr requirement of 744 greened acres. The Department reflects that it has another 64 greened acres in construction or under contract to be constructed as of June 2014 as well.
- Equivalent Mass Capture: Using the presumption approach outlined in the National CSO Control Policy, the goal is to reduce the impact of BOD, TSS, and fecal coliform bacteria on local waterways equivalent to the capture and treatment of 85 percent of CSO overflows.

The Water Department is on target for meeting all of performance standards defined above as well as all other deliverables identified in the COA. To date the Water Department has submitted the following deliverables:

- Implementation and Adaptive Management Plan (December 2011).
- Green Infrastructure Maintenance Manual development process plan (June 2012).
- Comprehensive Monitoring Plan (December 2012).
- Facility Concept Plans for each of the WPCPs (June 2013).
- Updated Nine Minimum Controls Report. (June 2013)
- Tributary Water Quality Model for Bacteria (June 2013).
- Tributary Water Quality Model for Dissolved Oxygen (June 2014).
- Green Infrastructure Maintenance Manual – 1st Edition (June 2014).
- Sanitary Sewer Evaluation Survey Report (June 2014).

The COA outlines civil penalties to be assessed should the Water Department be unable to meet the performance standards mentioned above or other requirements related to submission of periodic deliverables; record keeping; and planning, design, and construction requirements. Penalties for not meeting the 5-Year performance targets listed above would amount to $25,000 per month per violation and would increase to $100,000 per month per violation should the Water Department remain in violation for 13 months or more.

The Water Department has committed to spending $2.4 billion ($1.2 billion in non-inflated 2009 dollars) over 25 years to implement the LTCPU. EPA guidance utilizes a residential indicator for assessing the financial impact of the LTCPU. The residential indicator is a ratio of wastewater cost to the average median household income (MHI), and a result of greater than 2.0 percent is considered a high financial impact to a utility's customers. The Water Department performed a Financial Capability Assessment using methods outlined in the EPA's Guidance for Financial Capability Assessment and Schedule Development. The results show that the financial burden on residents will be approximately 2.51 percent of the MHI by the end of the 25-year implementation period. The COA includes a provision that allows the Water Department to request an extension of time for implementation should it be determined that the cost to implement the LTCPU has exceeded or will exceed 2.27 percent of MHI.

E. RELEVANT REGULATORY PERMITS AND CONSENT DECREES

The Water Department's wastewater treatment plants and the collection system are regulated by three permits which include:

- National Pollutant Discharge Elimination System ("NPDES") Permits
- Municipal Separate Storm Sewer System ("MS4") Permit
- Title V Major Source Operating Permits-Clean Air Act (Title V) Permit

1. National Pollutant Discharge Elimination System Permits

The NPDES permits for the Northeast, Southeast, and Southwest WPCPs all became effective September 1, 2007 and expired August 31, 2012. The facilities are operating under a continuation of the expired permit per PaDEP policy. In February 2012 PaDEP certified that the application for the permit renewal was Administratively Complete. The Water Department has received a draft version of the NPDES permit for the Northeast WPCP. The PaDEP has incorporated the requirements of the LTCPU COA into the NPDES permit as was negotiated in the COA. A draft of the new permit for the Northeast WPCP is being circulated between the PaDEP, EPA, and the Water Department. Once that permit is finalized, the Water Department anticipates that permits for the Southwest WPCP and Southeast WPCP will follow. The new permit is anticipated to be issued sometime in calendar year 2015.

Current NPDES permit limitations are included in Table IV-2. Key components of the permits and several of the more significant changes that have been negotiated with these permits are summarized below. Future permit considerations may include limits on dissolved oxygen and nutrients but modifications or additions for these parameters are not anticipated by the Water Department in the next permit cycle.

The NPDES permit is comprised of three major components: Parts A, B and C. Part A regulates the effluent discharges for each plant and provides for monitoring, record keeping, and reporting requirements. Table IV-2 details the key effluent discharge limitations established in the permits. Additionally, Part A outlines monitoring requirements for the plant's stormwater outfall system (each plant has its own stormwater system), which were formerly part of a separate permit. Part A also lists all combined sewer outfalls that are tributary to each of the wastewater treatment plants. Specific limitations and programs for the combined sewer outfalls are detailed in the other sections of the permit.

Part A of the permits includes the plant's stormwater outfall system as a part of the permitted facilities. Every stormwater outfall at the WPCPs must be monitored for select parameters on an annual basis. The Water Department, in compliance with the requirements of the permits, developed a Preparedness, Prevention, and Contingency Plan ("PPC") to assure that stormwater outfalls do not pollute the receiving waters and Best Management Practices ("BMPs") are being implemented. The Water Department updates the PPC annually in concert with updates to the spill prevention plans.

Part A of the NDPES permit also includes additional fecal coliform limitations. In addition to the fecal coliform geometric mean limitation, the instantaneous maximum for the fecal coliform concentration shall not exceed 1,000 fecal coliforms per 100 milliliters in more than 10 percent of the samples. This requirement took effect September 1, 2009 for the Northeast WPCP. The plant has been meeting this requirement while meeting the total residual chlorine limitation. Similar requirements have been in place since September 2007 for the Southwest and Southeast plants.

Part B of the NPDES permit outlines Management Requirements, Penalties and Liabilities and Other Responsibilities.

Table IV-2 Current NPDES Key Effluent Limitations

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATION
	(Average Monthly)
$CBOD_5$ (mg/l)	25[(1) (2)]
$CBOD_5$ (lbs/d)	36,430[(1)], 19,800[(2)]
$CBOD_{20}$ (lbs/d)	71,760[(1)], 35,830[(2)] , 33,600[(3)]
$CBOD_5$ (% removal)	86[(1)], 89.25[(2)]
$CBOD_5$ (% removal at flows > MDF)	See footnote 5
BOD_5 (mg/l)	30[(3)]
BOD_5 (lbs/d)	19,650[(3)]
BOD $_5$ (% removal)	86[(3)]
BOD_5 (% removal at flows > MDF)	See footnote 6
TSS (mg/l)	30[(1) (2) (3)]
TSS (lbs/d)	52,540[(1)], 50,400[(2)], 28,025[(3)]
TSS (% removal)	85[(1) (2) (3)]
TSS (% removal at flows > MDF)	See footnote 7
pH	6-9[(1) (2) (3)]
Fecal Coliform	200/100 ml[(4)]
Total Residual Chlorine (mg/l)	0.5[(1) (2) (3)]
Average Monthly Flow - AMF (mgd)	monitor/report
Maximum Daily Flow – MDF (mgd)	monitor/report
Maximum Daily Flow – MDF recognized for calculating % removals at high flow day events (mgd)	315[(1)], 300[(2)], 168[(3)]

(1) Northeast WPCP
(2) Southwest WPCP
(3) Southeast WPCP
(4) Geometric mean
(5) If a calendar month includes one or more days where flows exceed the MDF, a value of 86 percent and 89.25 percent respectively at the Northeast WPCP and the Southwest WPCP may be used for those days for calculating $CBOD_5$ percent removal.
(6) If a calendar month includes one or more days where flows exceed the MDF, a value of 86 percent at the Southeast WPCP may be used for those days for calculating BOD_5 percent removal.
(7) If a calendar month includes one or more days where flows exceed the MDF, a value of 85 percent may be used for those days for calculating TSS percent removal.

mg/l	milligrams per liter
ppd	pounds per day
mgd	million gallons per day
$CBOD_5$	Carbonaceous Biological Oxygen Demand (five day)
BOD_5	Biochemical Oxygen Demand (five day)
TSS	Total Suspended Solids
AMF	Average Monthly Flow
MDF	Maximum Daily Flow

Part C of the permits contains 29 "Other Requirements." Some of the key requirements are summarized as follows:

- Standard test methods are referenced for all of the parameters being monitored.
- Requirements are established for stormwater outfalls serving the wastewater plants. This section calls for the preparation of a Preparedness, Prevention and Contingency Plan (PPC) for each facility. Also, an annual comprehensive site compliance evaluation must be performed as well as the implementation of Stormwater Management BMPs.
- The schedule calls for a re-evaluation of the local limits for Significant Industrial Users ("SIUs") to be completed within one year of the permit issuance date. The Water Department re-evaluated its local limits associated with its pretreatment program and submitted to the PaDEP for approval. The Water Department's current regulations reflect the approved local limits.
- The section for calculating and reporting mass loadings acknowledges the Water Department's efforts to reduce the frequency and volume of untreated sewage discharges and allows flexibility in calculating and reporting removal levels and mass loadings at the treatment plants during high flows.
- Development of an Operations and Maintenance Plan is required. Each wastewater treatment facility must update its plan whenever a significant revision to the facility occurs. The plan contains the following elements:
- Process control strategy
- Monitoring and compliance plan
- Wet weather operations strategy
- Emergency operations plan
- Preventative maintenance plan
- Emergency maintenance plan
- Solids management plan
- Each of the wastewater treatment plants already has O& M manuals and Standard Operating Procedures (SOPs) that are in total conformity with this requirement.
- A Sludge Dewatering Summary Report is required. This monthly report is to be filed along with the Discharge Monitoring Reports ("DMRs").
- A Polychlorinated Biphenyls ("PCBs") Requirements Plan is required to be prepared. The Water Department has previously prepared, and the Delaware River Basin Commission ("DRBC") has accepted, a Pollution Minimization Plan ("PMP") related to PCBs. The Water Department updates this plan annually.
- Development of a CSO Program is required. This section details a comprehensive program to minimize combined sewer overflows and has three components:
- Implementation of the Nine Minimum Controls

- Implementation of the Long Term CSO Control Plan
- Monitoring and Assessment

The details and schedules for all components of the CSO Program are documented in the June 1, 2011 COA that is discussed above. The requirements of the COA will likely be included in the NPDES permits when they are renewed in 2015.

2. Municipal Separate Storm Sewer System Permit

PaDEP has the authority to regulate municipal stormwater through the MS4 program. The Water Department's previous permit was issued in September 2005 and expired in September 2010. The Water Department submitted a renewal application in March 2010, as is required, and continues to operate under the old permit until PaDEP issues a new one. The Water Department submitted a draft permit to the PaDEP for consideration in early 2013. The Water Department seeks significant modifications to the permit to allow them to focus more on techniques that will provide measurable water quality improvements. The Department continues to negotiate the new permit and sent a draft revision to PaDEP in late October 2014. The Water Department anticipates that the MS4 permit will be finalized by late calendar year 2015. With both permits up for renewal, the Water Department is hopeful that the issuance and expiration dates for the new NPDES permits for the plant and the MS4 will coincide to facilitate overall watershed planning and reporting.

Sections of the Water Department's expired permit include:

- Sediment Total Maximum Daily Load ("TMDL") for Wissahickon Creek
- PMP for PCBs in the City's MS4
- Stormwater Management Program
- Source Identification
- Discharge Management, Characterization, and Watershed-based Assessment and Management Program for three watersheds (Pennypack, Poquessing and Wissahickon)
- Detection, Investigation, and Abatement of Illicit Connections and Improper Disposal
- Monitoring and Control Pollutants from Industrial Sources
- Monitoring and Control Stormwater from Construction Activities
- BMPs

3. Title V Major Source Operating Permits

As amended, the Federal Clean Air Act (the "Clean Air Act," or "CAA") sets forth requirements for the regulation of certain air emissions. In January 1994, the PaDEP published regulations pursuant to the Clean Air Act's mandates for the control of Volatile Organic Compounds ("VOC") and NOx emissions from major stationary sources. These regulations required, in part, that all sources of VOC and NOx quantify their emissions. The three WPCPs are sources of VOCs and NOx.

The Title V permits require bi-annual reporting for NOx and VOC emissions. Section C, Facility Wide Requirement of the Title V permits, also contains requirements regarding odor emissions. Any detection of a malodorous air contaminant outside the facility property line must be reported. Permit requirements consist of monitoring and reporting. No limitations are stipulated.

In June 2001, Title V Major Source Operating Permits were issued for the Northeast WPCP and the combined site of the Southwest WPCP and the BRC. In January 2013, the Water Department entered into a Title V consent order agreement to address the odor issues from the Northeast WPCP by installing gravity thickeners and related odor control by 2018. With respect to revising the permits for the Northeast WPCP and Southwest WPCP, the Water Department completed negotiations with the City of Philadelphia's Air Management Services and has received its permit for the Northeast WPCP. The Title V permit for the Biosolids Recycling Center (BRC) will be the responsibility of Philadelphia Biosolids Services, LLC ("PBS") going forward, as they are the operator of the BRC. With the removal of the BRC, the Water Department anticipates that the permit for the Southwest WPCP will be permitted as a minor facility that is no longer subject to Title V. The permit for the Northeast WPCP includes the requirement to install gravity thickeners as part of the sludge handling process.

Since 2008, no odor violations have been reported at the Northeast WPCP, Southeast WPCP, or Southwest WPCP.

F. WASTEWATER SYSTEM INITIATIVES

1. Wastewater Master Planning

Similar to the Water System Master Plan mentioned in Section III, the Water Department is concurrently conducting a wastewater system master plan. The general objective of the wastewater master plan is to develop wastewater system improvements through the year 2065. The wastewater system master plan incorporates elements of the COA and LTCPU that have already been agreed to with PaDEP. The following bullets provide an indication of the planned phases of the wastewater master planning effort:

- Phase 1 – Phase 1 consists of developing the overall master plan outline as well as evaluating current conditions of the wastewater system. Based on current conditions, a projection of future conditions, including wastewater flows and loadings will be performed that incorporate the elements of the Water Department's LTCPU.
- Phase 2 - Phase 2 consists of evaluating future wastewater needs, particularly with respect to renewal and replacement of existing wastewater plant, and potential future regulatory requirements that may result in additional capital needs to achieve compliance. The assessment related to potential future regulatory requirements will include elements related to climate change, nutrient removal, biosolids, odors, and micro-constituents.
- Phase 3 – The final phase reflects the development of the overall wastewater system master plan that reflects the Water Department's vision of the "utility of the future."

  As mentioned above, this wastewater system master planning effort will be performed concurrently with the water system master planning effort. The wastewater system master plan is projected to be complete by an approximate date of first quarter of calendar year 2016. The final master plan will outline projected capital improvements necessary for achieving overall plan elements. Once finalized, the capital improvements that result from the master planning effort will be incorporated into the Water Department's overall CIP.

2. Energy Initiatives

The Water Department is committed to achieving energy efficiency in all of its operations, particularly in light of a series of internal and external factors that include: the January 2011 deregulation of power utilities in Pennsylvania; volatile energy markets, global and industry-wide emphasis on energy reduction and carbon footprint analysis; the potential for energy intensive pumping or treatment requirements in the future; and the City's Greenworks Philadelphia Plan which calls for reductions in energy consumption and greenhouse gas emissions, along with increased energy independence. Previous or ongoing efforts in energy conservation and optimization include: optimization of pumping strategies; multiple efforts to utilize co-generation facilities; and implementation of lighting system evaluations and upgrades.

In fiscal year 2010, the Water Department adopted a Utility-Wide Strategic Energy Plan ("Energy Plan"). The Energy Plan included rate projections in light of the then anticipated deregulation, energy inventories and conservation management strategies, and preliminary evaluations of various renewable energy sources. In the process of developing the Energy Plan, the Water Department established an organizational structure to ensure that it would be adopted and implemented at all levels, from senior management to the technical staff and trades. This included an Executive Management Team, Energy Management Team, and Energy Champion. The Energy Plan calls for energy independence at the wastewater plants, management and control of energy usage, and triple bottom line analyses to integrate energy consumption into planning decisions.

The Water Department continues to implement the Energy Plan by implementing energy conservation measures, developing renewable energy sources, and pursuing strategic energy purchasing opportunities. The Water Department has a variety of energy-related projects in various stages of investigation, development, and implementation, including the following:

- Construction of a 5.6 megawatt digester gas cogeneration facility has been completed at the Northeast WPCP. The facility is expected to generate 44 megawatt hours per year, which accounts for 81 percent of the WPCP's total power consumption or 15 percent of the Water Departments total power consumption.
- The Water Department installed geothermal technology at the Southeast WPCP in February 2012 as a pilot test. The test and system proved successful with the geothermal unit producing enough heat to heat the compressor building. This could save the Water Department $11,000 annually. A detailed cost estimate and scale-up analysis is ongoing.
- At the Southeast WPCP, the Water Department's photovoltaic solar system continues to generate approximately 300,000 kilowatt hours of AC power per year. In fiscal year 2014 341,142 kilowatt hours were generated.
- Efforts to enhance digester gas production at Southwest WPCP include: the addition of aircraft de-icer fluid from the Philadelphia International Airport directly into the anaerobic digesters, and a two-phase feasibility study on the addition of food waste to the anaerobic digesters. In 2008, the Water Department initiated a pilot evaluation of the OpenCEL®

system which is designed to reduce digester solids and increases methane generation. Based on the technical results achieved and the system economics, the Water Department has decided to terminate this test.

- The Water Department is leading the Water Environment Research Foundation project ENER1C12 – Energy Balance and Reduction Opportunities, Case Studies of Energy-Neutral Wastewater Facilities and Triple Bottom Line ("TBL") Research Planning Support. The purpose is to investigate energy efficiency and production opportunities that achieve energy neutral wastewater treatment. The Northeast WPCP and onsite Cogeneration Facility will be featured as one of the energy neutrality case studies.

Other areas where the Water Department is exploring the feasibility of energy alternatives include: geothermal wells, hydroelectric, hydrokinetic and other enhanced gas production pathways.

G. WATER POLLUTION CONTROL PLANTS OVERALL PERFORMANCE

The three WPCPs have maintained high levels of treatment such that they have been recognized by the National Association of Clean Water Agencies ("NACWA"), formerly the Association of Metropolitan Sewerage Agencies ("AMSA"), with either Silver, Gold, or Platinum awards over the past decade. The Northeast and Southeast WPCPs met all permit requirements in calendar year 2013 and received their 9th and 14th NACWA platinum awards, respectively. The platinum award is given to facilities that are in perfect compliance with NPDES requirements for five consecutive calendar years. The Northeast and Southeast WPCPs are working toward their 10th and 15th platinum awards, respectively. Southwest received the NACWA gold award for 100 percent NPDES permit compliance in calendar year 2013 and expects to continue to be in Gold status for 2014, which will be the fourth consecutive Gold award.

H. NORTHEAST WPCP

1. Service Area

The Northeast WPCP serves northeast Philadelphia and suburban areas in southeast Bucks and eastern Montgomery counties.

2. Capacity and Performance

The plant is sized for a design average flow of 210 mgd and a peak flow of 435 mgd. The peak flow of 435 mgd represents an increase of 15 mgd since 2011 and is the result of the removal of hydraulic bottlenecks within the primary treatment process piping. As indicated in the NPDES permit, specific projects are detailed to further increase the capture and treatment of combined sewage flows. The NPDES permit for each WPCP required the CSO Long Term Control Plan (LTCP) to be updated by September 1, 2009. Through the GCCW program associated with the LTCPU (see above), a commitment has been made to expand the capacity of the Northeast WPCP to include a 215 mgd secondary treatment by-pass to allow for the better capture and treatment of combined sewage during wet weather events. The bypass conduit is currently under construction.

During fiscal year 2014, the plant treated an average flow of approximately 175 mgd. Plant performance is normally well below permit limits. Effluent concentrations are typically at or below

10 mg/L for $CBOD_5$ and TSS. Total Residual Chlorine ("TRC") levels are also below permit requirements.

3. Liquid Stream Process

The facility consists of a Preliminary Treatment Building ("PTB") providing screening, influent pumping and grit removal; primary clarifiers; aeration basins; final clarifiers; and disinfection.

Residuals from the Baxter Water Treatment plant are discharged to the Northeast WPCP. The characteristics of these residuals reduce available phosphorous for the activated sludge process. The plant has the ability to add phosphoric acid (to assure proper nutrient levels) if needed. Key activities or improvements to the liquid stream process that are currently in progress include the following:

Projects recently completed:

- Replacement of Hydrogritters; 2 of 3 replacement units (grit cans) are installed and operational

Projects either planned or ongoing:

- Under Construction:
  - Frankford High Level lining project and sealing of a diversion chamber
  - New Secondary By-Pass Conduit from Set 1 to Effluent Conduit
- In Design Process:
  - New Preliminary Treatment Facility
- Planned for Future Implementation:
  - Overhaul influent pumps – ongoing routine maintenance conducted by plant staff

4. Scum and Sludge Stream Process

Sludge treatment is provided by Dissolved Air Flotation ("DAF"), thickening of Waste Activated Sludge ("WAS"), and anaerobic digestion of combined primary and thickened waste activated sludge. Digested sludge is delivered by gravity to two transfer tanks. Approximately once daily, the sludge from these tanks is discharged to barges and transported to the BRC for final processing for beneficial reuse. PBS operation of the BRC has been smooth and has not impacted the solids handling and transporting conducted by the Northeast WPCP. Key activities or improvements to the sludge stream process that have recently been made or are currently in progress include the following:

Projects recently completed:

- Replacement of Final Sedimentation Tank Set 1 Return Sludge Piping
- New Combined Heat and Power facility

Projects either planned or ongoing include:

- Under Construction:

  (There are currently no projects under construction)

- Projects awaiting a Notice To Proceed:
    - Construction of New Gravity Sludge Thickeners

5. Facility and Utility Maintenance Projects

In addition to the liquid stream and sludge stream projects listed above, key facility and utility maintenance projects are listed below:

Projects recently completed:

- Installation of Plant 15 KV Primary Switchgear
- Redirection of Streets Department property area stormwater drains away from the outfall conduit

Projects either planned or ongoing:

- Under Construction:
    - Replacement of Process Air Blower Valves and Actuators (completion expected in summer of 2015)
    - Replacement of Biogas meters
    - Rehabilitation of the Plant Water System
    - Replacement of Aeration Tank High Voltage Switchgear
- In Project Controls Pending Bid:
    - Painting of Aeration Tanks Process Air Headers Replacement of Existing 480V Switchgear on Set 2 Final Sedimentation Tank
    - Replacement Emergency Lighting throughout the Plant
    - Replacement of interior and exterior doors throughout the plant
- In Design Process:
    - Upgrades to Final Sedimentation Tank Set 1 Scum Collection Controls
    - Automation of Final Tank Scum Removal (both Set 1 and Set 2)
- Planned for Future Implementation:
    - Acquisition of properties for siting of new Pretreatment Building)

6. Operation and Maintenance

A process computer system is currently used for monitoring certain plant processes and for computing various process trends. The following unit processes are automated: raw influent pumps, bar screen rakes and conveyors, influent flow splitting to the primary settling tanks, scum gates, dissolved oxygen and air flow controls for the aeration tanks, return sludge system components, hypochlorite disinfection, digester feeding, and DAF thickening system. Automation of final settling tank scum collection is currently under design. Operators are assigned responsibility for key plant facilities with dedicated operator stations. The stations are equipped with computer monitors which assist the operator in making process control decisions. Upgrades have made process and lab data more available via web-based reporting, and trending and analysis of data has been greatly enhanced. An on-site process control laboratory is also used to check and optimize plant operation.

Maintenance management is facilitated by the MAXIMO® CMMS. This Computerized Maintenance Management System ("CMMS") is a Water Department-wide system that is primarily used by the treatment plants (both water and wastewater) and the pumping stations for planning and tracking maintenance. This program is used to organize all plant maintenance activities and to help staff emphasize predictive and preventive maintenance. Currently, planned maintenance accounts for approximately 75 percent of all the work orders.

The status of plant tankage, conduits, buildings, and structures is tracked through the Capital Facilities Assessment Plan ("CFAP"). The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Assets are cataloged, and inspections are programmed over a ten year period. The MAXIMO® system is used to generate inspection work orders. Results of facility inspections are used in the capital planning process.

The Northeast WPCP is operated seven days per week with three daily operating shifts. Approximately 112 (132 authorized) total staff, including administrative, operations, and maintenance personnel are employed at the Northeast WPCP. There are three certified operators. Currently, there are 20 vacant positions. Vacancies in the instrumentation series are considered the most critical. Currently, there are 4 vacancies in this category. The plant participated in a Water Department-wide apprenticeship program and hired three interns that completed the program. Plant staff believes that participation in the apprenticeship program helped attract talented and skilled trade professionals.

Other significant Operation and Maintenance programs include:

- The chlorine minimization program continues. Management believes this program has resulted in both cost savings and water quality benefits.
- Northeast WPCP participates in load shedding program with the local utility provider, PECO, providing an estimated cost savings between $40,000 and $50,000 per year.
- Installation of High Efficiency Lighting is an ongoing effort using internal forces and is included as a requirement in relevant improvement projects.

7. Odor Issues

The Water Department continues its long standing commitment to managing odor emissions at the Northeast WPCP. Odor violations by calendar year are presented in Table IV-3. As can be seen, there have been no violations in the last four years.

Table IV-3 Odor Violations

CALENDAR YEAR	2011	2012	2013	2014
Violations	0	0	0	0

The reduction in odor violations has occurred as the Water Department has strengthened its odor minimization program. Some highlights of the Water Department's program include taking a more proactive approach to minimizing odors, addressing any potential odor-causing issues in a timely manner, and maintaining a good rapport with the neighboring community and AMS staff. To further reduce odor sources the new gravity sludge thickeners to be constructed in the coming years will allow for continual pumping and thickening of the primary sludge. This project will help to eliminate a potential odor source and provide a more uniform feed to the digesters.

8. Cogeneration System

As mentioned above in the Energy Initiatives Section, a new cogeneration facility designed to produce approximately 5.6 MW of electricity utilizing digester gas as a fuel source is currently on line and operating as designed. The facility produced approximately 80 percent of the plant's power in fiscal year 2014.

I. SOUTHEAST WPCP

1. Service Area

The Southeast WPCP service area includes the eastern portion of Center City, the eastern portion of South Philadelphia, a portion of North Philadelphia, the majority of Kensington/Richmond, and the central portion of Germantown/Chestnut Hill. The Philadelphia Naval Base and a small portion of Springfield Township in Montgomery County are also served by the Southeast WPCP.

2. Capacity and Performance

The plant provides treatment for an average annual design flow of 112 mgd and a peak flow of 224 mgd. The average daily flow to the plant in fiscal year 2014 was 81 mgd. The NPDES permit for each WPCP required the CSO Long Term Control Plan (LTCP) to be updated by September 1, 2009. Through the Green City, Clean Waters program associated with the LTCPU, a commitment has been made to expand the wet weather capacity of the Southeast WPCP by 50 mgd through process and hydraulic improvements in the plant and collection system. This effort will review bottlenecks within the plant related to the aeration tanks and the secondary clarifier weirs and will allow for better capture and treatment of combined sewage during wet weather events. Studies are currently being conducted to detail the hydraulic capacities of the processes and inform future projects, but there have not yet been any capital projects identified.

The Southeast WPCP meets or exceeds NPDES requirements as evidenced by its award winning performance that is mentioned above. Effluent concentrations of less than 10 mg/L for BOD and TSS are consistently achieved. Total residual chlorine levels are also below permit requirements. In fiscal years 2013 and 2014, there were no odor complaints.

3. Liquid Stream Process

Liquid stream processes of the plant facilities include: influent pumping, bar screens, grit removal, pre-aeration, primary clarifiers, air activated sludge process in covered aeration basins, final clarifiers, chlorination, and effluent pumping. Screenings, scum, and grit that are removed from the process are trucked to the Southwest WPCP for processing and ultimate disposal to a landfill.

Since 1996, reduced secondary system organic loadings have allowed plant staff to operate the secondary system without the original cryogenic oxygen generation facility. The system is now operated in an air activated sludge mode, using the mechanical aerators and blowers for aeration. The cryogenic oxygen facility is no longer in service.

Residuals from the Queen Lane Water Treatment plant are discharged to the Southeast WPCP. The characteristics of these residuals reduce available phosphorous for the activated sludge process. Therefore, phosphoric acid is added to assure proper nutrient levels are maintained.

4. Sludge and Scum Stream Process

Primary sludge is pumped to a wet well in the sludge pumping station by pumps located in sumps at the primary clarifiers. Waste activated sludge is pumped to sludge storage tanks. Separate sludge transfer pumping systems are provided for primary and waste activated sludge. Both systems are located in the pump room of the sludge pumping station, and two eight-inch force mains convey the sludge to the Southwest WPCP for processing. The processed sludge is then transfer to BRC and pelletized for beneficial reuse.

Scum and grease from the primary and secondary clarifiers are pumped to scum concentration tanks. The scum is collected and trucked to the Southwest WPCP for separate processing and ultimate disposal to a landfill.

Projects recently completed:

- Replace Sludge Grinders / Primary Sludge Tank Sludge Pumps
- Replacement of Waste Activated Sludge Pumps and Primary Sludge Pumps

Projects either planned or ongoing in this area of the facility include:

- In Construction
  (There are currently no projects under construction)
- In Project Controls Pending Bid
  (There are currently no projects pending bid)
- In Design Process:
  - Rehabilitate or Replace Sludge Force Main (portion under the river)
  - Scum Concentration Building and Scum Transport Modifications, these two projects were re-evaluated and combined, design modifications are underway.

5. Facility and Utility Maintenance Projects

In addition to the liquid stream and sludge stream projects mentioned above, projects recently completed, ongoing or planned at the Southeast WPCP include the following:

Projects recently completed:

- Overhaul of the final four aeration mixer units (all 32 units have been rebuilt)
- Effluent pump station circuit breaker replacement, completed in-house
- Scheduled (10 year) rehabilitation of six plant influent pumps and five plant effluent pumps
- Five year inspection of both sodium hypochlorite storage tanks, as required by PaDEP, with minor repairs to Tank 2
- Replacement of doors throughout the Plant
- Roof Replacement Administration and Maintenance Building

Projects either planned or ongoing:

- Under Construction:
  - Replacement of the Influent Bar Racks, east unit is installed currently addressing final operational issues, then west unit will be installed in spring 2015

  - Rehabilitation of the HVAC System Throughout the Plant-Phase II is being conducted in phases by in-house staff
- In Project Controls Pending Bid:
  - Concrete repairs and replacement of Flights and Chains in the Final Sedimentation Tanks
- In Design Process:
  - Repaving of Roads, Installation of "Green" Parking Lots and Replacement of Existing Perimeter Fencing
- Planned for Future Implementation:
  - Replace/refurbish Railings throughout the Plant
  - Replace switchgear in the Compressor Building

6. Operation and Maintenance

The Plant operates continuously and has an authorized staffing level of 67, including four certified operators. There are eight staff vacancies. Southeast WPCP currently has three interns. Management has found internship programs to be effective in recruiting and hiring entry level staff. Management anticipates several electric shop retirements in the coming years and is planning accordingly, training younger staff to step up.

Control of the plant is performed through the Process Control Center (“PCC”). The PCC houses a digital computer and operator interface equipment. The PCC operator has unit process CRT graphic displays available at the Central Computer Console. The computer can control the influent and effluent pumping stations, primary sludge pumping, final clarifier scum collection, return and waste activated sludge and disinfection systems.

Maintenance management is facilitated by the MAXIMO® CMMS. Planned maintenance work is averaging 90 percent of the total maintenance work orders. Major equipment uptime is greater than 95 percent. The Southeast WPCP has a predictive maintenance program that includes equipment vibration testing, oil analysis, and infrared testing of electrical equipment.

The status of plant tankage, conduits, buildings and structures is tracked through the CFAP. The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Assets are cataloged, and inspections are programmed over a ten year period. The MAXIMO® system is used to generate inspection work orders and results of facility inspections are used in the capital planning process.

A number of programs have been instituted which have resulted in cost savings. Highlights of these modifications include:

- Energy Management initiatives such as off-peak operation and energy efficient lighting continue to save energy. Five out of six high mast lights have been replaced with LED lights
- Continued operation of the Solar Photovoltaic Energy System, which produces two to three percent of the plant’s power
- Raised influent operating level of sewer to reduce pumping costs.

- Online analyzers for return activated sludge, mixed liquor suspended solids, and sodium hypochlorite allow for more precise process control and reduction of chemicals.
- The Geothermal Pilot program with heat exchangers on the mixed liquor for heat recovery continues.

J. SOUTHWEST WPCP

1. Service Area

The Southwest WPCP serves the western portions of Philadelphia and areas in eastern Delaware and southeastern Montgomery counties.

2. Capacity and Performance

The Southwest WPCP was designed to handle an average annual flow of 200 mgd and a peak flow of 400 mgd. Future plans call for the treatment of more flow during storm conditions. In order to accept flows beyond 400 mgd, a variety of hydraulic bottlenecks will need to be eliminated. The limiting hydraulic factors include conduits linking the primary clarifiers to the aeration basins, influent pumping station, and the plant effluent conduit. Through the GCCW program associated with the LTCPU, a commitment has been made to address bottlenecks in the collection system and within the plant to increase the delivery and treatment of combined sewage during wet weather events. At the plant, this will be achieved through increasing redundancy in pumping capability, specifically through the addition of a sixth effluent pump.

During fiscal year 2014, the plant treated an average of 178 mgd. Plant performance is well below permit limits with effluent concentrations consistently below 10 mg/L for CBOD and TSS. TRC levels are also below permit requirements. In fiscal years 2011, 2013 and 2014, the plant had no odor violations. The plant continues to be proactive in anticipating and addressing challenges. For example, a pilot study is currently being evaluated to address the impact on the treatment process of side stream loadings from the solids processing centrate stream in anticipation of potentially more stringent nutrient limits. There have been no effluent violations in fiscal year 2013 or fiscal year 2014. The plant has achieved three NACWA Gold Awards for calendar years 2011, 2012 and 2013 and expects to receive a Gold award for 2014 as well.

3. Liquid Stream Process

The plant liquid stream processes include influent pumping, screening, grit removal, pre-aeration/flocculation, primary clarification, secondary treatment using pure oxygen activated sludge, secondary clarification, effluent pumping, and disinfection.

The Southwest WPCP also receives water plant residuals from the Belmont facility and is the only plant to receive septage. The septage receiving program is monitored by the on-site laboratory and the Industrial Waste Unit.

Since 2010, the Water Department has implemented numerous upgrades and improvements to the Southwest WPCP.

Projects recently completed:

- Installation of a Sluice Gate at Effluent Pumping Station

- BioMix Large Bubble Mixing System for flocculation tanks and mixed liquor channels: this project is currently in the 30 test period

Projects either planned or ongoing:

- In Project Controls Pending Bid:
    - Replace Influent Screw Pumps
- In Design Process:
    - Installation of Sixth Effluent Pump
- Planned for Future Implementation:
    - Centrate Side Stream Treatment Pilot Project

4. Scum and Sludge Stream Process

Waste Activated Sludge ("WAS") from the Southwest plant is combined with WAS from the Southeast WPCP in mixing Chamber No. 1 and sent to the DAF tanks for thickening. The DAF thickened WAS is combined with primary sludge from both the Southwest and Southeast plants in Mixing Chamber No. 2. From there, the blended sludge is delivered to the digesters. After digestion, the sludge overflows into a sump where it is pumped to the BRC for final processing.

Projects planned for future implementation:

- In Design Process:
    - Rehabilitation of DAF tanks
- Planned for Future Implementation:
    - Replacement of Return Sludge Piping
    - Centrate Side Stream Treatment Project
    - Scum concentration and collection system upgrade

5. Facility and Utility Maintenance Projects

In addition to the liquid stream and sludge stream projects mentioned above, projects recently completed, ongoing or planned at the Southwest plant include the following:

Projects recently completed:

- Replace switchgear in PTB and Compressor Buildings
- Installation of a Green Parking Lot

Projects either planned or ongoing:

- Under Construction:
  (There are currently no projects under construction)

- In Project Controls Pending Bid:
    - Replace Roofing North and South Digester Buildings
    - Gallery Tunnel/Inspect/Repair/Paint
    - Replace Elevator in PTB

- In Design Process:
    - Installation of High Efficiency Lighting

  - Replacement and Automation of PST Scum Gate Actuators
  - Concrete Repairs and Coating of Aeration Tanks
  - Coating of Final Sedimentation Tank Interiors

- Planned for Future Implementation:
  - Replace Building Drain Lines
  - Replace Switchgear in Influent Pump Station ("IPS"), Effluent Pump Station ("EPS"), Access Buildings, and Scum Building
  - Replace Maintenance Building Boilers
  - New Truck Scale Facility
  - Reline Hypochlorite Tank
  - Concrete repair and coating of effluent conduits

6. Operation and Maintenance

The plant is continuously operated seven days per week. Approximately 125 total staff, including administrative, operations, and maintenance personnel are employed at the Southwest facility, including five certified operators. Currently, there are 10 vacant positions.

Main control of the plant is performed by the operating staff. Operators are assigned responsibility for key plant facilities with dedicated operator stations. The stations are equipped with computer monitors to assist the operators in making decisions regarding process control. The process control computer system has been upgraded. The system monitors all unit processes and currently controls the following operational parameters:

- Aeration tank oxygen feed
- Return sludge pumping
- Activated sludge wasting
- Secondary scum collection
- Effluent hypochlorite dosing
- Effluent pumping station
- Digester tank feeding
- Dissolved air flotation thickening
- Primary sludge pumping

Future unit processes to be automated will also include the primary scum collection. An on-site process control laboratory is used to check operating parameters. The process engineering staff analyzes data, determines operating set points, and establishes operating procedures.

The NPDES permit held by the Southwest WPCP calls for the development and updating of the Operations and Maintenance Plan, which must include standard operating procedures (SOPs). The plan and the SOPs underwent review and modifications during fiscal year 2014.

Maintenance management is facilitated by the computer program MAXIMO® CMMS. Planned maintenance work is averaging 90 percent of the total maintenance work orders. Major equipment uptime is greater than 90 percent. The plant has a predictive maintenance program that includes equipment vibration testing, oil analysis, and infrared testing of electrical equipment.

The status of plant tankage, conduits, buildings, and structures is tracked through the CFAP. The CFAP identifies critical assets within the plant that need to undergo detailed inspection. Assets are cataloged, and inspections are programmed over a ten year period. The MAXIMO® system is used to generate inspection work orders and results of facility inspections are used in the capital planning process

In addition to maintenance efforts, plant staff has made changes to increase plant efficiency and has continued energy reduction and other cost saving initiatives. Examples of their efforts include:

- Better utilization of digester gas has allowed the 22 building campus to be heated with only digester gas. No fuel oil is utilized. Also, since May 2012, Synagro has been offsetting natural gas consumption for sludge drying by utilizing 40 to 50 percent of the digester gas produced in the summertime. Dryers can utilize up to a 50:50 blend of natural gas and digester gas.
- The facility has a load shed agreement with PECO. The agreement has been utilized and treatment standards were not compromised. Annual savings were approximately $90,000 in FY 2014.
- The operating levels of the Effluent Pumping Station were raised to increase the efficiency of the pumps and reduce pumping requirements.
- Installation of high efficiency lighting is under design.
- Plant staff believes the oxygen generation equipment capacity is currently underutilized and is reviewing approaches to optimize the use of the oxygen that is produced.
- Increasing digester gas production by allowing airport de-icer to be fed directly to the mixing chambers leading to the digesters.
- Procurement and use of a special chopper pump to facilitate digester cleaning to reduce contract costs.
- The Installation of a large bubble mixing to reduce power consumption, which will eliminate the use of two 200 HP compressors for a total savings of 400 HP.

7. Digester gas utilization

The usage of fuel oil in plant boilers has been eliminated due to the successful use of digester gas to heat the 22 building campus. Some excess gas is used by Synagro at BRC, but the process of flaring excess gas is still necessary.

K. BIOSOLIDS RECYCLING CENTER

Philadelphia terminated the ocean disposal of biosolids in 1980. The City constructed a centralized biosolids dewatering and composting facility to handle the biosolids processing requirements associated with all three treatment plants. The BRC, formerly known as the Sludge Processing and Distribution Center, was completed in 1989. In 2008 the Water Department privatized the operation of the BRC to Synagro through the PBS company. Under a 20-year contract with the Water Department, PBS leased a portion of the property for the purpose of building a Class A thermal drying facility and assumed responsibility for the operation of the existing facility until the new facility was operational. The new facilities were fully operational and producing Class A pelletized biosolids in February 2012. Pellets are being applied as a soil amendment in Pennsylvania, Maryland, Virginia and Florida and are also used as an energy source and material for concrete production. With completion of the new facility, PBS has assumed responsibility for all regulatory requirements and permits.

PBS continues to meet or exceed all contractual requirements and monetary targets. The venture is viewed as a success by Water Department management. The Water Department maintains an engineer that monitors PBS performance and compliance with the contract. A high-level meeting is conducted every month as a means for exchanging information and discussing issues associated with the BRC. The transition of management and operation of the BRC to a private entity was smooth with no impact on the operation of the Water Department's WPCPs.

1. Declaration of Bankruptcy by Synagro Technologies, Inc

On April 24, 2013, Synagro filed for bankruptcy protection under Chapter 11 of the United States Bankruptcy Code with a plan to sell certain of its subsidiaries. The filing was made with the bankruptcy court in Delaware and was docketed as Case No. 13-11041-BLS. The closing of the sale to EQT Infrastructure II, LLC ("EQT") was announced on August 22, 2013. The Department has not experienced any service interruption or other impact to operations at the Biosolids Recycling Center. Synagro (as acquired by EQT) remains guarantor on the contract, and the Water Department views the outcome of the bankruptcy proceedings as a positive development.

L. WASTEWATER COLLECTION AND PUMPING

1. Organization and Responsibility

The Wastewater Collection section of the Water Department presides over an extensive urban sewer network. The section has the operational and maintenance responsibility for the sanitary, storm, combined sewers and stormwater inlets within the City limits. The Wastewater Collection section also operates and maintains storm and sanitary pump stations and township wastewater metering chambers. In addition, the field work for many of the programs outlined in NPDES CSO and MS4 Permits is accomplished by the Wastewater Collection section. The section is sub-divided into three units. The units and their principal areas of responsibility are:

- Sewer Maintenance - responsible for maintenance and repair of the wastewater and stormwater collector systems (storm, sanitary, and combined sewers) as well as the Waterways Restoration Team and Defective Connections Group. The unit is also responsible for cleaning, debris removal, and relief of emergency flooding conditions for all stormwater inlets. Inlet Cleaning, previously a standalone unit, is now managed as part of Sewer Maintenance. Management believes this consolidation will result in greater efficiencies within Wastewater Collection, a larger pool of candidates from which to recruit candidates for higher level positions, and a closer designation with job levels in the Distribution Unit.
- Flow Control - operates and maintains all system pumping stations, combined sewer regulators, tide gates, rain gauges, and township metering chambers. This unit also conducts all sewer Closed Circuit Television ("CCTV") inspections.
- Collector System Support - provides engineering and technical support to the other operating units.

2. Sewer Maintenance Unit

The Sewer Maintenance Unit maintains the City's network of sewers which includes all storm, sanitary, and combined sewers and the associated inlets and manholes. Responsibilities include repairs to sewers, stormwater inlets and manholes; inlet and sewer cleaning, and relieving choked sewers. The Waterways Restoration Team also resides within Sewer Maintenance. This team is responsible for general inspection, debris removal, culvert cleaning, plunge pool filling, bank stabilization, and outfall repair. In fiscal year 2014 the Waterways Restoration Team removed over 710 tons of debris from City streams.

The authorized staff level for the unit is 209 (excluding Inlet Cleaning which is discussed below). Currently, there are 33 vacancies, including critical vacancies for heavy equipment operators and brick masons. Table IV-4 contains a summary of the Sewer Maintenance Unit work order history.

Table IV-4 Sewer Maintenance Unit Work Order History

MAINTENANCE CATEGORY	FISCAL YEAR			
	2011	2012	2013	2014
Sewers Examined and Laterals Cleaned	20,298	24,680*	15,773**	10,483**
Waterway Restoration- tons of debris removed	750	741	1,416	710
Inlets Reset and Reconstructed	8,581	8,835*	8,794**	18,193**

Notes: *June 2012 data was estimated
** New Work Order Management System launched in June 2012

To more effectively provide service, the Sewer Maintenance Unit was reorganized. Crew sizes have been reduced, and the number of crews has increased to 44, enabling the unit to more consistently manage their work orders. The reorganization has also allowed the unit to dedicate two crews full time to planned work. These crews perform proactive inspections to uncover and identify problems prior to CCTV video inspections. The inspection crews have recently further increased their diagnostic capabilities by utilizing quick view cameras. These cameras are lowered in the manhole and provide valuable information without the need for a confined space entry.

The Defective Connections Group operates out of the Sewer Maintenance Unit. The Defective Lateral Detection and Abatement Program was initiated in fiscal year 1994 to ensure Water Department compliance with the NPDES MS4 Permit. The 16 employee group performs a variety of tasks with the goal of identifying, tracking, and eliminating sanitary flow into the storm system. The number of cross connections abated since the inception of the program and in fiscal year 2014 was 1,304 and 58, respectively. It is estimated that the program has eliminated 183.2 million gallons per year of sewer flow discharged to city creeks and streams. Through June 2014 the group had tested 52,776 properties and found 1,315 illicit connections of which 1,304 have been repaired. Quarterly and annual reports on the program are provided to the PaDEP. The Water Department Plumbing Repair Programs Unit is responsible for abating defective laterals that are detected.

In July 2010, the management of inlet cleaning was moved to the Sewer Maintenance Unit. The Inlet Cleaning Unit is primarily responsible for the inspection and cleaning of 71,692 stormwater inlets, the maintenance of inlet covers (retrieving, replacing, and locking), and for relieving choked inlet traps and outlet piping. The unit uses computerized routing to maximize crew utilization and efficiency. The Water Department recently purchased smaller inlet cleaning trucks. They anticipate that this equipment will have the dual benefit of allowing better access to smaller streets and reducing fuel consumption. Sewer Maintenance and the Inlet Cleaning Unit will likely be given some responsibilities for maintaining the Green Stormwater Infrastructure that is being installed City-wide as part of GCCW. The details and level of effort of this new role have not been determined, but Collector Systems management is participating in preliminary meetings with OOW related to defining maintenance practices and schedules.

The Inlet Cleaning Unit has an authorized staff of 106 and a current vacancy level of 13. Critical vacancies are semi-skilled laborers and heavy equipment operators. Despite these vacancies, overall performance has remained excellent. Table IV-5 contains a summary of inlet cleaning. An estimated 90 percent of the work was planned or scheduled, as opposed to being reactive or emergency-type activities.

Table IV-5 Inlet Cleaning

FISCAL YEAR	INLETS CLEANED	RESPONSE TIME (DAYS)
2011	71,771	2.3
2012	81,239	1.6
2013	99,612	1.6
2014	94,653	1.3

3. Flow Control Unit

The Flow Control Unit is responsible for the operation and maintenance of the combined sewer overflow system, the remote wastewater and stormwater pumping stations, the remote odor control facilities, the wastewater metering chambers, and the rain gauge network. The unit also performs all CCTV sewer inspections and contracted seasonal operation of the Water Department's floatables removable boat. The Flow Control Unit has an authorized staff 90 and 23 current vacancies. Critical vacancies include Electronic Technicians, group leaders and Assistant Superintendents.

The Flow Control Unit is continually updating their equipment to allow for the most efficient capture of CSOs, and to provide the most accurate and up-to-date information. They are using solar power for approximately one-third of their remotely monitored stations and have updated all stations to use cellular data transmission. This reduced their transmission costs, as compared to traditional hard-wire transmission, while allowing for more frequent data transmission.

a) Combined Sewer Overflow Program

As previously mentioned, the Water Department's OOW is responsible for the development of the GCCW Program associated with the newly signed COA. The Flow Control Unit is tasked with a significant amount of operation and maintenance activities to support GCCW.

The Flow Control Unit uses the Real Time Control ("RTC") center at its Fox Street facility to monitor 175 CSO points in its collection system. The combined system also consists of 89 tide gates associated with CSOs, 26 storm relief structures (diversion chambers), 5 siphons, related wastewater control devices, and a city-wide remote monitoring system.

Combined systems were designed so that during dry weather all wastewater is conveyed to the sewage treatment plant. However, during certain rain events, the additional stormwater exceeds the capacity of the collection system and/or wastewater treatment plant. Therefore, during these rain events, the combined system was designed to discharge, or overflow, the excess mix of stormwater and wastewater directly to local waterways. These flow conditions can also occur during dry weather, and are referred to as dry weather overflows (DWOs). Eliminating DWOs is a key objective of GCCW.

Table IV-6 provides a history of DWOs, which have generally decreased and stabilized after reaching a maximum of 33 in 2005.

Table IV-6 DWO Activity

FISCAL YEAR	2011	2012	2013	2014
Dry weather overflows	15	12	14	3

The Flow Control Unit has increased remote monitoring of CSOs over time. The monitoring network currently includes over 320 sites with over 720 individual level and/or flow measurements. During the last two months of fiscal year 2014, 88.4percent of the CSO monitoring sites were operable.

b) Sewer Assessment Program

The Flow Control Unit currently has seven crews dedicated to CCTV inspection of sewers. All crews have access to the GIS system from truck mounted laptops. Crew technicians are certified through the National Association of Sewer Service Companies' ("NASSCO") Pipeline Assessment Certification Program ("PACP"), and create a video record of each sewer segment inspected. This video contains observations regarding any sewer defects in accordance with consistent defect code standards. All inspections for the day are wirelessly downloaded from the truck onto a server. The information is tied to the GIS system and made available to Water Department staff for design, hydraulic analysis, and field troubleshooting purposes.

All new field information is reviewed monthly by the Sewer Assessment Committee and repair and replacement projects are created and prioritized. The Water Department currently focuses on identifying NASSCO level 5 (pipeline has failed or will fail within 5 years) defects for repair or replacement, however, future plans call for evaluating NASSCO level 4 (pipeline has severe defects and is likely to fail in 5 to 10 years) defects for potential preventative maintenance lining projects.

An inspection history is provided in Table IV-7. During the past 10 years, the unit has inspected approximately 50 miles per year on average to satisfy the needs of various internal requests for preventative maintenance, trouble shooting, and long-term planning.

Table IV-7 Sewer Inspection Miles

FISCAL YEAR	2011	2012	2013	2014
CCTV Inspections	51.9	46.8	48.9	38.3

c) Wastewater/Stormwater Pumping Stations

The wastewater system includes 16 sanitary pumping stations (15 Water Department-owned and 1 owned by others but operated by the Water Department) and 3 stormwater pumping stations

(1 Water Department owned and 2 owned by others but operated by the Water Department) that are operated and maintained by the Flow Control Unit. The wastewater pumping stations range in capacity from 0.2 mgd to 195 mgd, and the stormwater pumping stations range in capacity from 6 mgd to 832 mgd. All the pumping stations are automated and remotely monitored. Each station has an emergency standby generator. Preventive and predictive maintenance is routinely practiced, and approximately 85 percent of the maintenance work orders are planned. Main pump equipment availability averaged 95.9 percent in fiscal year 2014.

Capital projects planned for the remote pumping stations include the rehabilitation of the Belfry Drive, Rennard, Linden Avenue, and Central Schuylkill wastewater pumping stations, as well as the rehabilitation of the 26th and Vare stormwater pumping station. Designs for the Linden Avenue, Central Schuylkill, and 26 and Vare pumping stations are 70 percent complete. The Central Schuylkill pumping station is scheduled to be bid in mid fiscal year2016. It is anticipated that the Linden Avenue and the 26th and Vare pumping stations will be bid in mid fiscal year 2016.

d) Odor Control

The Flow Control Unit operates and maintains two remote odor control facilities. Both facilities utilize a sodium hypochlorite solution to eliminate the buildup of hydrogen sulfide, thereby reducing odors and protecting the sewer structure. Facilities are remotely monitored and are routinely inspected. The dosing station located at the Queen Lane Raw Water pumping station injects the solution into the Upper Schuylkill East interceptor. The dosing station at the Totem Road pumping station injects the solution into the Bucks County force main.

e) Wastewater Metering Chambers

The Flow Control Unit maintains 56 chambers for the metering of flows from the surrounding communities. The sites are routinely inspected, and flow meter calibration is done annually. All flow signals are transmitted to the Real Time Control Center (“RTC”). Operational availability for these metering chambers averaged 88.4 percent during the last two months of fiscal year 2014.

f) Rain Gauge Network

This city-wide system is operated and maintained by the Flow Control Unit. There are 35 gauges which routinely transmit data to the computer system at Fox Street. Rain gauge information is used to estimate CSO discharge volume for PaDEP reports, modeling sewer hydraulics, and analyzing storm sewer capacity. The gauges are routinely serviced and calibrated annually.

4. Collector System Support

The primary function of the Collector System Unit is to provide technical expertise to the operating units through engineering evaluations and studies. The unit investigates complex drainage and flooding problems, and also conducts hydraulic analysis of the collector system through field surveys and computer aided calculations. In addition, the Collector System Support Unit is also responsible for the management of maintenance contracts for collector system equipment. The unit has 12 positions and 1 vacancy.

The legacy data management systems previously used by various units to manage complaints and maintenance activities have been integrated into Cityworks® or will be integrated into MAXIMO®. The Inlet Cleaning Operating Information System (“ICOIS”) and the Sewer Maintenance Operating

Information System ("SMOIS") have been migrated to Cityworks®. The remote pump stations information system ("PUMA") will be replaced by MAXIMO® in the future.

Some noteworthy capital projects related to the Collection System are listed below:

- The Venice Island Storage Tank project consisted of the construction of a three million gallon tank to capture flow to prevent sanitary sewer overflows during extreme wet weather events. Construction was completed in May 2013. The facility was fully operational on November 5, 2013.
- The Frankford High-Level Sewer project will rehabilitate the currently unused second barrel to the Northeast WPCP. This project is a key element in the overall expansion plan for the Northeast WPCP. The notice to proceed was issued on July 29, 2013.
- Under the COA the Water Department committed to lining 14.5 miles of streamside interceptors within the Cobbs and Tacony-Frankford watersheds to address erosion and improve stream quality and aesthetics during dry weather.
    - Cobbs Creek - Parts 1 and 2 and Phase 1: construction complete.
    - Cobbs Creek - Phases 2, 3 and 4: in Projects Control.
    - Tacony Creek - Phase 1: construction complete.
    - Tacony Creek - Phase 2: under construction.
    - Tacony Creek - Phases 3, 4 and 5:in design
- The Water Department has initiated a multi-phase flood relief project in the Northern Liberties section of the City to address chronic flooding problems.
    - Northern Liberties - phase 1: construction complete
    - Northern Liberties - phases 2, 3 and 4: construction begun in February 2014
    - Northern Liberties - phases 5 and 6: in Design

M. TOXICS REDUCTIONS AND CONTROL

Under the National Pollutant Discharge Elimination System, the Water Department is required to regulate industrial waste discharged to the wastewater collection system. The primary function of the Water Department's IWU is to ensure compliance with federal industrial pretreatment standards. The unit handles a wide variety of additional assignments including:

- Monitoring wastewater characteristics from townships
- Determining industrial surcharges
- Investigating spill incidents
- Managing the Water Department's hazardous chemical storage tanks compliance program
- Overseeing the sewer rental factor program
- Administering the Water Department's hazardous waste removal contracts
- Pretreatment support required for the Water Department's CSO program efforts

- Stormwater sampling services as part of the illicit connection program
- Assisting PaDEP to control storm quality from industrial activities - pertains to storm flows from industrial sites discharged to the municipal separate sewer system
- Administering the Water Department's polychlorinated biphenyl pollutant minimization plan ("PCB PMP")
- Issuing septage permits
- Overseeing the groundwater discharge program (groundwater contaminated with petroleum products)
- Supervising the manhole pump out program (permits are issued to utilities to ensure pump out water is not directed to storm sewers and is not contaminated)

There are 18 positions budgeted for the unit and 1 vacancy.

The Water Department's Pretreatment Program dates from 1980. It is an EPA approved program that has grown in scope. A formal permitting system is in place that addresses federal requirements and the impacts of each industrial discharge. SIUs are subject to local limits, which take into account their potential for adversely impacting the performance, compliance, and sludge disposal options of the Water Department's treatment plants. Significant industries are distinguished from categorical industries, the latter which are federally-identified industries in specific categories such as metal finishing and electroplating, which are subject to published federal categorical pretreatment standards. Local limits have been updated as required by the NPDES permit and incorporated into the Water Department's regulations. EPA reviewed and approved the local limits, but has required a more stringent limit with respect to sampling performed by SIUs. If an SIU now misses a single sampling event as required by its permit, it is considered a significant non-compliance ("SNC") event per the Water Department's regulations. Previously, SIUs could miss a small number of sampling events before it became a SNC event. This change is substantial and the Water Department has seen a reduction in the compliance rate for SIUs that they believe is attributable to this requirement. The Water Department has issued approximately 134 final discharge permits to all categorical and significant users. The identification of SIUs is an ongoing process. Permitted industries, through their self-monitoring and reporting obligations, provide the bulk of data used by the Industrial Waste Unit to ascertain compliance with effluent standards. The Industrial Waste Unit samples and inspects each permitted user at least once annually. For fiscal year 2014, the compliance rate was 86.5 percent. This is considered low compared to previous years. In fiscal year 2010, 91 percent of the categorical and significant users were in compliance. The Water Department attributes this decrease to the more stringent sampling limits discussed previously.

IWU's pretreatment program is computerized and includes the ability to review industrial directories to identify candidate SIUs, assess the compliance status of SIUs, and generate compliance letters and public notices of violation. The Water Department provides PaDEP with an annual report on this program per its NPDES permit.

The IWU also oversees the assessment of the surcharge for wastewater that exceeds 250 mg/l BOD or 350 mg/l TSS in strength. In fiscal year 2014, 815 samples were collected by the Industrial Waste Unit for the surcharge billing of 69 industrial customers. Surcharge revenues for the past seven years are presented in Table IV-8. Surcharge revenues for fiscal year 2015 are projected to be approximately 6.3 million dollars.

Table IV-8 Surcharge Revenues

FISCAL YEAR	SURCHARGE
2006	$4,241,421
2007	$4,521,705
2008	$4,263,678
2009	$5,798,891
2010	$4,903,436
2011	$4,933,127
2012	$5,175,891
2013	$6,028200
2014	$5,394,328

The IWU is also responsible for permitting septage haulers that discharge wastewater at the Southwest WPCP. Only sanitary waste is accepted and all loads are sampled prior to discharge. Chemical haulers are prohibited from discharging into the sewer collection system.

The IWU also receives and processes applications for sewer rental factors (“SRF”). The SRF provides customers with a credit for metered water that is not discharged to the wastewater system. An example of this is a manufacturing customer that incurs water loss during its processes or where the final product includes water. Currently there are approximately 401 SRF accounts. This represents an increase as compared to the 178 SRF accounts active in 2010. The increase is attributed to better communications with the Water Revenue Bureau (“WRB”), including more frequent meetings and the implementation of Basis2©. Applications are received, reviewed, modified, and approved by the IWU. IWU continue to review SRF accounts to determine whether the historical conditions that resulted in the permit are still aligned with current operating conditions. This review is ongoing as the Water Department continues to request information from customers. They have adopted a policy to revoke credits if no response is received after several requests for information are made.

The IWU’s responsibilities also include administration of a PCB PMP. The plan was created to address the concerns of the DRBC and meet the requirements of the Delaware River PCB TMDL. It is designed to identify sources of PCBs that could potentially enter the Water Department’s wastewater or stormwater systems. Activities under this plan include monitoring the sewer system to determine the source of PCB discharges, and assessing City parcel sites that are potential PCB sources with the goal of minimizing or eliminating PCB discharges to the wastewater or stormwater systems. Approximately 500 sites were surveyed in the last six years, and some have been identified for follow-up as they need more information or have concerns. A five-year PMP report was be submitted to PaDEP and DRBC as required. The report documented activities through the end of the NPDES permit cycle. Follow-up activities continue as the Water Department awaits the issuance of the new NPDES permit and associated PMP requirements.

The IWU also samples the separate storm sewer outfalls as part of the Water Department's defective lateral detection and abatement program. There are approximately 430 stormwater outfalls and in fiscal year 2011 approximately 157 outfalls were sampled for fecal coliform bacteria during dry weather flows. If fecal coliform is detected, a group from the Sewer Maintenance Unit attempts to locate the illicit source.

One of the most significant challenges for the IWU is responding to accidental spill incidents and dealing with the unauthorized dumping of hazardous materials into the sewer system. IWU is currently working with Operations Administration to incorporate their spill incident response dataset with Cityworks®. In fiscal year 2011, the IWU responded to approximately 182 spill incidents where it assisted with preventing the spill from entering the sewer system or mitigating the impact of any spill on the Water Department's operations. While it is impossible to prevent the unauthorized discharge of hazardous materials into the sewer system, IWU staff believes that a more concerted effort of public education may help to reduce the amount of unauthorized dumping. To this end IWU recently started distributing a periodic newsletter, "Pre-treatment Times" to their permittees. The newsletter provides regulatory updates and tips. It also lists recipients of IWUs 100 percent compliance award, a small incentive program which recognizes permittees for their diligence and commitment to compliance.

N. CONCLUSIONS

The findings discussed in sections B through M of this chapter provide the basis for our overall conclusion on the condition of the Wastewater System. The general physical condition of the major facilities of the Wastewater System has been evaluated using the following three ratings:

- *Good:* The facility is in condition to provide reliable operation in accordance with design parameters and requires only routine maintenance or minor improvements.
- *Adequate:* The facility is operating at or near design levels, however, non-routine renovation, upgrading, and repairs are needed to ensure continued reliable operation.
- *Poor:* The facility is not being operated within design parameters. Major renovations are required to restore the facility and assure reliable operation. Major expenditures for these improvements may be required.

Based on onsite physical inspections and investigations of major system facilities, conducted in November and December 2014, combined with discussions with key Water Department staff at that time and subsequently in February 2015, it is our opinion that the major facilities of the Wastewater System is in good operating condition or adequate steps are being taken to return them to good operating condition. The approved capital improvement budget for fiscal year 2015 and the proposed six-year capital program for fiscal years 2016 through 2021 should provide adequate funds to sustain the systems in good operating condition.

V. Capital Improvement Program

A. OVERVIEW

The City of Philadelphia has for many years used a formal capital programming and budgeting process in which the Water Department participates, along with all other elements of City government. Under this process, capital programs are projected forward over a six-year period and a detailed budget is adopted for the first year of the period. Both program and budget commitments are reviewed each year and modified as necessary.

The Water Department projects included in the six-year program proposed for fiscal years 2016 through 2021 involve total expenditures of $1.784 billion at projected fiscal year 2016 cost levels. These capital expenditures will be used to pay for the Water Department's design, construction, and administrative personnel who work on the capital programs, and for improvements related to the water, wastewater, and stormwater systems.

Beginning in the mid-1970s, the Capital Improvement Program ("CIP") concentrated heavily on the upgrade and expansion of the Water Department's three wastewater treatment plants, and the BRC. In recent years, the Water Department has refocused its energies to the areas of potable water treatment, distribution and collection system rehabilitation, implementation of the previous LTCP, and storm flood relief. Emphasis has also been placed on addressing the issues and complying with the requirements of the rules associated with the Safe Drinking Water Act Amendments, including the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. The CIP is managed under the Project Controls section of the Engineering and Construction Division. In the coming years, the focus will be on implementing the Green City, Clean Waters ("GCCW") program, including installation of green infrastructure; collector system improvements; water pollution control plant expansions; along with targeted major infrastructure improvements in the water distribution system and storage facilities.

B. FISCAL YEARS 2016 – 2021 CAPITAL IMPROVEMENT PROGRAM

The Water Department has initiated a comprehensive review and update of its six-year CIP for fiscal years 2016 through 2021. The total proposed FY 2016 to FY 2021 capital budget of $1.784 billion reflects a 1.0 percent increase over the FY 2015 to FY 2020 capital budget of $1.767 billion. The increase in budgeted capital improvements is projected to be manageable within the current staffing and organizational structure utilized by the Water Department. In Table V-1 key capital programming areas are summarized. In the sections that follow a brief discussion of each is presented.

Table V-1 Capital Improvement Program (Fiscal Years 2016-2021)

Engineering and Administration[1]	$199,988,000
Improvements to Treatment Plants	$659,292,000
Improvements to Conveyance System	$294,360,000
Improvements to Collector System	$183,960,000
Storm Flood Relief/CSO	$406,100,000
Vehicles	$40,000,000
Total	**$1,783,700,000**

Note:
1. Engineering and Administration costs include an allowance for inflation.

1. Engineering and Administration

This program provides for the funding of all Engineering and Administrative personnel within the Water Department who are involved with the CIP. Fringe benefits are included in the cost projection.

2. Improvements to Treatment Plants

Upcoming improvements to water and wastewater treatment facilities, pumping stations, and finished water reservoirs are included in this category. This category also includes capacity expansions to the wastewater treatment facilities as contemplated in the Consent Order and Agreement ("COA") and associated Long Term Control Plan Update ("LTCPU"). The various improvement projects and rehabilitation/replacement projects are identified in the Water Department's planning documents. Several of the projects which are included have been identified in other chapters of this Report.

3. Improvements to the Conveyance System

This category encompasses the replacement of existing water mains throughout the City. It is an ongoing project that replaces aged mains to reduce the likelihood of water main breaks. The preventive nature of this program puts the Water Department in a proactive rather than reactive posture for addressing main replacements. The Water Department currently has a goal of replacing approximately 22 miles of water mains (0.8 percent of all distribution mains) each year. Starting in fiscal year 2016, the Water Department is increasing its goal to 28 miles of mains (1 percent of all distribution mains).

4. Improvements to the Collector System

The Collector System replacement program is an ongoing project and involves the replacement of old and worn out sewers, as well as the construction of new sanitary sewers to serve new or previously un-sewered developments with the objective of relieving existing unsanitary conditions. The benefits of this program include improved hydraulics by eliminating old lines with blockages, and reductions in the likelihood of street collapse. It is also preventive in nature, and generates the same type of benefits as its counterpart in water conveyance. Lastly, this category covers the conversion of old septic tank systems to public sewers, particularly in the northwestern sections of the City.

5. Storm Flood Relief/Combined Sewer Overflow ("CSO")

These projects, which are ongoing, entail the construction of new storm flood relief sewers or storage tanks in flood-prone areas, stream restoration, as well as projects related to the recently signed COA and associated LTCPU. The projects that are part of the LTCPU are aimed at reducing the amount of pollution that enters Philadelphia's rivers and streams that is equivalent to the capture of 85 percent of the CSOs under annual average conditions. These projects will consist of green infrastructure, e.g., converting impervious cover into green management areas that absorb and filter stormwater runoff, and traditional upgrades to combined sewer interceptors. The benefits of these projects include controlling excessive erosion, managing the watersheds by capturing and infiltrating or conveying stormwater, reducing combined sewer overflows, reducing unplanned sewer maintenance activity, and minimizing citizen complaints related to chronic flooding. The COA and LTCPU are specifically aimed at protecting the overall water environment in the Philadelphia area and fulfilling the Water Department's obligations under the Clean Water Act and the Pennsylvania Clean Streams Act.

6. Vehicles

Included in this line item are expenditures for the purchase of replacement vehicles utilized by the various units throughout the Water Department's operations. This excludes maintenance of vehicles, which is covered under a separate contract with Fleet Management and charged to expenses.

VI. Financial Requirements

A. OVERVIEW

Black & Veatch evaluated the adequacy of revenues to meet projected revenue requirements for fiscal years 2015 through 2021. Revenue projections for retail service customers are based on the schedules of rates for water and wastewater service, which were effective beginning July 1, 2014. In December 2012, the Water Commissioner rendered a rate decision based on the rate hearing process adopting three years of rate increases for fiscal year 2013 (effective January 1, 2013) through fiscal year 2015 (effective July 1, 2014). Based upon the rate hearings, the Commissioner's decision provided an overall revenue increase of approximately 4.48 percent that was placed into effect on January 1, 2013; an overall revenue increase of approximately 4.48 percent that was placed into effect on July 1, 2013; and an overall revenue increase of approximately 4.48 percent that was placed into effect on July 1, 2014.

Beyond fiscal year 2015, additional annual operating revenue increases are projected to be necessary to meet the Water Department's projected expenses and to comply with the rate covenants of the General Ordinance. A projected statement of revenues and expenses for the seven-year study period covering fiscal years 2015 through 2021 ("Study Period") is presented in Table VI-8 which provides an indication of the adequacy of revenues and the feasibility of issuing the Bonds and future indicated revenue bond issues consistent with the requirements of the General Ordinance.

The financial data used in the analyses presented herein was obtained from the Water Department's historical audited financial statements through fiscal year 2014, the approved operating and capital budgets for fiscal year 2015, and the proposed operating and capital budgets for fiscal year 2016.

The Water Department operates on a modified accrual basis of accounting. Revenues are recorded upon receipt, except revenues from other governments which are accrued as billed, and interest which is accrued as earned. Expenditures are recorded as expenses on an encumbrance basis, except debt service and lease payments which are recorded when paid.

B. EXISTING RATES AND RATE METHODOLOGY

In March 2012, City Council introduced Ordinance #12770 and Resolution #12808 requiring a ballot referendum for the November 2012 ballot regarding the amendment of the Charter allowing City Council to establish an independent ratemaking body responsible for fixing and regulating rates and charges for water and sewer services; and establish open and transparent processes and procedures for fixing and regulating said rates and charges. This Ordinance was enacted and the Resolution was adopted in June 2012. The referendum question was included on the November 2012 ballot for voter consideration. The amendment of the Charter was approved by referendum and City Council was authorized to adopt an ordinance to implement a new ratemaking agency.

On April 4, 2013, the City Council introduced Ordinance #130251 (the "Rate Ordinance") which proposed the establishment of a five member board (the "Board") to oversee the water, sewer and stormwater rate process. Council passed the Rate Ordinance at the December 12, 2013 session and became effective as of January 20, 2014. The Rate Ordinance established the following rate standards to be utilized by the Board in the establishment of future rates as follows:

- Rates and charges shall be fixed to provide a minimum of 100 percent of funding for operating expenses, other City fund charges and debt service from current revenues with reasonable sums to cover unforeseeable or unusual expenses, reasonably anticipated cost increases or diminutions in expected revenue;
- Rates and charges may be fixed to stabilize customer costs over a reasonable number of years and include anticipated changes in operating and capital costs, including personnel cost changes and other cost inflation;
- In fixing rates and charges the Board shall recognize the importance of financial stability to customers, consider the Water Department's Financial Stability Plan and evaluate the impact of the Board-approved rates and charges on planned improvements, operating expenses, debt service coverage, financial reserves, credit ratings and future rates and charges;
- In determining the level of current funding of capital expenditures and minimum levels of reserves, the Board shall consider all relevant information presented including, but not limited to, peer utility practices, best management practices and projected impacts on customer rates;
- Rates and charges shall be developed in accordance with sound utility rate making practices and consistent with the current industry standards for water, wastewater and storm water rates. Industry standards include the current versions of: AWWA Principles of Rates, Fees and Charges Manual (“Ml”) and WEF's Wastewater Financing & Charges for Wastewater Systems; and
- Whenever the Water Department has proposed changes to the rates and charges, the Board shall issue a written report incorporating the information used by the Board in reaching a decision to approve, modify or reject the proposed rates and charges. The Board shall approve the proposed rates and charges unless the Board finds that the Water Department has proposed rates and charges that are inequitable or have not been reasonably supported by the information provided to the Board by all participants in the rate setting process. If the Board has rejected or modified the proposed rates and charges, the Board's report shall identify the impacts of the approved rates and charges on planned improvements, operating expenses, debt service coverage requirements, reserve fund levels and future rates and charges. The Board’s decision must be made no later than 120 days from the Water Department’s filing proposed changes. If the Board is unable to act on the proposed rates and charges within that time frame, the Water Department may establish emergency rates and charges on a temporary basis pending a final determination by the Board.

The Rate Ordinance requires the preparation of a Water Department Financial Stability Plan ("Financial Stability Plan") which shall forecast capital and operating costs and expenses and corresponding revenue requirements. The Financial Stability Plan would also be required to identify the strengths and challenges to the Water Department's overall financial status, including the Water Fund's credit ratings, planned and actual debt service coverage, capital and operating reserves, condition of assets and utility service benchmarks and to compare the Water Department to similar agencies in peer cities in the United States. The Financial Stability Plan is required to be submitted to the City Council every four years, and updated prior to proposing revisions in rates and charges.

On February 5, 2015 City Council confirmed the Mayor's appointments for the five members of the Board. The Rate Ordinance requires the Board to establish open and transparent processes and procedures for public comment on proposed rates and charges and must promulgate regulations for rate hearings and determination of rates and charges consistent with the City Code. Until such regulations are adopted, the Board must follow existing Water Department regulations regarding rate setting. The City and the Water Department continue to develop processes and procedures to comply with the requirements of the Rate Ordinance.

The Water Department retained Black & Veatch in February 2015 to assist in the development of cost of service based rates for the period of fiscal years 2017 through 2020. Rates for wholesale water and wastewater service became effective July 1, 2014. The water and wastewater rates applicable to retail customers, including residential, commercial, industrial, charities and schools, the Philadelphia Housing Authority, and municipal service which became effective July 1, 2014 are based on the results of the 2012 rate hearing process related to retail service.

The schedules of retail rates shown in Table VI-1 are those that were in effect as of July 1, 2014. The rates in effect as of July 1, 2014 are the basis for the "base" level of revenue projections used in this Report.

In addition to the existing General Service rates presented in Table VI-1, special reduced rates (currently 75 percent of the General Service rates) are applicable to certain properties or customer groups such as charitable institutions, schools, and eligible senior citizens as prescribed by ordinance. Reduced rates are also applicable to the Philadelphia Housing Authority equal to 95 percent of the General Service rates. Charges are also established for municipal fire protection and private fire protection and for dischargers of high strength wastewater service.

Service to customers located outside the City is on a wholesale basis through contracts with various municipalities, authorities, and townships. The present bases of charges to the wholesale customers are set out in respective contracts for service to each customer. There are currently 10 wholesale wastewater customers and one wholesale water customer. The existing rates for the wholesale customers are based upon the cost of service study which Black & Veatch prepared for the Water Department in conjunction with the development of the retail rates which were the subject of the 2012 rate hearings discussed previously. The existing rates for wholesale customers became effective July 1, 2014. For purposes of revenue projections from wholesale customers beyond fiscal year 2015, the overall revenue increases shown on Lines 4 through 9 in Table VI-8 of this Report are assumed to equally apply to both wholesale and retail customers.

Table VI-1 General Service Water and Wastewater Rates

METER BASED MONTHLY SERVICE CHARGES

Water: Meter Size	Water: Existing Effective July 1, 2014	Wastewater: Meter Size	Wastewater: Existing Effective July 1, 2014
Inches	$	Inches	$
5/8	6.46	5/8	6.55
3/4	7.49	3/4	8.04
1	9.98	1	11.39
1-1/2	15.56	1-1/2	19.24
2	23.05	2	29.31
3	39.64	3	52.07
4	69.00	4	89.15
6	133.60	6	174.77
8	208.47	8	275.38
10	302.43	10	398.07
12	530.00	12	715.77

QUANTITY CHARGES

Water

Monthly Water Usage	Units	Existing Effective July 1, 2014
First 2 Mcf	$/Mcf	39.05
Next 98 Mcf	$/Mcf	31.54
Next 1900 Mcf	$/Mcf	28.95
Over 2000 Mcf	$/Mcf	21.98

Wastewater

Description	Units	Existing Effective July 1, 2014
All Billable Water Usage	$/Mcf	28.07
BOD in excess of 250 mg/l	$/lb	0.350
SS in excess of 350 mg/l	$/lb	0.332

RESIDENTIAL STORMWATER

Description	Existing Effective July 1, 2014
	$
Charge Per Parcel	12.46
Billing & Collection	1.69

NON RESIDENTIAL STORMWATER

Description	Units	Existing Effective July 1, 2014
Gross Area	$/500 sf	0.59
Impervious Area	$/500 sf	4.75
Billing & Collection	$	2.19

Notes:

The stormwater charges for Non residential and condominium parcels are same

sf - square feet

Mcf - Thousand cubic feet

mg/l - miligrams per liter

BOD - Biochemical Oxygen Demand

SS - Suspended Solids

C. PROJECTED REVENUES UNDER EXISTING RATES

Projected operating and non-operating revenues of the Water Department are shown in Table VI-2 for fiscal years 2015 through 2021 under rate schedules for water and wastewater service for General Service customers and Contract Service customers that became effective July 1, 2014. Operating revenues of the Water Department consist of several components, which are projected separately for the water and wastewater utilities.

Operating revenues for the water and wastewater utilities include charges for water and wastewater service to several customer classes. Wastewater service revenues include revenues for both sanitary sewer and stormwater services. The General Customer group, shown on Lines 1, 9 and 13 of Table VI-2, consists of residential, commercial, industrial, public utility accounts, senior citizens, charitable institutions, schools, and the Philadelphia Housing Authority. Projected water and wastewater gross billings have been developed by applying the existing schedules of rates to normalized projections of water sales, number of customers, number of billable parcels, and billable gross and impervious area for respective classes based upon an analysis of historical trends. The projection of customer accounts reflects no growth in the total system accounts. The projection of water sales reflects an annual decrease of approximately 1.0 percent, which is primarily due the annual reduction in the sales per account associated with 5/8" meter General Customers. The decrease in the use per customer for smaller accounts has been a trend which has been fairly consistent over the past several years. The projection of billable gross and impervious area reflects the average annual decrease of 4.6 million square feet per year as an allowance for additional stormwater credits issued by the Water Department during the projection period. Revenues under existing rate levels from General Customers, which are comprised of the above mentioned accounts, reflect an adjustment to the projections of gross billings to anticipated cash receipts based on an analysis of historical annual billings and receipts.

Table VI-2 Projected Revenue Under Rates Effective July 1, 2014
(in thousands of dollars)

Line No.	Description	Fiscal Year Ending June 30, 2015	2016	2017	2018	2019	2020	2021
	Operating Revenue							
	Water Operations							
1	Metered Sales to General Customers	229,318	228,981	227,297	225,318	223,328	221,338	220,694
2	Municipal Service	7,976	7,987	7,987	7,987	7,987	7,987	7,987
3	Private Fire Protection	2,258	2,258	2,258	2,258	2,258	2,258	2,258
4	Public Fire Protection	8,162	8,162	8,162	8,162	8,162	8,162	8,162
5	Contract Service	3,762	3,762	3,762	3,762	3,762	3,762	3,762
6	Subtotal Water Service Revenue	251,475	251,150	249,467	247,487	245,498	243,507	242,863
7	Other Operating Revenue	11,065	11,045	11,992	10,736	18,384	10,686	10,649
8	Total Water Operations	262,540	262,195	261,459	258,223	263,882	254,194	253,512
	Wastewater Operations							
9	Metered Sales to General Customers	189,937	190,734	189,666	188,139	186,601	185,063	184,557
10	Municipal Service	10,575	10,603	10,603	10,603	10,603	10,603	10,603
11	Contract Service	32,973	34,653	34,653	34,653	34,653	34,653	34,653
12	Excess Strength Service Charge	6,344	6,344	6,344	6,344	6,344	6,344	6,344
13	Stormwater	151,433	152,357	152,254	151,731	151,180	150,624	150,067
14	Subtotal Wastewater Service Revenue	391,261	394,690	393,519	391,470	389,381	387,286	386,223
15	Other Operating Revenue	14,165	14,146	15,857	13,816	26,255	13,743	13,545
16	Total Wastewater Operations	405,426	408,836	409,376	405,286	415,635	401,029	399,768
17	Total Operating Revenue	667,966	671,031	670,835	663,509	679,517	655,222	653,280
	Nonoperating Income							
18	Interest Income - Capital Funds (a)	1,158	1,049	724	753	751	770	809
19	Interest Income - Operating Funds (b)	1,093	1,001	978	908	997	1,011	982
20	Total Nonoperating Income	2,251	2,050	1,702	1,662	1,748	1,781	1,790
21	**Total Water Department Revenue**	**670,217**	**673,081**	**672,537**	**665,171**	**681,265**	**657,003**	**655,070**

(a) Includes interest income on the Construction Fund and Debt Service Reserve Account. Excludes deposit into Residual Fund for Transfer to City General Fund. Up to $4,994,000 annually in interest income on the Debt Service Reserve Account is transferred to the City General Fund.
(b) Includes interest income on Revenue and Rate Stabilization Funds.

Revenues from Municipal Service, shown on Lines 2 and 10 of Table VI-2, are derived solely from water and wastewater service to various municipal entities within the City of Philadelphia and the provision of system facilities for public fire protection, shown on Line 4 of Table VI-2. The City of Philadelphia is the largest customer of the Water Department. The fiscal year 2015 revenues under existing rates from the City are expected to amount to approximately $26,716,000. This includes $8,162,000 in public fire protection charges. Existing schedules of charges also include a charge for private fire protection connections to the water system, the revenue from which is shown on Line 3 of Table VI-2.

Contract water service, Line 5 of Table VI-2, consists of water sales to Aqua Pennsylvania (formerly the Philadelphia Suburban Water Company) on a wholesale basis.

In March 2014, Bucks County notified the Water Department that it would cease purchases of water on July 1, 2014. Projected sales volumes and revenues reflect the cessation of water sales to Bucks County.

The charges to Aqua Pennsylvania, which commenced taking service from Philadelphia in fiscal year 2002, include a commodity charge applicable to metered water usage for the recovery of power and chemical costs, and a fixed charge to recover all other allocable operation and maintenance expenses and capital related costs. The contract with Aqua Pennsylvania is for up to 9.5 mgd of maximum day capacity and covers a term of 25 years, ending in 2026.

Other operating revenue from the water operations shown on Line 7 of Table VI-2 consists largely of penalties on overdue bills for retail water service customers, miscellaneous other revenue, and a proportionate share of transfers from the Debt Reserve Account in fiscal years 2017 and 2019.

Wholesale wastewater service is provided to 10 suburban customers on a contractual basis with multi-year terms. Three wholesale customers make capital contributions to the Water Department for their allocated share of investment in treatment and collection system facilities used in providing wastewater service to the particular customer. Contract rates for wastewater service are applied on a monthly basis and generally consist of charges for operation and maintenance expense, certain capital costs associated with the collection and treatment facilities used in providing the service, and a management fee. The Water Department actively manages the wholesale service agreements to recover the costs associated with the wholesale service. Recent wholesale contract negotiation efforts include the following existing wholesale customers:

- ***Delaware County Regional Water Quality Control Authority ("DELCORA").*** A 15-year contract was executed on April 1, 2013 as the previous contract expired in fiscal year 2013. The contract maintained the management fee at 12 percent, maintained the contractual flow limits at current levels, extended the current exceedance charges for any exceedances in flows or pollutant loadings, and provides for the recovery of a portion of the Water Department's Long Term Control Plan Update ("LTCPU") costs.

- ***Cheltenham Township.*** Discussions regarding a new agreement are underway as of the date of the Report and will require that Cheltenham pay depreciation and return on investment on all new capital facilities serving them, including a proportional share of the Water Department's LTCPU expenditures. The Water Department and Cheltenham Township are each evaluating the current flow and loadings parameters for this agreement and will likely modify the contractual limits for this contract once the analysis is completed. Expanded capacity for Cheltenham Township will also likely result in certain improvements to the Water Department's collection system which will be recovered from Cheltenham.

- ***Springfield Township.*** The Water Department and Springfield Township executed a new 10-year agreement on February 24, 2014. The new agreement requires that Springfield pay depreciation and return on investment on all new capital facilities serving them, including their proportional share of the Water Department's LTCPU expenditures. Additionally, the contract provides for a management fee of 12 percent of the wastewater treatment charges. The Water Department and Springfield Township are each evaluating the current flow and loadings parameters for this agreement and will likely modify the contractual limits for this contract once the analysis is completed.

- ***Abington Township.*** The Water Department negotiated a new 10-year agreement with Abington Township effective October 9, 2014. This agreement requires that Abington pay depreciation and return on investment on all new capital facilities serving them, including their proportional share of the Water Department's LTCPU expenditures. The contract also includes a management fee of 12 percent of wastewater treatment charges.

- ***Lower Moreland Township.*** The Water Department is actively negotiating a new wastewater services contract with Lower Moreland Township. The proposed agreement will provide modest increases to the Township's annual average daily flow limits, as well as the loadings limits. The proposed agreement provides a 10-year term including a 12 percent management fee on wastewater treatment charges. A significant reduction in peak flows limits will be implemented. Notably, the contract provides that Lower Moreland pay its proportional share of the Water Department's LTCPU costs. Negotiations on this contract are expected to be concluded by the end of fiscal year 2015.

Projected revenue under existing rates from wholesale wastewater customers is shown on Line 11 of Table VI-2. Projected revenues reflect the current contract capacities for Cheltenham, Springfield, and Lower Moreland Townships. The projected revenues for fiscal years 2016 to 2021 include $1.6 million of additional revenue to reflect the anticipated increased revenue associated with DECLORA's, Springfield's, and Abington's share of the Water Department's LTCPU costs.

Retail customers which contribute high strength wastewater are presently assessed an extra strength surcharge based upon monitored strength. Revenue from these customers is shown on Line 12 of Table VI-2.

Other operating revenues for the wastewater utility, shown on Line 15 of Table VI-2, include penalties on overdue bills, a proportionate share of transfers from the Debt Reserve Account in fiscal years 2017 and 2019, and income from permits and licenses, and other miscellaneous sources.

Non-operating revenue of the Water Department consists of interest and other income. Interest income recognizes the requirements set forth in the General Ordinance which provides for the transfer of all interest earnings from investment of the Construction Fund, the Rate Stabilization Fund, and the Debt Reserve Account to the Revenue Fund, in addition to the interest income earned on the Revenue Fund itself. Projections of interest income for the Study Period are based on the projected average balances in these funds and are considered to be available to meet the Water Department's revenue requirements throughout the Study Period. An interest rate of 0.4 percent has been assumed in estimating interest income on the various operating funds and accounts, the Construction Fund, and the Debt Reserve Account. Total non-operating interest income available to the Revenue Fund is shown on Line 20 of Table VI-2.

D. CAPITAL IMPROVEMENTS FINANCING

Table VI-3 summarizes the Water Department's Capital Improvement Program ("CIP") for fiscal years 2015 through 2021 on an encumbrance basis, that is, the total cost of each project is shown in the year that design of the project is scheduled to commence.

Table VI-3 Capital Improvement Program
(in thousands of dollars)

Line No.	Description	Fiscal Year Ending June 30, 2015	2016	2017	2018	2019	2020	2021
	WATERWORKS IMPROVEMENTS							
1	Engineering and Administration (a)	12,251	13,859	13,863	13,867	13,871	14,434	11,850
2	Water Treatment Plant Improvements	55,000	48,353	48,351	48,349	48,347	48,345	48,343
3	Distribution System Rehabilitation	36,060	49,060	49,060	49,060	49,060	49,060	49,060
	Large Meter Replacement							
4	Vehicles	1,000	5,000	3,000	3,000	3,000	3,000	3,000
	Other	0	0	0	0	0	0	0
5	Subtotal	104,311	116,272	114,274	114,276	114,278	114,839	112,253
	WASTEWATER COLLECTION AND TREATMENT							
6	Engineering and Administration	14,382	16,269	16,274	16,278	16,283	15,729	18,321
7	Water Pollution Control Plant Improvements	70,000	61,540	61,538	61,536	61,533	61,530	61,527
8	Storm Flood Relief	40,000	54,300	66,300	71,300	71,300	71,300	71,600
9	Reconstruction of Old Sewers	30,660	30,660	30,660	30,660	30,660	30,660	30,660
10	Vehicles	1,000	5,000	3,000	3,000	3,000	3,000	3,000
11	Subtotal	156,042	167,769	177,772	182,774	182,776	182,219	185,109
12	Total Improvements (Line 5 + Line 11)	260,353	284,041	292,046	297,050	297,054	297,058	297,361
13	Inflation Adjustment (b)	0	0	11,682	24,239	37,091	50,458	64,424
14	**Inflated Total**	**260,353**	**284,041**	**303,727**	**321,290**	**334,145**	**347,516**	**361,786**

(a) Excludes allowance for inflation, which is included on Line 13.
(b) Cost estimates for fiscal years 2016 to 2021 are in terms of fiscal year 2016 cost levels. Allowance for inflation of 4.0 percent.

Costs shown in Table VI-3 reflect the estimated total costs of the various projects, a portion of which will be financed from Capital Account Deposits, transfers from the Residual Fund, and other non-bond sources such as assessments. Projected fiscal years 2017 through 2021 costs for the CIP are stated at estimated fiscal year 2016 cost levels based on the Water Department's proposed fiscal year 2016 capital budget. An annual inflation allowance of 4 percent has been recognized on Line 13 of Table VI-3 beginning with fiscal year 2017.

Table VI-4 shows the total projected capital improvement costs, a net cash flow adjustment, and the annual net cash financing requirements associated with the CIP. The cash flow adjustment indicated in Table VI-4 represents the net result of carrying forward costs which are encumbered in one year, but which do not become a cash expenditure until a subsequent year. Estimated Engineering and Administration costs are anticipated to be incurred fully during the fiscal year in which the costs are budgeted. It is anticipated that the Water Department will be able to accomplish the processing of a higher level of annual capital expenditures compared to historical levels through the Study Period in order to meet the projected timeline for the objectives set forth in its Long Term Control Plan Update.

Table VI-4 Annual Cash Capital Improvement Financing Requirement
(in thousands of dollars)

Fiscal Year Ending June 30	Total Capital Improvements	Net Cash Flow Adjustment	Net Cash Financing Required
2015	260,353	(58,653)	201,700
2016	284,041	(32,041)	252,000
2017	303,727	2,273	306,000
2018	321,290	2,711	324,001
2019	334,145	(4,145)	330,001
2020	347,516	(47,515)	300,001
2021	361,786	(36,179)	325,607

Net cash financing requirements indicated in Table VI-4 are assumed to be primarily met from future revenue bond issues, Pennvest loans, Capital Account Deposits, and transfers to the Construction Fund from the Residual Fund. Projected revenue bonds are assumed to be issued to finance a major portion of the Water Department's share of costs as the encumbrances mature into actual cash payments to contractors. The annual net cash financing required for capital improvements through fiscal year 2021 is expected to be met by the outstanding proceeds from the Water and Wastewater Revenue Bonds Series 2014A and the issuance of additional revenue bonds and Pennvest loans, including $300,000,000 from the proposed Water and Wastewater Revenue Bonds, Series 2015A Bonds; $7,527,000 from the Pennvest Loans anticipated to be received over the period covering fiscal year 2015 to the first half of fiscal year 2017; $270,000,000 of revenue bonds anticipated to be issued in the first half of fiscal year 2017; $275,000,000 of revenue bonds anticipated to be issued in the first half of fiscal year 2018; $280,000,000 of revenue bonds anticipated to be issued in the first half of fiscal year 2019; $270,000,000 of revenue bonds anticipated to be issued in the first half of fiscal year 2020; and $285,000,000 of revenue bonds anticipated to be issued in the first half of fiscal year 2021.

Table VI-5 presents an estimate of the flow of funds in the Construction Fund of the Water Department for fiscal years 2015 through 2021. Line 1 of the table shows the total amount of the proposed revenue bond issues that are to be used to finance a portion of the Water Department's CIP. Lines 2 through 4 show the disposition of the proceeds of these revenue bond issues. Lines 6 through 18 of Table VI-5 show the estimated receipts and disposition of funds in the Construction Fund and the Debt Reserve Account. Line 8 of Table VI-5 shows the projected proceeds from the anticipated $7.527million of Pennvest Loan proceeds. Line 9 of Table VI-5 shows the annual Capital Account Deposit into the Construction Fund. The amount of this deposit is projected to be equal to 1 percent of the net plant investment in water and wastewater facilities. Lines 10 and 16 of Table VI-5 show transfers from the Residual Fund into the Construction Fund and Debt Reserve Account, respectively. For purposes of this Report, we have shown the Residual Fund balances to be used as an additional source of cash financing of the Water Department's CIP. Line 17 of Table IV-5 shows transfers from the Debt Reserve Account to the Revenue Fund. The General Ordinance requires that the Debt Reserve Account fund balance be maintained at a level equal to the maximum annual debt service on senior debt. Based on the projection of debt service on outstanding and proposed senior debt, it is anticipated that approximately $3.3 million and $20.1 million will be transferred from the Debt Reserve Account to the Revenue Fund in fiscal years 2017 and 2019, respectively.

Lines 19 and 20 of Table VI-5 show the estimated interest earnings from the investment of the Construction Fund and the Debt Reserve Account based on respective average annual balances. As previously indicated, an interest earnings rate of 0.4 percent has been assumed for the Debt Reserve Account and the Construction Fund. These interest earnings are considered as nonoperating income and are transferred to the Revenue Fund except as described below, and are used to meet annual revenue requirements of the Water Department under the General Ordinance. An amount not to exceed the lower of $4,994,000 or annual interest earnings on the Debt Reserve Account is transferred to the Residual Fund to provide the annual payment to the City General Fund, in accordance with the General Ordinance.

Table VI-5 Projected Flow of Funds - Construction Fund
(in thousands of dollars)

Line No.	Description	Fiscal Year Ending June 30, 2015	2016	2017	2018	2019	2020	2021
	Disposition of Bond Proceeds							
1	Proceeds From Sale of Bonds	300,000	0	270,000	275,000	280,000	270,000	285,000
	Transfers:							
2	Debt Reserve Account (a)	15,000	0	0	7,219	0	17,071	9,805
3	Cost of Bond Issuance (b)	4,500	0	4,050	4,125	4,200	4,050	4,275
4	Construction Fund (c)	280,500	0	265,950	263,656	275,800	248,879	270,920
5	**Total Issue**	**300,000**	**0**	**270,000**	**275,000**	**280,000**	**270,000**	**285,000**
	Construction Fund							
6	Beginning Balance	252,135	391,103	191,418	210,568	207,912	209,258	218,254
7	Transfer From Bond Proceeds	280,500	0	265,950	263,656	275,800	248,879	270,920
8	PENNVEST Loan Proceeds	371	0	7,155	0	0	0	0
9	Capital Account Deposit	20,697	21,215	21,745	22,289	22,846	23,417	24,003
10	Transfer from Residual Account	39,100	31,100	30,300	35,400	32,700	36,700	43,500
11	Total Available	592,803	443,418	516,568	531,913	539,259	518,255	556,677
12	Net Cash Financing Required	(201,700)	(252,000)	(306,000)	(324,001)	(330,001)	(300,001)	(325,607)
13	**Ending Balance**	**391,103**	**191,418**	**210,568**	**207,912**	**209,258**	**218,254**	**231,070**
	Debt Service Reserve							
14	Beginning Balance	228,236	243,236	243,236	240,000	247,219	227,071	244,142
15	Transfer From Bond Proceeds	15,000	0	0	7,219	0	17,071	9,805
16	Transfer From Residual Fund	0	0	0	0	0	0	0
17	Transfer to Revenue Fund	0	0	(3,236)	0	(20,148)	0	0
18	**Ending Balance**	**243,236**	**243,236**	**240,000**	**247,219**	**227,071**	**244,142**	**253,946**
	Interest Income							
19	Construction Fund (d)	1,158	1,049	724	753	751	770	809
20	Debt Reserve Account (e)	849	876	870	877	854	848	897
21	**Total Interest Income**	**2,006**	**1,924**	**1,593**	**1,630**	**1,605**	**1,618**	**1,705**

(a) Amount of Debt Service Reserve Account deposit estimated based on maximum annual future debt service payment.

(b) Cost of bonds issuance assumed at 1.5 percent of issue amount.

(c) Deposits equal proceeds from sale of bonds less transfers to the Debt Reserve Account and Costs of Issuance.

(d) Interest income is transferred to the Revenue Fund.

(e) Interest income is transferred to the Residual Fund in the lesser amount of $4,994,000 or actual interest earned.

E. PROJECTED REVENUE REQUIREMENTS

The annual revenue requirements of the Water Department consist of operating expenses for existing and proposed water and wastewater system facilities, including interdepartmental charges for services provided to the Water Department by other departments of the City, debt service on all obligations issued by the Water Department, projected Capital Account Deposits, and a payment to the City General Fund. In addition, revenues must be adequate to meet applicable rate covenants, as set forth in the General Ordinance.

1. Operating Expenses

Operating expenses, including interdepartmental charges, consist of all costs of the Water Department necessary and appropriate for the operation, maintenance, and administration of the water and wastewater systems during each year. Projections of operating expenses for the water and wastewater utilities for the fiscal years 2015 through 2021 are shown in Table VI-6. Projections of operating expenses include expenses such as personal services, purchased services including power, materials and supplies, equipment, fringe benefits, and indemnities.

Table VI-6 Projected Operation and Maintenance Expense
(in thousands of dollars)

Line		Fiscal Year Ending June 30,						
No.	Description	2015	2016	2017	2018	2019	2020	2021
	Water Operations							
1	Personal Services	37,731	39,171	40,346	41,556	42,803	44,087	45,410
2	Purchase of Services	35,749	37,487	38,802	40,165	41,580	43,048	44,570
3	Materials and Supplies	27,565	26,739	28,094	29,524	31,031	32,622	34,299
4	Equipment	701	878	904	931	959	988	1,018
5	Contributions, Indemnities, Refunds and Taxes	2,936	2,843	2,929	3,017	3,107	3,200	3,296
6	Interdepartmental Charges	64,489	67,722	70,098	72,562	75,162	77,859	80,658
7	Subtotal Operating Expenses	169,170	174,840	181,173	187,755	194,643	201,804	209,251
8	Less: Liquidated Encumbrances	(13,480)	(10,000)	(10,656)	(11,036)	(11,432)	(11,843)	(12,271)
9	Operating Expenses - Water	155,690	164,840	170,517	176,719	183,211	189,961	196,980
	Wastewater Operations							
10	Personal Services	52,654	55,768	57,441	59,164	60,939	62,767	64,650
11	Purchase of Services	90,555	93,735	101,828	105,028	108,339	111,765	115,310
12	Materials and Supplies	14,162	14,111	14,637	15,185	15,756	16,350	16,970
13	Equipment	980	1,273	1,311	1,350	1,391	1,432	1,475
14	Contributions, Indemnities, Refunds and Taxes	5,219	5,055	7,007	8,863	5,524	5,689	5,860
15	Interdepartmental Charges	92,507	97,578	100,981	104,509	108,233	112,097	116,106
16	Subtotal Operating Expenses	256,076	267,519	283,204	294,099	300,181	310,101	320,372
17	Less: Liquidated Encumbrances	(20,220)	(15,000)	(15,984)	(16,555)	(17,148)	(17,765)	(18,407)
18	Operating Expenses - Wastewater	235,856	252,519	267,220	277,544	283,033	292,337	301,965
19	**Total Operating Expenses**	**391,547**	**417,359**	**437,737**	**454,263**	**466,244**	**482,297**	**498,945**

Direct operating expense projections shown in Table VI-6 include recognition of the potential impact of anticipated escalation in costs due to inflation during the Study Period. Fiscal years 2015 and 2016 expenses are based upon the Water Department's adopted and proposed budgeted expenditures for that year. An analysis of previous years' budgets and actual obligations by functional division and by budgetary object class within each division has been used to adjust the adopted and proposed budgeted expenditures for fiscal years 2015 and 2016 downward slightly to reflect recent actual obligation experience.

Labor costs are expected to increase 3.0 percent in fiscal years 2017 to 2021. Electric power costs are expected to increase 5.0 percent annually for fiscal years 2017 to 2021. Chemical costs are expected to increase 6.0 percent annually for fiscal years 2017 to 2021. All other purchased services, materials and supplies, and equipment expenditures are projected to increase at 3.0 percent annually in fiscal years 2017 to 2021.

Interdepartmental charges for service provided to the Water Department by other City departments and agencies anticipated through the Study Period are also included in Table VI-6. These charges represent the Water Department's proportionate charge for services provided directly by other City departments and agencies, including the Water Revenue Bureau ("WRB"), which has responsibility for the collection of revenue for water and wastewater service provided by the Water Department. Accomplishment of this responsibility requires reading of meters, maintenance of customer accounts, billing, collection of payments, enforcements of payments, and customer relations. The Water Department's pension and fringe benefit costs are included as an interdepartmental expense. Projections of interdepartmental expenses are also based on the adopted and proposed budgets for fiscal years 2015 and 2016. Cost escalation factors used to project expenditures for the Study Period are the same as those used to project direct Water Department operating expenditures mentioned above. In addition, pension and fringe benefit costs are projected to increase 4.0 percent per year.

2. Debt Service Requirements

Projected debt service on outstanding revenue bonds is shown on Line 1 of Table VI-7 for the Study Period. The projection of debt service on outstanding revenue bonds reflects projected debt service schedules provided by the Water Department. The projected debt service payments on the outstanding variable rate bonds reflect the following assumptions based on discussions with and guidance from Water Department staff:

- Series 1997B. The projected interest cost is estimated based on an interest rate of 3.0 percent.
- Series 2005B. The projected interest cost for the Study Period reflects an overall average interest rate of 4.53 percent over the Study Period.

The Water Department's projected debt service on currently outstanding bonds decreases significantly in fiscal years 2017 to 2019 (decreasing from approximately $202.4 million in fiscal year 2016 to approximately $124.5 million per year in fiscal years 2020 and 2021), and it is assumed that the proposed bonds in fiscal years 2015 to 2018 will be structured to defer initial principal payments to level the projected debt service.

The analysis included herein assumes that the 2015 Bonds will be issued in March 2015 and the projected debt service assumes a 30-year amortization schedule and a 5.0 percent interest rate. Projected debt service on the subsequent proposed $270,000,000 in fiscal year 2017, $275,000,000 in fiscal year 2018, $280,000,000 in fiscal year 2019, and $270,000,000 in fiscal year 2020 assumes a 30-year amortization schedule and a 5.25 percent interest rate. Projected debt service on the proposed $285,000,000 in fiscal year 2021 assumes a 30 year amortization schedule and a 5.50 percent interest rate. The Series 2015A Bonds and the proposed bonds in fiscal years 2015 to fiscal year 2018 reflect interest only payments through fiscal year 2018. The potential debt service savings associated with the proposed refunding of portions of the outstanding Series 2005A Bonds and Series 2007A Bonds is not reflected in the projected debt service for the Study Period. Table VI-7 summarizes the total revenue bond debt service projected for the Study Period.

Line 11 of Table VI-7 shows the debt service payments on the outstanding Pennvest loans.

Table VI-7 Future Debt Service Requirements
(in thousands of dollars)

Line No.	Description	Fiscal Year Ending June 30, 2015	2016	2017	2018	2019	2020	2021
	Revenue Bonds							
1	Existing (a)	195,205	202,417	183,119	184,188	134,960	124,455	124,642
	Proposed							
2	Fiscal Year 2015 (b)	0	15,000	15,000	15,000	20,488	20,488	20,488
3	Fiscal Year 2016		0	0	0	0	0	0
4	Fiscal Year 2017 (c)			7,088	14,175	18,619	18,619	18,619
5	Fiscal Year 2018 (c)				7,219	18,671	18,671	18,671
6	Fiscal Year 2019 (d)					9,368	18,737	18,737
7	Fiscal Year 2020 (d)						9,034	18,068
8	Fiscal Year 2021 (e)							9,805
9	Total Proposed	0	15,000	22,088	36,394	67,146	85,548	104,386
10	Total Revenue Bonds	195,205	217,417	205,206	220,582	202,106	210,003	229,028
	Pennvest Loans							
11	Pennvest Parity Loans	12,343	12,343	12,343	12,908	13,120	13,074	13,074
12	Total Debt Service	207,548	229,760	217,549	233,491	215,227	223,077	242,102

(a) Assumes the average interest rates of 3.0 % for the Variable Rate Series 1997B Bonds and 4.53% for the Variable Rate Series 2005B Bonds.
(b) Assumes interest only payments through FY 2018 based on 5.00% interest. Assumed to be issued during the second half of the fiscal year.
(c) Assumes interest only payments through FY 2018 based on 5.25% interest. Assumed to be issued during the first half of the fiscal year.
(d) Assumes 5.25% interest rate. Assumed to be issued during the first half of the fiscal year.
(e) Assumes 5.50% interest rate. Assumed to be issued during the first half of the fiscal year.

3. Capital Account Deposit

The General Ordinance establishes a Capital Account as an account within the Construction Fund. The Water Department covenants to make deposits to the Capital Account in each fiscal year, subject to the availability of funds, in an amount not less than one percent of the total net plant investment in water and wastewater facilities. Such deposits will be required June 20 of each fiscal year to fund annual renewals, replacements, and improvements to maintain adequate water and wastewater service to the areas served by the system. The projected level of the annual Capital Account Deposit reflects the current level of net plant investment in water and wastewater facilities and the historical rate of growth in net plant investment value. The projected fiscal year 2015 requirement amounts to $20,697,000 and increases during the Study Period to $24,003,000 in fiscal year 2021.

4. City General Fund Deposit

Under the General Ordinance, annual payments to the City General Fund are required from the Residual Fund in an amount not to exceed the lower of $4,994,000 or annual interest earnings on the Debt Reserve Account. Applicable interest earnings are transferred to the Residual Fund to meet this obligation.

F. ADEQUACY OF PROJECTED REVENUES TO MEET PROJECTED REVENUE REQUIREMENTS UNDER GENERAL ORDINANCE REQUIREMENTS

Table VI-8 presents a statement of projected revenues and revenue and rate covenant requirements for water and wastewater operations for fiscal year 2015 through fiscal year 2021 under the stipulations of the General Ordinance. The table provides an indication of the adequacy of the Water Department's revenues and the feasibility of the issuance of the Bonds and future anticipated revenue bond sales during the Study Period.

Projections of annual operating revenue for water and wastewater service shown on Lines 1 and 2 of Table VI-8 include revenue from retail customers under the rate levels in effect as of July 1, 2014, as previously presented in Table VI-2. Lines 4 through 9 indicate additional service revenue required in each fiscal year to meet revenue requirements and rate covenant compliance during the Study Period.

As indicated by the positive year-end balances shown on Line 37 of Table VI-8, the adopted rates effective July 1, 2014 and proposed future revenue increases beyond fiscal year 2015 are projected to be adequate to satisfy the basic Charter requirement that the Water Department provide sufficient revenues to meet all operating expenses of the water and wastewater systems, debt service requirements on all obligations issued for the Water Department, and certain payments to the City General Fund, as well as other specific bond ordinance covenants.

In addition to meeting the requirements listed above, pursuant to the authorizing General Ordinance, the Water Department covenants that during any given fiscal year it will, at a minimum, impose, charge, and collect in each fiscal year such water and wastewater rents, rates, fees, and charges as shall yield net revenues which shall be equal to at least 1.20 times the debt service requirements for such fiscal year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds); provided that such water and wastewater rents, rates, fees, and charges shall yield net revenues which shall be at least equal to 1.00 times (i) the debt service requirements for such fiscal year (including debt service requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account during such fiscal year; (iii) the principal or redemption price of and interest on General Obligation Bonds payable during such fiscal year; (iv) debt service requirements on interim debt payable during such fiscal year; and (v) the Capital Account Deposit amount for such fiscal year (less any amounts transferred from the Residual Fund to the Capital Account during such fiscal year).

Table VI-8 Projected Revenue and Revenue Requirements
(in thousands of dollars)

Line No.	Description		2015	2016	2017	2018	2019	2020	2021
			Fiscal Year Ending June 30,						
	OPERATING REVENUE								
1	Water Service - Existing Rates		251,475	251,150	249,467	247,487	245,498	243,507	242,863
2	Wastewater Service - Existing Rates		391,261	394,690	393,519	391,470	389,381	387,286	386,223
3	Total Service Revenue - Existing Rates		642,736	645,841	642,986	638,957	634,878	630,793	629,086
	Additional Service Revenue Required								
	Year	Percent Increase							
4	FY 2016	0.00%		0	0	0	0	0	0
5	FY 2017	5.00%			32,149	31,948	31,744	31,540	31,454
6	FY 2018	4.80%				32,203	31,998	31,792	31,706
7	FY 2019	3.75%					26,198	26,030	25,959
8	FY 2020	4.00%						28,806	28,728
9	FY 2021	4.00%							29,877
10	Total Additional Service Revenue Required		0	0	32,149	64,151	89,940	118,167	147,725
11	Total Water & Wastewater Service Revenue		642,736	645,841	675,136	703,109	724,818	748,960	776,811
	Other Income (a)								
12	Other Operating Revenue		25,230	25,191	27,849	24,552	44,639	24,429	24,193
13	Construction Fund Interest Income		1,158	1,049	724	753	751	770	809
14	Debt Reserve Fund Interest Income		0	0	0	0	0	0	0
15	Operating Fund Interest Income		377	296	338	324	411	375	361
16	Rate Stabilization Interest Income		717	706	640	584	586	636	621
17	Total Revenues		670,217	673,081	704,687	729,322	771,205	775,170	802,795
	OPERATING EXPENSES								
18	Water & Wastewater Operations		(234,551)	(252,059)	(266,658)	(277,193)	(282,850)	(292,341)	(302,181)
19	Direct Interdepartmental Charges		(156,995)	(165,300)	(171,079)	(177,070)	(183,394)	(189,956)	(196,765)
20	Total Operating Expenses		(391,547)	(417,359)	(437,737)	(454,263)	(466,244)	(482,297)	(498,945)
	NET REVENUES								
21	Transfer From/(To) Rate Stabilization Fund		(23,300)	29,300	7,300	23,900	(25,000)	(2,800)	11,000
22	NET REVENUES (L 17 + L 20 + L 21)		255,371	285,022	274,250	298,959	279,961	290,073	314,850
	DEBT SERVICE								
	Senior Debt Service								
	Revenue Bonds								
23	Outstanding Bonds		(195,205)	(202,417)	(183,119)	(184,188)	(134,960)	(124,455)	(124,642)
24	Pennvest Parity Bonds		(12,343)	(12,343)	(12,343)	(12,908)	(13,120)	(13,074)	(13,074)
25	Commercial Paper								
26	Projected Future Bonds		0	(15,000)	(22,088)	(36,394)	(67,146)	(85,548)	(104,386)
27	Total Senior Debt Service		(207,548)	(229,760)	(217,549)	(233,491)	(215,227)	(223,077)	(242,102)
28	**TOTAL SENIOR DEBT SERVICE COVERAGE (L22/L27)**		1.23 x	1.24 x	1.26 x	1.28 x	1.30 x	1.30 x	1.30 x
	Subordinate Debt Service								
29	Outstanding General Obligation Bonds		0	0	0	0	0	0	0
30	Pennvest Subordinate Bonds		0	0	0	0	0	0	0
31	Total Subordinate Debt Service		0	0	0	0	0	0	0
32	Total Debt Service on Bonds		(207,548)	(229,760)	(217,549)	(233,491)	(215,227)	(223,077)	(242,102)
33	**CAPITAL ACCOUNT DEPOSIT**		(20,697)	(21,215)	(21,745)	(22,289)	(22,846)	(23,417)	(24,003)
34	TOTAL COVERAGE (L22/(L32+L33))		1.11 x	1.13 x	1.14 x	1.16 x	1.17 x	1.17 x	1.18 x

Line No.	Description	Fiscal Year Ending June 30, 2015	2016	2017	2018	2019	2020	2021
	RESIDUAL FUND							
35	Beginning of Year Balance	25,275	13,370	16,370	21,093	28,962	38,270	45,299
36	Interest Income	69	53	67	90	121	150	173
	Plus:							
37	End of Year Revenue Fund Balance	27,125	34,047	34,955	43,179	41,888	43,578	48,745
38	Deposit for Transfer to City General Fund (b)	849	876	870	877	854	848	897
	Less:							
39	Transfer to Construction Fund	(39,100)	(31,100)	(30,300)	(35,400)	(32,700)	(36,700)	(43,500)
40	Transfer to City General Fund	(849)	(876)	(870)	(877)	(854)	(848)	(897)
41	Transfer to Debt Service Reserve Fund	0	0	0	0	0	0	0
42	End of Year Balance	13,370	16,370	21,093	28,962	38,270	45,299	50,716

(a) Includes other operating and nonoperating income, including interest income on funds and accounts transferable to the Revenue Fund.

(b) Transfer of interest earnings from the Bond Reserve Account to the Residual Fund as shown in Line 38 to satisfy the requirements for the Transfer to the City General Fund.

In addition to the rate covenant of the General Ordinance described above, the City has agreed with AGM, for so long as the Series 2005A Bonds, the Series 2005B Bonds and the portion of the Series 2010A Bonds insured by AGM are outstanding, to establish rates and charges for use by the Water and Wastewater Systems sufficient to yield Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) at least equal to 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year. Further, any calculation by a consulting engineer of projected rate covenant compliance in connection with the proposed issuance of additional Bonds for each fiscal year must state that Net Revenues (excluding amounts transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such fiscal year) in each fiscal year included in the Study Period are projected to be at least 90 percent of the Debt Service Requirements (excluding debt service due on any Subordinated Bonds) in such fiscal year.

To comply with the General Ordinance covenants discussed above, as well as the requirements set forth in the City's agreement with AGM, additional water and wastewater service revenue, above the increase in rates which were in effect on July 1, 2014, was necessary during the Study Period, and such requirements are reflected in the revenue projections shown on Lines 4 through 9 of Table VI-8. As shown on Lines 28 and 34, the levels of additional service revenue projected for the Study Period are indicated to be adequate to provide for the debt service coverage and requirements of the AGM agreement as described above, and as mentioned previously the positive year-end balances shown on Line 37 indicate that Charter requirements are also projected to be satisfied. It is important to note that under the General Ordinance, which provides for the various rate covenants discussed above, the Water Department utilizes the Rate Stabilization Fund, along with necessary increases in revenue, to manage its debt service coverage on its senior lien Bonds to meet the required 1.20 level each year. As shown on Line 28 of Table VI-8, the senior debt service coverage is projected to increase from a 1.23 coverage to a 1.30 coverage during the Study Period. This reflects the Water Department’s intent to increase coverage to generate additional cash funded capital funds through the Residual Account.

Flow of funds in the Residual Fund (Lines 35-42) is presented in Table VI-8 for the Study Period through fiscal year 2021. As indicated on Line 42 of Table VI-8, the Residual Fund end of year fund balance is anticipated to increase from approximately $19.3 million in fiscal year 2015 to $56.8 million in fiscal year 2021. In accordance with the General Ordinance, funds in the Residual Fund may be used for the following purposes: (1) to pay operating expenses; (2) to fund transfers to any fund or account other than the Revenue Account and the Rate Stabilization Fund; (3) to pay principal and interest on any revenue bonds and general obligation debt; (4) for the payment of amounts due under capitalized leases or similar obligations; and (5) to fund required transfers to the City's General Fund. One of the most prudent uses of such funds is for capital program financing in future years. Accordingly, for purposes of this Report, we have indicated the annual transfers of available Residual Fund balances to the Construction Fund in the amounts shown on Line 39 and 41 of Table VI-8.

The flow of funds of the Rate Stabilization Fund is presented in Table VI-9 for the Study Period through fiscal year 2019. The current projections of fiscal year 2015 revenues and revenue requirements indicate that a $23,300,000 transfer to the Rate Stabilization Fund is anticipated. The balance of funds projected in the Rate Stabilization Fund at the end of fiscal year 2015 amounts to $210,733,000. The Water Department has indicated the need to maintain a combined balance in the Rate Stabilization and Residual Funds to provide for working capital needs. The updated projection of revenues for fiscal years 2016 to 2021 recognize the levels required to meet projected revenue requirements and debt service coverage covenants and to maintain the end of fiscal year 2021 Rate Stabilization Fund and Residual Fund cumulative balance to provide for adequate working capital and reserve needs. The projected fiscal years 2017 to 2021 additional service revenues are premised upon the authorization of the rate increases required for these additional revenues.

Table VI-9 Rate Stabilization Fund Flow of Funds
(in thousands of dollars)

Line		Fiscal Year Ending June 30,						
No.	Description	2015	2016	2017	2018	2019	2020	2021
	RATE STABILIZATION FUND							
1	Beginning of Year Balance	187,433	210,733	181,433	174,133	150,233	175,233	178,033
2	Deposit From/(To) Revenue Fund	23,300	(29,300)	(7,300)	(23,900)	25,000	2,800	(11,000)
3	End of Year Balance	210,733	181,433	174,133	150,233	175,233	178,033	167,033

In conclusion, based upon the assumptions recognized in this Report regarding the estimated future annual financial operations of the Water and Wastewater Systems, it is our opinion that the Water and Wastewater Systems will yield pledged Project Revenues (including projected revenue increases indicated in this Report) over the amortization period of the Bonds sufficient to meet the payment or deposit requirements of: all expenses of operation, maintenance, repair and replacement of the Water and Wastewater Systems; all reserve funds required to be established out of such Project Revenues; the principal or redemption price and interest on all Bonds, as the same become due and payable, for which such Project Revenues are pledged; and, the Rate Covenant set forth in Section 5.01 of the General Ordinance. In addition, the Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient (including projected revenue increases indicated in this Report) to comply with the Rate Covenant for each of the two fiscal years following the fiscal year in which the Bonds are issued.

APPENDIX III

SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS

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APPENDIX III

SUMMARIES OF CERTAIN AUTHORIZATIONS FOR THE BONDS

The following are summaries of certain provisions of The First Class City Revenue Bond Act (the "Act"), the Restated General Water and Wastewater Revenue Bond Ordinance of 1989, as amended and supplemented (the "General Ordinance"), the Fourteenth Supplemental Ordinance to the General Ordinance (the "Fourteenth Supplemental Ordinance"), the Fifteenth Supplemental Ordinance to the General Ordinance (the "Fifteenth Supplemental Ordinance"), the Sixteenth Supplemental Ordinance to the General Ordinance (the "Sixteenth Supplemental Ordinance"), and the Seventeenth Supplemental Ordinance to the General Ordinance (the "Seventeenth Supplemental Ordinance"). The summaries are not, and should not be regarded as, complete statements of the provisions of these documents and legislation. Reference is made to the Act, the General Ordinance, the Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance, copies of which are available from the Office of the Director of Finance, 1300 Municipal Services Building, 1401 J. F. Kennedy Boulevard, Philadelphia, Pennsylvania 19102, for the complete terms and provisions thereof.

THE FIRST CLASS CITY REVENUE BOND ACT (Act 234 of the General Assembly of the Commonwealth, approved October 18, 1972, P.L. 955; 53 P.S. §§ 15901-15924)

The City of Philadelphia Water and Wastewater Revenue Bonds, Series 2015A (the "Series 2015A Bonds") and the City of Philadelphia Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "Series 2015B Bonds") are being issued under the terms of the Act, the General Ordinance and pursuant to the Fourteenth Supplemental Ordinance, Fifteenth Supplemental Ordinance, Sixteenth Supplemental Ordinance and Seventeenth Supplemental Ordinance. The following summarizes the terms of the Act. All capitalized terms used in the following summary of the Act are defined as in the Act and may be differently referenced in other portions of this Official Statement.

General Authorization; Definition of Project; Bonds to be Special Obligations

The Act is intended to provide a comprehensive authorization to the City of Philadelphia (the "City") and any other Pennsylvania cities of the first class to issue revenue bonds ("Bonds") to finance various types of projects.

The Act defines "Project" to include, among other things, any building, structure, facilities or improvements of a public nature, the related land, rights or leasehold estates in land and the related furnishings, machinery, apparatus or equipment of a capital nature, which the City is authorized to own, construct, acquire, improve, lease, operate, maintain or support; any item of construction, acquisition or extraordinary maintenance or repair thereof, the City's share of the cost of any of the foregoing or any combination thereof undertaken jointly with others; and any combination of any of or all of the foregoing or any undivided portion of the cost of any of the foregoing as may be designated as a "Project" by the City for financing purposes and in respect of which the City may reasonably be expected to receive Project Revenues.

Bonds issued under the Act are required to be payable solely from Project Revenues and to be secured solely by such revenues and by any reserve funds which may be created or funded in connection with the Bonds. The Bonds are not permitted to pledge the credit or taxing power of the City to create any debt or charge against the tax or general revenues of the City, or create any lien against any of the City property other than the Project Revenues pledged therefore and reserve Funds established in respect of the Bonds. The Bonds do not constitute a debt of the City, and are excluded from the calculation of the City's debt-incurring capacity under the Pennsylvania Constitution.

Estimates of Future Revenues

To establish that Project Revenues will be sufficient to amortize all Bonds outstanding, the Act requires a finding to be made in the ordinance authorizing the issuance of the Bonds that the pledged Project Revenues will be sufficient to pay any prior parity charges thereon and the principal of and interest on the Bonds. This finding is to be based on a report of the chief fiscal officer of the City filed with the City Council and supported by appropriate schedules and summaries. The report of the chief fiscal officer of the City may be based on a report of consulting engineers employed by the City to evaluate the project.

For the purpose of estimating future Project Revenues, the Act provides that only the following shall be included: (i) those rents, rates, tolls or charges to the general public which, under existing authorizations, will be reasonably collectible in such year under the schedule or rate of rents, rates or charges which are or will be in effect during such year in accordance with such ordinance, resolutions or rate schedule or which may be imposed by administrative action without further legislation; (ii) those bulk payments which may be imposed under subsisting legislation or which are provided under subsisting agreements or which are the subject of an expression of intent by the prospective obligor deemed reliable by the chief fiscal officer of the City; and (iii) those governmental subsidies or payments which, under subsisting legislation, are subject to reasonably precise calculation and, unless stated in such legislation or authorization to be of an annually or more frequently recurring nature, are payable in such year.

Detail of Bonds and City Covenants

The Act provides that the ordinance authorizing the issuance of the Bonds shall fix the aggregate amounts of the Bonds to be issued from time to time and determine, or designate officers of the City to determine, the form and details of the Bonds. The City may include in its Bond ordinance various covenants with Bondholders, including covenants governing the imposition, collection and disbursement of Project Revenues, Project operation and maintenance, the establishment, segregation, maintenance, custody, investment and disbursement of sinking funds and reserves, the issuance of additional priority or parity bonds, the redemption of the Bonds and such other provisions as the City deems necessary or desirable in the interest or for the protection of the City or of such Bondholders. Under the Act the covenants, terms and provisions of the Bond ordinance made for the benefit of Bondholders constitute contractual obligations of the City, but such covenants (within limitations, if any, fixed by the Bond ordinance) may be modified by agreement with a majority in interest of the Bondholders or such larger portion thereof as may by provided in the Bond ordinance.

Sinking Fund

The Act requires that the Bond ordinance shall provide for the establishment of a sinking fund for the payment of the principal of and interest (including Qualified Swap payments) on the Bonds. Payment into such sinking fund shall be made in annual or more frequent installments and shall be sufficient to pay or accumulate for payment all principal of and interest on the Bonds for which the sinking fund is established as and when the same shall become due and payable. The sinking fund shall be managed by the chief fiscal officer of the City and moneys therein to the extent not currently required, shall be invested, subject to limitations established by the Bond ordinance and the Act. Interest and profits from investment of moneys in the sinking fund shall be added to such fund and may be applied in reduction of or to complete required deposits into the sinking fund. Excess moneys in the sinking fund shall be repaid to the City for its general purposes or may be applied as may be provided in the Bond ordinance. All moneys deposited in the sinking fund are subjected to a perfected security interest for the benefit of the holders of the Bonds, for which the fund is established, until property disbursed. This perfected security interest also applies, under the terms of the Act, to moneys in the sinking fund reserve created as part of the sinking fund by the General Ordinance.

Refunding

Any outstanding Bonds issued under the Act or other bonds issued for purposes for which Bonds are issuable under the Act, whether issued before or after the effective date of the Act, may from time to time be refunded by Bonds issued under the Act and are subject to the same protections and provisions required for the issuance of an original issue of Bonds. The last stated maturity date of the refunding Bonds may not be later than ten years after the last stated maturity date of the Bonds to be refunded. If outstanding Bonds are refunded in advance of their maturity or redemption date, the principal thereof and interest thereon to payment or redemption date, and redemption premium payable, if any, will no longer be deemed to be outstanding obligations when the City shall have deposited with a bank, bank and trust company or trust company, funds irrevocably pledged to the purpose, which are represented by demand deposits, interest-bearing time accounts, savings deposits, certificates of deposit (insured or secured as public funds) or specified obligations of the United States or of the Commonwealth of Pennsylvania sufficient to effect such redemption or payment or, if interest on the deposited funds to the time of disbursement is also pledged, sufficient, together with such interest, for such purpose and, in the case of redemption, shall have duly called the Bonds for redemption or given irrevocable instructions to give notice of such call.

Validity of Proceedings; Suits and Limitations Thereon

Prior to the delivery of any Bonds, the City is required to file with the Court of Common Pleas of Philadelphia County (the "Court") a transcript of the proceedings authorizing the issuance of the Bonds. If no action is brought on or before the twentieth day following the date of recording of the transcript, or when the proceedings have been approved finally by the Court, then notwithstanding any defect or error in such proceedings, the validity of the proceedings, the City's right to issue the Bonds, the lawful nature of the purpose for which the Bonds are issued, and the validity and enforceability of the Bonds in accordance with their terms may not thereafter be inquired into judicially, in equity, at law, or by civil or criminal proceedings, or otherwise, either directly or collaterally except where a constitutional question is involved.

Negotiable Instruments

The Act provides that Bonds issued thereunder shall have the qualities and incidents of securities under Article 8 of the Uniform Commercial Code of the Commonwealth and shall be negotiable instruments.

Exemption from State Taxation

The Commonwealth pledges with the holders from time to time of Bonds issued under the Act that such Bonds, and interest thereon, shall at all times be free from taxation within and by the Commonwealth, but this exemption does not extend to underwriting profits or to gift, succession or inheritance taxes or any other taxes not levied directly on the Bonds and the receipt of interest thereon.

Defaults and Remedies

If the City should fail to pay the principal of or interest on any Bond when the same shall be due and payable, the remedy provisions of the Act permit the holder of such Bond, subject to the limitations described below, to recover the amount due in an action in Philadelphia Common Pleas Court; but a judgment rendered in favor of the Bondholder in such an action is collectible only from Pledged Amounts. The holders of 25% or more in aggregate principal amount of the Bonds of such series then outstanding which are in default, whether because of failure of timely payment which is not cured in 30 days, or failure of the City to comply with any other provisions of the Bonds or any Bond ordinance, may appoint a trustee to represent them. On being appointed, the trustee shall be the exclusive representative for the affected Bondholders and the individual rights of action described above shall no longer be available. The trustee may, and upon written request of the holders of 25% or more in aggregate principal amount of Bonds in default, and on being furnished with indemnity satisfactory to it, shall, take one or more of the following actions, which, if taken, shall preclude similar action, whether previously or subsequently initiated, by individual holders of Bonds; enforce, by proceedings at law or in equity, all rights of the holders of the Bond; bring suit on the Bonds; bring in suit in equity to require the City to make an accounting for all pledged Project Revenues received and to enjoin unlawful action or action in violation of the holders' rights; and, after 30 days' written notice to the City, and subject to any limitations in the Bond ordinance, declare the unpaid principal of the Bonds to be immediately due and payable, together with interest thereon at the rates stated in the Bonds until final payment, and upon the curing of all defaults, to annul such declaration. In any suit, action or proceeding by or on behalf of holders of defaulted Bonds, trustee fees and expenses, including operating costs of a project and reasonable counsel fees, shall constitute taxable costs, and all such costs and expenses allowed by the Court shall be deemed additional principal due on the Bonds and shall be paid in full from any recovery prior to any distribution to the holders of the Bonds. The General Ordinance limits any such recovery to Pledged Amounts. The trustee shall make distribution of any sums so collected in accordance with the Act.

Refunding with General Obligation Bonds

Upon certification by the City's chief fiscal officer that Project Revenues pledged for the payment of Bonds have become insufficient to meet the requirements of the ordinance or ordinances under which the Bonds were issued, the City Council is empowered, but not required, subject to applicable Pennsylvania constitutional debt limitations, to authorize the issuance and sale of general obligation refunding bonds of the City, without limitation as to rate of interest and in such principal amount (subject to the aforesaid limitations on indebtedness) as may be required, together with other available funds, to pay and redeem such Bonds including principal, interest to the date fixed for redemption or payment and premium, whether or not the principal of or interest on the refunding bonds shall exceed the principal of or interest on the bonds to be refunded.

THE RESTATED GENERAL WATER AND WASTEWATER REVENUE BOND ORDINANCE OF 1989

(Ordinance of the City Council approved June 24, 1993 - Bill No. 544)

The following is a summary of certain terms defined in the Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (the "General Ordinance") used in this Official Statement. Reference should be made to the General Ordinance for a full and complete statement of its terms and any capitalized terms used herein but not otherwise defined. The Series 2015A Bonds and the Series 2015B Bonds are being issued under the terms of the General Ordinance, including the Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance. The Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance (see below) set forth the specific terms of the Series 2015A Bonds and the Series 2015B Bonds. The following summarizes the terms of the General Ordinance, prior to being supplemented pursuant to the Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance. All capitalized terms used in the following summary of the General Ordinance are defined as in the General Ordinance, prior to being supplemented pursuant to the Fourteenth Supplemental Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance, and may be differently referenced in other portions of this Official Statement.

Certain Definitions

Accredited Value means, with respect to Capital Appreciation Bonds, the amount to which, as of any specified time, the Original Value of any such Bond has been increased by accretion, all as may be provided in an applicable Supplemental Ordinance.

Act means The First Class City Revenue Bond Act, approved October 18, 1972 (Act No. 234, 53 P.S. §15901 to 15924), as from time to time amended.

Bond or *Bonds* means, upon and after issuance of the first series of bonds under the General Ordinance, if and to the extent Outstanding at any time, (i) the Existing Bonds and (ii) all series of bonds authorized and issued under one or more supplemental ordinances amending and supplementing the General Ordinance.

Bond Committee means the Mayor, City Controller and City Solicitor or a majority thereof.

Bond Counsel means a firm of nationally recognized bond counsel selected by the City.

Bondholder or *Holder* means any registered owner of Bonds or holder of Bonds issued in coupon form at the time Outstanding.

Capital Account means the Capital Account within the Construction Fund.

Capital Account Deposit Amount means an amount equal to one percent (1%) of the depreciated value of property, plant and equipment of the System or such greater amount as shall be annually certified to the City in writing by a Consulting Engineer as sufficient to make renewals, replacements and improvements in order to maintain adequate water and wastewater service to the areas served by the System.

Capital Appreciation Bonds means any Bonds issued under the General Ordinance which do not pay interest either until maturity or until a specified date prior to maturity, but whose Original Value increases periodically by accretion to a final Maturity Value.

Charges Account means the Charges Account established within the Sinking Fund to provide for the payment of fees under any Credit Facility to the extent payment of such fees are not otherwise provided.

City Controller means the head of the City's auditing department as provided by the Philadelphia Home Rule Charter.

City Solicitor means the head of the City's law department as provided by the Philadelphia Home Rule Charter.

Code means the Internal Revenue Code of 1986, as amended.

Construction Fund means the Construction Fund established pursuant to the General Ordinance.

Consulting Engineer means a nationally recognized Independent registered consulting engineer or a nationally recognized Independent firm of registered consulting engineers, in either case having experience in the design and analysis of the operation of water and wastewater systems of the magnitude and scope of the System.

Credit Facility means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that is provided by a commercial bank, insurance company or other institution, with a current long term rating (or whose obligations thereunder are guaranteed by a financial institution with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds which has no Credit Facility, to provide support for a Series of Bonds or for any issue of Subordinated Bonds, and shall include any Substitute Credit Facility.

Debt Reserve Account means the Debt Reserve Account of the Sinking Fund established in the General Ordinance.

Debt Reserve Requirement means with respect to all Bonds, an amount equal to the lesser of (i) the greatest amount of Debt Service Requirements payable in any one Fiscal Year (except that such Debt Service Requirement will be computed as if any Qualified Swap did not exist and the Debt Service Requirements attributable to any Variable Rate Bonds may be based upon the fixed rate of interest as set forth in the Supplemental Ordinance or Determination for such Bonds), determined as of any particular date or (ii) the maximum amount to be financed with proceeds of Bonds permitted by Section 148(d)(1) of the Code (or any successor provision).

Debt Service Account means the Debt Service Account of the Sinking Fund established in the General Ordinance.

Debt Service Requirements, with reference to a specified period, means:

(a) amounts required to be paid into any mandatory sinking fund established for the benefit of Bonds during the period;

(b) amounts needed to pay the principal or redemption price of Bonds maturing during the period and not to be redeemed at or prior to maturity through any sinking fund established for the benefit of Bonds;

(c) interest payable on Bonds during the period, with adjustment for capitalized interest or redemption through any sinking fund established for the benefit of Bonds; and

(d) all net amounts, if any, due and payable by the City under a Qualified Swap during such period.

For purposes of estimating Debt Service Requirements for any future period, (i) any Option Bond outstanding during such period shall be assumed to mature on the stated maturity date thereof, except that the principal amount of any Option Bond tendered for payment and cancellation before its stated maturity date shall be deemed to accrue on the date required for payment pursuant to such tender; and (ii) Debt Service Requirements on Bonds for which the City has entered into a Qualified Swap shall be calculated assuming that the interest rate on such Bonds shall equal the stated fixed or variable rate on the Qualified Swap or, if applicable and if greater than such stated rate, the applicable rate for any Bonds issued in connection with the Qualified Swap adjusted, in the case of a variable rate obligation, as provided in the General Ordinance.

Calculation of Debt Service Requirements with respect to Variable Rate Bonds shall be subject to adjustment.

Debt Service Withdrawal means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of principal or redemption price of or interest on Bonds or toward the elimination of a deficiency in any reserve fund established for the benefit of Bonds.

Determination means a determination by the Bond Committee regarding certain matters relating to the issuance of a Series of Bonds, made pursuant to the General Ordinance or the Supplemental Ordinance providing for the issuance of such Series of Bonds.

Director of Finance means the chief financial officer of the City as established by the Philadelphia Home Rule Charter.

Effective Date means when (but only when) all Prior Bonds issued under the Prior Ordinance have been paid or defeased as set forth in Section 10 of the Act.

Exchange Agreement means, to the extent from time to time permitted by applicable law, any interest exchange agreement, interest rate swap agreement, currency swap agreement or other contract or agreement, other than a Qualified Swap, authorized, recognized and approved by a Supplemental Ordinance or Determination as an Exchange Agreement and providing for (i) certain payments by the City from the Residual Fund and (ii) payments by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose obligations under an Exchange Agreement are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability are rated not less than "A3" by Moody's, "A-"by S&P or "A-" by Fitch, or the equivalent thereof by any successor thereto as of the date the Exchange Agreement is entered into; which payments by the City and counterparty are calculated by reference to fixed or variable rates and constituting a financial accommodation between the City and such counterparty.

Existing Bonds means the bonds originally issued under the Prior Ordinance other than Prior Bonds, which Existing Bonds shall be specified in a certificate of the Director of Finance on the Effective Date and thereafter shall be secured by the General Ordinance.

Financial Consultant means a firm of investment bankers, a financial consulting firm, a firm of certified public accountants or any other firm which is qualified to calculate amounts required to be rebated to the United States pursuant to Section 148(f) of the Code.

Fiscal Agent means a bank or other entity designated as such pursuant to the General Ordinance or its successor.

Fiscal Year means the fiscal year of the City.

Fitch means Fitch Ratings and any successor thereto.

General Obligation Bonds means the general obligation bonds of the City issued and outstanding from time to time to finance improvements to the System and adjudged, pursuant to the Constitution and laws of the Commonwealth of Pennsylvania, to be self-sustaining on the basis of expected Project Revenues.

General Ordinance means the Restated General Water and Wastewater Revenue Bond Ordinance of 1989.

Government Obligations means direct obligations of, or obligations the principal of and interest on which are unconditionally guaranteed by, the United States of America, including but not limited to interest obligations of the Resolution Funding Corporation or any successor thereto.

Independent means a person who is not a salaried employee or elected or appointed official of the City; provided, however, that the fact that such person is retained regularly by or transacts business with the City shall not make such person an employee within the meaning of this definition.

Initial Deposit means the initial, one time, deposit to be made by the City from any source into the Rate Stabilization Fund upon the establishment of such Rate Stabilization Fund.

Interdepartmental Charges means the proportionate charges for services performed for the Water Department by all officers, departments, boards or commissions of the City which are required by the Philadelphia Home Rule Charter to be included in the computation of operating expenses of the Water Department.

Interim Debt means any bond anticipation notes or other temporary borrowing which the City anticipates permanently financing with Bonds or other long term indebtedness under the General Ordinance or otherwise.

Maturity Value with respect to Capital Appreciation Bonds means the amount due on the maturity date.

Moody's means Moody's Investors Service and any successor thereto.

Net Revenues for any period means the Project Revenues collected during such period and deposited into the Revenue Fund plus (x) the amounts, if any, transferred from the Rate Stabilization Fund into the Revenue Fund during, or as of the end of, such period and (y) interest earnings during such period on moneys in any of the funds or accounts established under the General Ordinance to the extent such interest earnings are credited to the Revenue Fund pursuant to the General Ordinance minus the sum of (a) Operating Expenses incurred during such period and (b) the amounts, if any, transferred from the Revenue Fund to the Rate Stabilization Fund during, or as of the end of, such period; provided, however that in determining such Net Revenues the Initial Deposit shall not reduce such Net Revenues.

Operating Expense Withdrawal means the aggregate amount withdrawn from the Capital Account during a Fiscal Year and applied toward the payment of Operating Expenses.

Operating Expenses for any period means all costs and expenses of the Water Department necessary and appropriate to operate and maintain the System in good operating condition, and shall include, without limitation, salaries and wages, purchases of services by contract, costs of materials, supplies and expendable equipment, maintenance costs, costs of any property or the replacement thereof or for any work or project, related to the System, which is not properly chargeable to property, plant and equipment, pension and welfare plan and worker's compensation requirements, provisions for claims, refunds and uncollectible receivables and for Interdepartmental Charges, all in accordance with generally accepted accounting principles consistently applied, but Operating Expenses shall exclude depreciation, amortization, interest and sinking fund charges.

Option Bond means any Bond which by its terms may be tendered by and at the option of the Holder thereof for payment by the City prior to its stated maturity date or the maturity date of which may be extended by and at the option of the Holder thereof.

Ordinance means the General Ordinance, as amended from time to time in accordance with the provisions of the General Ordinance.

Original Value with respect to Capital Appreciation Bonds means the principal amount paid by the initial purchasers on the date of original issuance.

Outstanding, when used with reference to Bonds, means, as of any date, all Bonds theretofore or thereupon being authenticated and delivered under the General Ordinance except (i) any Bonds cancelled by the Fiscal Agent at or prior to such date; (ii) Bonds (or portion of Bonds) for the payment or redemption of which moneys, equal to the principal amount, Accredited Value or redemption price thereof, as the case may be, with interest (except to the extent of any Capital Appreciation Bonds) to the date of maturity or redemption date, shall be held in trust under the General Ordinance and set aside for such payment or redemption (whether at or prior to the maturity or redemption date), provided that if such Bonds (or portions of Bonds) are to be redeemed, notice of such redemption shall have been given as provided in the General Ordinance or provision satisfactory to the Fiscal Agent shall have been made for the giving of such notice; (iii) Bonds in lieu of or in substitution for which other Bonds shall have been authenticated and delivered pursuant to the General Ordinance; and (iv) Bonds deemed to have been paid as provided in the General Ordinance.

Philadelphia Home Rule Charter means the Philadelphia Home Rule Charter, as amended or superseded by any new home rule charter, adopted pursuant to authorization of the First Class City Home Rule Act approved April 21, 1949, P.L. 665 §l, *et seq*. (53 P.S. §13101, *et seq*.).

Prior Bonds means the bonds issued under the Prior Ordinance designated as Water and Sewer Revenue Bonds (i) the First Series through Ninth Series, and the Eleventh Series and Twelfth Series, and (ii) to the extent the following bonds are defeased on the Effective Date, the Tenth Series and the Thirteenth Series through Sixteenth Series.

Prior Ordinance means the General Water and Sewer Revenue Bond Ordinance of 1974 approved May 16, 1974, as amended and supplemented from time to time.

Project Revenues means all rents, rates, fees and charges imposed or charged for the connection to, or use or product of or services generated by the System to the ultimate users or customers thereof, all payments under bulk contracts with municipalities, governmental instrumentalities or other bulk users, all subsidies or payments payable by Federal, State or local governments or governmental agencies on account of the cost of operation of, or the payment of the principal of or interest on moneys borrowed to finance costs chargeable to the System, all grants, payments and contributions made in aid or on account of the System exclusive of grants and similar payments and contributions solely in aid of construction and all accounts, contract rights and general intangibles representing the foregoing.

Purchase and Remarketing Fund means, with respect to each Series of Bonds subject to tender for purchase pursuant to an applicable Supplemental Ordinance or Determination, the Fund so designated in such Supplemental Ordinance.

Qualified Escrow Securities means funds which are represented by (a) demand deposits, interest-bearing time accounts, savings deposits or certificates of deposit, but only to the extent such deposits or accounts are fully insured by the Federal Deposit Insurance Corporation or any successor United States governmental agency, or to the extent not insured, fully secured and collateralized by Government Obligations having a market value (exclusive of accrued interest) at all times at least equal to the principal amount of such deposits or accounts, (b) if at the time permitted under the Act, obligations of any state or political subdivision thereof or any agency or instrumentality of such state or political subdivision for which cash, Government Obligations or a combination thereof have been irrevocably pledged to or deposited in a segregated escrow account for the payment when due of principal or redemption price of and interest on such obligations, and any such cash or Government Obligations pledged and deposited are payable as to principal or interest in such amounts and on such dates as may be necessary without reinvestment to provide for the payment when due of the principal or redemption price of and interest on such obligations, and such obligations are rated by any Rating Agency in the highest rating category assigned by each such rating service to obligations of the same type, or (c) noncallable Government Obligations. In each case such funds (i) are subject to withdrawal, maturing or payable at the option of the holder, at or prior to the dates needed for disbursement, provided such deposits or accounts, whether deposited by the City or by such depository, are insured or secured as public deposits with securities having at all times a market value exclusive of accrued interest equal to the principal amount thereof, (ii) are irrevocably pledged for the payment of such obligations and (iii) are sufficient, together with the interest to disbursement date payable with respect thereto, if also pledged, to meet such obligations in full.

Qualified Rebate Fund Securities means either:

(a) Government Obligations; or

(b) rights to receive the principal of or the interest on Government Obligations through (i) direct ownership, as evidenced by physical possession of such Government Obligations or unmatured interest coupons or by registration as to ownership on the books of the issuer or its duly authorized paying agent or transfer agent, or (ii) purchase of certificates or other instruments evidencing an undivided ownership interest in payments of the principal of or interest on Government Obligations.

Qualified Swap or *Swap Agreement* means, with respect to a Series of Bonds, any financial arrangement that (i) is entered into by the City with an entity that is a Qualified Swap Provider at the time the arrangement is entered into; (ii) provides that (a) the City shall pay to such entity an amount based on the interest accruing at a fixed rate on an amount equal to the principal amount of the Outstanding Bonds of such Series, and that such entity shall pay to the City an amount based on the interest accruing on a principal amount initially equal to the same principal amount as such Bonds, at either a variable rate of interest or a fixed rate of interest computed according to a formula set forth in such arrangement (which need not be the same as the actual rate of interest borne by the Bonds) or that one shall pay to the other any net amount due under such arrangement or (b) the City shall pay to such entity an amount based on the interest accruing on the principal amount of the Outstanding Bonds of such Series at a variable rate of interest as set forth in the arrangement and that such entity shall pay to the City an amount based on interest accruing on a principal amount equal to the Outstanding Bonds of such Series at an agreed fixed rate (which shall not be the same as the rate on the Bonds) or that one shall pay to the other any net amount due under such arrangement; and (iii) which has been designated in writing to the Fiscal Agent by the City as a Qualified Swap with respect to the Bonds.

Qualified Swap Provider means, with respect to a Series of Bonds, an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, or whose payment obligations under a Qualified Swap are guaranteed by an entity whose senior long term debt obligations, other senior unsecured long term obligations or claims paying ability, are rated (at the time the subject Qualified Swap is entered into) at least as high as Aa by Moody's, and AA by S&P, or the equivalent thereof by any successor thereto.

Rate Covenant means the rate covenant contained in the General Ordinance.

Rate Stabilization Fund means the Rate Stabilization Fund established pursuant to the General Ordinance.

Rating Agency means Moody's, S&P or Fitch, to the extent that any of such rating services have issued a credit rating on the Bonds or, upon discontinuance of any of such rating services, such other nationally recognized rating service or services if any such rating service has issued a credit rating on the Bonds.

Rebate Bond Year, for purposes of the General Ordinance and in order to facilitate compliance with the arbitrage rebate requirements of the Code, shall mean the period or periods specified in a Supplemental Ordinance or Determination for a Series of Bonds.

Rebate Fund means the Rebate Fund established pursuant to the General Ordinance.

Remarketing Agent means a Remarketing Agent appointed in the manner provided in the applicable Supplemental Ordinance or Determination authorizing the issuance of Variable Rate Bonds.

Remarketing Agreement means an agreement providing for the remarketing of tendered Variable Rate Bonds by a Remarketing Agent, as more fully set forth and defined in the Supplemental Ordinance authorizing any Series of Variable Rate Bonds.

Residual Fund means the Residual Fund established pursuant to the General Ordinance.

Revenue Fund means the Revenue Fund established pursuant to the General Ordinance.

S&P means Standard & Poor's Ratings Services and any successor thereto.

Series when applied to Bonds means, collectively, all of the Bonds of a given issue authorized by Supplemental Ordinance, as provided in the General Ordinance, and may also mean, if appropriate, a subseries of any Series if, for any reason, the City should determine to divide any Series into one or more subseries of Bonds.

Sinking Fund means the Sinking Fund established pursuant to the General Ordinance.

Sinking Fund Installment means an amount so designated which is established pursuant to the General Ordinance.

Special Water Infrastructure Account means the Special Water Infrastructure Account of the Residual Fund established in the General Ordinance.

Standby Agreement with respect to a Series of Bonds, means an irrevocable letter of credit and related reimbursement agreement, line of credit, standby bond purchase agreement or similar agreement providing for the purchase of all or a portion of the Bonds of such Series, as amended, supplemented or extended from time to time.

Standby Purchaser, with respect to a Series of Bonds, means the provider of the Standby Agreement for such Series of Bonds.

Subordinated Bond means any Bond referred to in, and complying with the provisions of the General Ordinance with respect to Subordinated Bonds.

Subordinated Bond Fund means the Subordinated Bond Fund established in the General Ordinance.

Substitute Credit Facility means any letter of credit, standby bond purchase agreement, line of credit, surety bond, insurance policy or other insurance commitment or similar agreement (other than a Qualified Swap or an Exchange Agreement) that replaces a Credit Facility and is provided by a commercial bank, insurance company or other financial institution with a current long term credit rating (or whose obligations thereunder are guaranteed by a financial institution with a long term rating) from Moody's and S&P not lower than the credit rating of any Series of Bonds which has no Credit Facility.

Supplemental Ordinance means an ordinance supplemental to the General Ordinance enacted pursuant to the Act and the General Ordinance by the Council of the City.

System means the entire combined water system and wastewater system of the City, now existing and hereafter acquired by lease, direct control, purchase or otherwise or constructed by the City, including any interest or participation of the City in any facilities in connection with said System, together with all additions, betterments, extensions and improvements to said System or any part thereof hereafter constructed or acquired and together with all lands, easements, licenses and rights of way of the City and all other works, property or structures of the City and contract rights and other tangible and intangible assets of the City now or hereafter owned or used in connection with or related to said System.

Tender Agent, with respect to a Series of Bonds, means any commercial bank or trust company organized under the laws of any state of the United States or any national banking association designated as a tender agent for such Series of Bonds, and its successor or successors hereafter appointed in the manner provided in the applicable Supplemental Ordinance or Determination.

Uncertificated Bond means any Bond which is fully registered as to principal and interest and which is not represented by an instrument.

Variable Rate Bond means any Bond, the rate of interest on which is subject to change prior to maturity and cannot be determined in advance of such change.

Water and Wastewater Funds means, collectively, the Revenue Fund, the Sinking Fund, the Subordinated Bond Fund, the Rate Stabilization Fund, the Residual Fund and the Construction Fund.

Water Commissioner means the head of the Water Department as provided by the Philadelphia Home Rule Charter.

Water Department means the Water Department of the City created pursuant to Section 3-100 of the Philadelphia Home Rule Charter.

SUMMARY OF OPERATIVE PROVISIONS OF THE GENERAL ORDINANCE

The following is a summary of certain operative provisions of the General Ordinance. Reference should be made to the General Ordinance for a full and complete statement of its provisions and the meaning of any capitalized terms used herein but not otherwise defined.

Form and Terms of Bonds

All Bonds shall be in substantially such form as may be approved by the City and set forth in the Supplemental Ordinance or Determination providing for the issuance thereof. Bonds shall be generally designated as Water and Wastewater Revenue Bonds of the City and shall be issued in such Series and within such Series in such subseries as the City may from time to time determine. The aggregate principal amount of Bonds which may be issued, authenticated and delivered under the General Ordinance is unlimited, but prior to the issuance of such Series of Bonds, the City shall enact a Supplemental Ordinance authorizing such Series and the maximum aggregate principal amount of such Series.

The Bonds shall be issued in fully registered form, except as provided in the General Ordinance and, such Bonds shall be issued upon and contain such additional terms as may be set forth in the supplemental Ordinance and Determination providing for the issuance of the Bonds in question. As required by Section 5 of the Act, all Bonds shall contain a brief statement of the Project Revenues pledged as security therefor and the priority or priorities, if any, in the application of such pledged Project Revenues and shall contain a covenant of the City to pay from the pledged Project Revenues on the respective due dates the amounts required to pay the interest on and principal or redemption price of the Bonds. Bonds may be designated as of such Series by date, number, letter or otherwise and may also have such individual letters, identifying numbers or other marks, and such descriptive panels, registration panels, legends or endorsements placed thereon as may, consistent with the General Ordinance and the Act, be determined by a Supplemental Ordinance, Determination or the Director of Finance. The Bonds may also have printed thereon or on the reverse thereof the text of an approving legal opinion with respect thereto. Any portion of the text of any Bond may be set forth on the reverse thereof with an appropriate reference on the face of the Bond.

The Bonds of each Series shall be issued in such aggregate principal amount, shall be in such denominations, shall mature or be subject to mandatory redemption in such principal amounts, on such dates and at such places, shall have such Sinking Fund Installments for Bonds of like maturity and interest rate, shall bear interest from such date or dates and at such rate or rates (including variable, adjustable, convertible or other rates), shall be subject to optional redemption at such times and upon such terms, shall (if such Bonds are Option Bonds) be subject to optional or mandatory tender, and shall contain such other terms and conditions not inconsistent with the General Ordinance or the Act, all as shall be determined by the City and set forth in the Supplemental Ordinance or Determination under which such Bonds are issued, or as shall be determined by a designated officer or officers of the City thereunto authorized by the Supplemental Ordinance, or in the absence of such provisions or designation, as shall be determined by the Director of Finance as specified below.

If permitted by applicable law, any Series of Bonds may be issued as Uncertificated Bonds and the foregoing provisions specifying the form of Bonds shall be inapplicable to such Series.

A Series of Bonds may be secured by a Credit Facility meeting the requirements of the General Ordinance and the applicable Supplemental Ordinance. In connection with the issuance of its Bonds or at any time thereafter so long as a Series of Bonds remains Outstanding, the City also may enter into Qualified Swaps or Exchange Agreements if the Bond Committee determines that such Qualified Swap or Exchange Agreement will assist the City in more effectively managing its interest costs. The City's payment obligation under any Qualified Swap shall be made from the Sinking Fund and its payment obligation under any such Exchange Agreement shall be made from the Residual Fund created pursuant to the General Ordinance. Unless otherwise acknowledged by each Rating Agency by virtue of its confirmation of the existing credit ratings on the City's Outstanding Bonds, the City will not enter into any Qualified Swap or Exchange Agreement unless it gives at least fifteen (15) day's advance notice of its intention to do so to each of the Rating Agencies, which notice shall specify the identity of the Qualified Swap Provider or Exchange Agreement counterparty, as the case may be.

Sale of Bonds; Taxes Not to be Assumed; Authority of Director of Finance

Bonds may be sold by the City at public, private, or invited sale upon such terms not inconsistent with the Act and at such prices as the City may determine. To the extent that the Supplemental Ordinance authorizing any Series of Bonds and the Determination relating to such Series shall not otherwise provide:

(a) all Bonds shall be sold at competitive public sale to the purchaser or purchasers submitting the highest and best bid upon such terms and conditions of the bidding as shall be specified in an official notice of sale issued in the name of the City by the Director of Finance;

(b) no covenant to pay or assume any taxes shall be included in such Bonds; and

(c) subject to the foregoing, the terms upon which are the prices for which the Bonds are to be sold or exchange, and the form, terms or provisions of the Bonds including, without limitation, the matters referred to in Section 5 of the Act, shall be determined by the Director of Finance who is designated in the General Ordinance as the officer of the City authorized to make such determinations based, to the extent applicable, on the prices, interest rates or other terms set forth in the highest and best proposal conforming to the bidding specifications, as ascertained and accepted on behalf of the City by the Director of Finance.

Payments of Principal, Redemption Price and Interest; Date of Bonds

Unless otherwise provided in any Bond or the Supplemental Ordinance or Determination relating thereto:

(a) The principal or redemption price of each Bond shall be payable upon surrender thereof at the principal Philadelphia office of the Fiscal Agent in Philadelphia, Pennsylvania or at the principal office of a paying agent designated in such Bonds.

(b) The interest due on any Bond in fully registered form shall be payable by check or draft mailed to the Holder thereof, or at the request of a Holder of $1,000,000 or more in principal amount or maturity value of Bonds by wire transfer to an account at a financial institution in the United States, designated in writing to the Fiscal Agent or the paying agent, subject to such provisions concerning record dates as may be contained in such Bond and in the Supplemental Ordinance and Determination providing for the issuance and terms thereof.

(c) The principal or redemption price of and the interest on each Bond shall be payable in any coin or currency of the United States of America or Bonds of a Series may be payable in such foreign currency as may be specified in the Supplemental Ordinance authorizing such Series of Bonds, if applicable law permits.

(d) Fully registered Bonds of each Series shall be dated as of the date six months preceding the interest payment date next following the date of execution thereof by the Fiscal Agent, unless such date of execution shall be an interest payment date, in which case they shall be dated as of such date of execution; provided, however, that if, as shown by the records of the Fiscal Agent, interest on the Bonds of any Series shall be in default, fully registered Bonds of such Series issued in lieu of Bonds surrendered for transfer or exchange may be dated as of the date to which interest has been paid in full on the Bonds surrendered. Fully registered Bonds of each Series shall bear interest from their date.

Notwithstanding any other provision in The General Ordinance to the contrary, the foregoing provisions of this Section are subject to the express understanding that the principal of and interest on all Bonds issued hereunder and the premium, if any, payable on redemption thereof, shall be payable only from Project Revenues and other funds provided for the payment of Bonds. The Bonds are not general obligations of the City and do not pledge the general credit or taxing power or create any debt or charge against the general revenues of the City, or create any lien against any property of the City other than pledged Project Revenues.

Execution of Bonds

The Bonds shall be executed on behalf of the City by the Fiscal Agent by the manual signatures of two of its duly authorized officers or signers, under the seal of the City which shall be either affixed or reproduced thereon in facsimile and shall be countersigned and attested by the manual or facsimile signature of the City Controller, or in such other manner as shall be authorized by law and prescribed by Supplemental Ordinance. Any such Bonds may be executed, issued and delivered notwithstanding that one or more of the officers or signers signing such Bonds or whose facsimile signature shall be upon such Bonds shall have ceased to be such officers or signers at the time when such Bonds shall actually be delivered, and although at the nominal date of the Bond any such person shall not have been such officer or signer.

Bond Registrar and Bond Register

The City shall designate one or more persons to act as "Bond Registrar" for the Bonds provided that the Bond Registrar appointed for the Bonds shall be either the Fiscal Agent or a person which would meet the requirements for qualification as a Fiscal Agent imposed by the General Ordinance. Any person other than the Fiscal Agent undertaking to act as Bond Registrar shall first execute a written agreement, in form satisfactory to the City and the Fiscal Agent, to perform the duties of a Bond Registrar under the General Ordinance, which agreement shall be filed with the Fiscal Agent.

The Bond Registrar shall act as registrar and transfer agent for the Bonds. The City shall cause the Bond Registrar to designate, by a written notification to the Fiscal Agent, a specific office location at which the Bond Register is kept. The principal corporate trust office of the Fiscal Agent shall be such office in respect of the Bonds for which the Fiscal Agent is acting as Bond Registrar.

The Bond Registrar shall, in any case where it is not also the Fiscal Agent, forthwith following each regular record date and at any other time as reasonably requested by the Fiscal Agent, certify and furnish to the Fiscal Agent and any paying agent as the Fiscal Agent shall specify, the names, addresses, and holdings of Bondholders and any other relevant information reflected in the Bond Register, and the Fiscal Agent and any such paying agent shall for all purposes be fully entitled to rely upon the information so furnished to it and shall have no liability or responsibility in connection with the preparation thereof.

Interchangeability of Bonds

Fully registered Bonds, upon surrender thereof at the office of Bond Registrar with a written instrument of transfer satisfactory to the Bond Registrar, duly executed by the registered owner or his duly authorized attorney may at the option of the registered owner thereof, and upon payment by such registered owner of any charges, which the City or Bond Registrar may make, be exchanged for an equal aggregate principal amount of fully registered Bonds of the same Series, maturity and interest rate of any other authorized denominations.

Negotiability, Transfer and Registry

Fully registered Bonds shall be transferable only by the registered owner thereof in person or by his attorney duly authorized in writing, upon surrender thereof together with a written instrument of transfer satisfactory to the Bond Registrar duly executed by the registered owner or his duly authorized attorney. Upon the transfer of any such fully registered Bonds the City shall issue and the Bond Registrar shall execute in the name of the transferee a new fully registered Bond or Bonds of the same aggregate principal amount and Series, maturity and interest rate as the surrendered Bonds.

The City, the Fiscal Agent and any paying agent designated in the Bonds may deem and treat the person in whose name any Bond shall be registered in the Bond Register as the absolute owner of such Bond, whether such Bond shall be overdue or not, for the purpose of receiving payment of, or on account of, the principal and redemption price of and interest on such Bond and for all other purposes, and all such payments so made to any such registered owner or upon his order shall be valid and effectual to satisfy and discharge the liability upon such Bond to the extent of the sum or sums so paid, and neither the City, the Fiscal Agent nor any paying agent designated in the Bond shall be affected by any notice to the contrary.

Any consent, waiver or other action taken by the registered owner of any Bond pursuant to the provisions of the General Ordinance shall be conclusive and binding upon such Holder, his heirs, successors or assigns, and upon all transferees of such Bond whether, or not notation of such consent, waiver or other action shall have been made on such Bond or on any Bond issued in exchange therefor.

Regulations With Respect to Exchanges and Transfers

In all cases in which the privilege of exchanging Bonds or transferring registered Bonds is exercised, the City shall execute and deliver Bonds in accordance with the General Ordinance. All Bonds surrendered in any such exchanges or transfers shall forthwith be delivered to the Bond Registrar and cancelled or retained by the Bond Registrar. For every such exchange or transfer of Bonds, whether temporary or definitive, the City or the Bond Registrar may make a charge sufficient to reimburse it for any tax, fee or other governmental charge imposed by a governmental unit other than the City in connection with said exchange, transfer or registration and for any charge of insuring Bonds during the delivery thereof. Neither the City nor the Bond Registrar shall be required to transfer or exchange Bonds of any Series for a period of 20 days next preceding any selection of Bonds to be redeemed or thereafter until after the first mailing of any notice of redemption, or to transfer, exchange or register any Bonds called for redemption.

Credit Enhancement; Exchange Agreements; Qualified Swaps

As provided by Supplemental Ordinance or Determination relating to any Series of Bonds and subject to the requirements of the General Ordinance, the City may provide for a Credit Facility, Exchange Agreement or Qualified Swap with respect to any Series of Bonds.

Purpose of Bonds; Combination or Projects for Financing Purposes

The Bonds issued under the General Ordinance shall be issued for the purpose (i) of paying the costs of Projects (as such term is defined in the Act) relating to the System, (ii) of reimbursing any fund of the City from which such costs shall have been paid or advanced, (iii) of funding any of such costs for which the City shall have outstanding bond anticipation notes or other obligations, (iv) of refunding any Bonds or bonds of the City issued for the foregoing purposes or (v) of financing anything else relating to the System permitted under the Act. The water and wastewater systems of the City (referenced in the definition of “System” above) are combined as a Project for the purpose of capital financing but the separate accounts or subaccounts required by the Philadelphia Home Rule Charter shall be maintained within the funds and accounts established under the General Ordinance in accordance with the Philadelphia Home Rule Charter.

Pledge or Revenues; Grant of Security Interest; Limitation on Recourse

The City pledges, and assigns to the Fiscal Agent, its successors in trust and its assigns, for the security and payment of all Bonds (other than Subordinated Bonds) and grants to said Fiscal Agent, its successors in trust and its assigns, a lien on and security interest in (i) all Project Revenues and (ii) all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established in the General Ordinance together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund). The Fiscal Agent shall hold and apply the security interest granted in the General Ordinance and the pledged revenues and funds described therein, in trust, for the equal and ratable benefit and security of all present and future Holders of Bonds (other than Subordinated Bonds) issued pursuant to the provisions of the General Ordinance and each Supplemental Ordinance, without preference, priority or distinction of any one Bond over any other Bond (other than Subordinated Bonds); provided however, that the pledge of the General Ordinance may also be for the benefit of a Credit Facility and Qualified Swap, or any other person who undertakes to provide moneys for the account of the City for the payment of principal or redemption price of and interest on any Series of Bonds (other than Subordinated Bonds), on an equal and ratable basis with Bonds, to the extent provided by any Supplemental Ordinance or Determination.

For the purpose of compliance with the filing requirements of the Uniform Commercial Code in order to perfect the security interest granted by the General Ordinance, the Fiscal Agent shall be deemed to be, and the City recognizes the Fiscal Agent as, the representative of Bondholders to execute financing statements as the secured party.

Neither the Bonds nor the City’s reimbursement or other contractual obligations under any Credit Facility, Qualified Swap or Exchange Agreement shall constitute a general indebtedness or a pledge of the full faith and credit of the City within the meaning of any constitutional or statutory provision or limitation of indebtedness. No Bondholder or beneficiary of any of the foregoing agreements shall ever have the right, directly or indirectly, to require or compel the exercise of the ad valorem taxing power of the City for the payment of the principal and redemption price of or interest on the Bonds or the making of any payments under the General Ordinance. The Bonds and the obligations evidenced thereby and by the foregoing agreements, shall not constitute a lien on any property of or in the City, other than the Project Revenues and amounts on deposit in or standing to the credit of the Water and Wastewater Funds and interest earnings on amounts in such funds.

Parity Bonds

All Bonds issued under the General Ordinance (other than Subordinated Bonds) shall be parity Bonds equally and ratably secured by the pledge of and grant of the security interest in the Project Revenues and the amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund), together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund) without preference, priority or distinction as to lien or otherwise, except as otherwise provided, of any one Bond over any other Bond or as between principal and interest.

The City reserves the right, and nothing in the General Ordinance shall be construed to impair such right, to finance improvements to the System by the issuance of its general obligation bonds or by the issuance, under ordinances other than Supplemental Ordinances, of water and/or wastewater revenue bonds or notes for the payment of which Project Revenues may be used or pledged subject and subordinate to the payment from such Project Revenues of the payments described below under "Transfers From Revenue Fund" and subject to the elimination of any deficiency in any fund or account established under the General Ordinance or under any Supplemental Ordinance.

Establishment of Funds and Accounts

The following funds and accounts are established by the General Ordinance and shall be held by the Fiscal Agent:

(a) Revenue Fund;

(b) Sinking Fund and within such Fund a Debt Service Account, a Charges Account and a Debt Reserve Account;

(c) Subordinated Bond Fund;

(d) Rate Stabilization Fund;

(e) Residual Fund and within such Fund a Special Water Infrastructure Account;

(f) Construction Fund, and within the Construction Fund, separate accounts designated as follows:

  (i) the Existing Projects Account, into which existing proceeds, if any, of revenue bonds heretofore issued under the Act in respect of the System shall be deposited,

  (ii) the Bond Proceeds Account, into which proceeds of Bonds issued under the General Ordinance shall be deposited, and

  (iii) the Capital Account;

(g) Rebate Fund.

Nothing in the General Ordinance shall be construed to prevent the City from establishing, in connection with the issuance of one or more Series of Bonds, additional funds or accounts to be held for the benefit of one or more Series of Bonds issued under the General Ordinance, as set forth in Supplemental Ordinances; provided that, no such additional funds or accounts shall be established unless, in the opinion of Bond Counsel, establishment of additional funds or accounts would not adversely affect the exclusion of interest on Bonds, if any, from gross income for federal income tax purposes.

Segregation of Water and Wastewater Funds; Deposit of Project Revenues into Revenue Fund

(a) The Water and Wastewater Funds shall be held separate and apart from all other funds and accounts of the City and the Fiscal Agent and the funds and accounts therein shall not be commingled with, loaned or transferred among themselves or to any other City funds or accounts except as expressly permitted by the General Ordinance.

(b) The City shall cause all Project Revenues received by it on any date to be deposited into the Revenue Fund upon receipt thereof by the City and the Fiscal Agent shall, upon receipt of Project Revenues, deposit such Project Revenues into the Revenue Fund. The City and Fiscal Agent also shall cause to be deposited into the Revenue Fund such portion of proceeds of Bonds as designated by Supplemental Ordinance or Determination and any other funds directed to be deposited into the Revenue Fund by the City. The Fiscal Agent shall, at the written direction of the City, disburse from the Revenue Fund the amounts and at the times specified below under "Transfers From Revenue Fund."

(c) If at any time sufficient moneys are not available in the Revenue Fund to pay Operating Expenses and to make transfers required pursuant to the General Ordinance, then amounts on deposit in the Construction Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Revenue Fund for the payment of such Operating Expenses to the extent of the deficiency, until such loaned amounts are required by the Water Department for purposes of the Fund making the loan. If a similar deficiency exists in the Construction Fund, amounts on deposit in the Revenue Fund, Rate Stabilization Fund and Residual Fund may be loaned temporarily, at the written direction of the City, to the Construction Fund, to the extent of the deficiency, until required by the Water Department for purposes of the Fund making the loan.

Transfers From Revenue Fund

Amounts on deposit in the Revenue Fund shall be applied by the Fiscal Agent, at the written direction of the City, in the following manner and in the following order of priority:

(a) to the City or its designees to pay such sums as are necessary to meet Operating Expenses in a timely manner;

(b) (i) on or before the dates that the principal or redemption price of and interest on Bonds (other than Subordinated Bonds) or payments under a Swap Agreement or Credit Facility are due, to deposit in the Debt Service Account of the Sinking Fund the amount necessary to provide for the timely payment of the principal or redemption price of and interest on such Bonds (other than Subordinated Bonds), any payments under any Swap Agreement and any amounts under a Credit Facility to repay advances thereunder to pay any of the foregoing, and (ii) on or before the dates that other payments are due under any Credit Facility with respect to Bonds (other than Subordinated Bonds) to deposit in the Charges Account of the Sinking Fund the amount necessary to make such payments;

(c) if the transfers in paragraphs (a) and (b) above are being made according to schedule, for deposit in the Debt Reserve Account, the amount, if any, required to eliminate any deficiency therein;

(d) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer required pursuant to paragraph (c) above, to deposit in any debt reserve account established within the Sinking Fund and not held for the equal and ratable benefit of all Bonds (other than Subordinated Bonds), the amount, if any, required to eliminate any deficiency therein;

(e) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c) and (d) above, to deposit in the Subordinated Bond Fund the amount necessary to provide for the timely payment of the principal or redemption price of and interest on Subordinated Bonds, and forward to the paying agent in respect of bond anticipation notes (payable by exchange for, or out of the proceeds of the sale of Subordinated Bonds) the amount necessary to provide for the timely payment of interest thereon (to the extent not capitalized);

(f) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d) and (e) above to pay to the City the amount necessary to provide for the timely payment of the principal or redemption price of and interest on General Obligation Bonds;

(g) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e) and (f) above, to transfer to the Rate Stabilization Fund such amount as the Water Commissioner may determine, the first such determination to be made on the Effective Date and to include the balance on that date in the Renewal and Replacement Fund created under the Prior Ordinance and the unencumbered operating balance of the Water Department as of the end of the Fiscal Year immediately preceding the Effective Date;

(h) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c) , (d) , (e), (f) and (g) above, to transfer to the Capital Account of the Construction Fund on June 20, of each Fiscal Year (or the first business day following June 20 if June 20 is not a business day) an amount equal to the sum of (i) the Capital Account Deposit Amount, (ii) the Debt Service Withdrawal for the preceding Fiscal Year and (iii) the Operating Expense Withdrawal for the preceding Fiscal Year, less any amounts transferred during the Fiscal Year to such Capital Account from the Residual Fund; and

(i) if the transfers in paragraphs (a) and (b) above are being made according to schedule, and following any transfer then required to be made pursuant to paragraphs (c), (d), (e), (f), (g) and (h) above and after providing for the repayment of any inter-Fund loans, to transfer as of June 30 of each year all remaining amounts to the Residual Fund.

Notwithstanding the foregoing, nothing in the General Ordinance shall prevent the City from directing the transfer of amounts on deposit in any fund or account established under the General Ordinance into the Rebate Fund in the amounts and at the times specified below under "Funds and Accounts — Rebate Fund."

Sinking Fund

The Sinking Fund is to be a consolidated fund for the equal and proportionate benefit of the Holders of all Bonds (other than Subordinated Bonds) from time to time Outstanding and each account therein may be invested and reinvested on a consolidated basis.

The Fiscal Agent, as directed by the City by Supplemental Ordinance, Determination or other written direction, shall pay out of the Debt Service Account of the Sinking Fund to the designated paying agent or agents (i) on or before each interest payment date for any of the Bonds (other than Subordinated Bonds) the amount required for the interest payable on such date; and (ii) on or before each principal, redemption or prepayment date for any Bonds (other than Subordinated Bonds), the amount required for the principal, redemption or prepayment payable on such date, and (iii) on or before the respective due dates the amounts, if any, due under any Swap Agreements. Such amounts shall be applied by the designated paying agent or agents on the due dates thereof. The Fiscal Agent shall also pay out of the Debt Service Account of the Sinking Fund the accrued interest included in the purchase price of Bonds purchased for retirement and on or before the due dates any amounts owing by the City under any Credit Facility on account of advances to pay principal of or interest or redemption premium on Bonds (other than Subordinated Bonds).

Amounts accumulated in the Debt Service Account with respect to any Sinking Fund Installment (together with amounts accumulated therein with respect to interest on the Bonds for which such Sinking Fund Installment was established) if so directed by the City, shall be applied by the Fiscal Agent, on or prior to the 60^{th} day preceding the due date of such Sinking Fund Installment, to the purchase of Bonds of the Series, maturity and interest rate within each maturity for which such Sinking Fund Installment was established. All purchases of Bonds pursuant to this provision shall be made at prices not exceeding the applicable sinking fund redemption price of such Bonds plus accrued interest, and such purchases shall be made by the Fiscal Agent as directed by the City. As soon as practicable after the 42^{nd} day preceding the due date of any such

Sinking Fund Installment, the Fiscal Agent shall proceed to call for redemption, by giving notice as provided in the General Ordinance, on such due date Bonds of the Series, maturity and interest rate within each maturity for which such Sinking Fund Installment was established (except in the case of Bonds maturing on a Sinking Fund Installment date) in such amount as shall be necessary to complete the retirement of the unsatisfied balance of such Sinking Fund Installment after making allowance for any Bonds purchased with moneys held in the Subordinated Bond Fund which the City has directed the Fiscal Agent to apply as a credit against such Sinking Fund Installment. The Fiscal Agent shall pay out of the Sinking Fund to the appropriate paying agent or agents, on or before such redemption date (or maturity date) the amount required for the redemption of the Bonds so called for redemption (or for the payment of such Bonds then maturing) and such amount shall be applied by such paying agent or agents to such redemption (or payment). All expenses in connection with the purchase or redemption of Bonds shall be paid by the City from Project Revenues.

In the event of the refunding of any Bonds, the Fiscal Agent shall, if the City so directs, withdraw from the Sinking Fund all, or any portion of, the amounts accumulated therein with respect to principal or interest on the Bonds being refunded and deposit such amounts with itself or another financial institution serving as escrow agent to be held for the payment of the principal or redemption price, if applicable, and interest on the Bonds being refunded; provided that such withdrawal shall not be made unless immediately thereafter the Bonds being refunded shall be deemed to have been paid as described below under "Deposit of Funds for Payment of Bonds." In the event of a refunding, the City may also direct the Fiscal Agent to withdraw from the Sinking Fund all, or a portion of, the amounts accumulated therein with respect to principal and interest on the Bonds being refunded and deposit such amounts in any fund or account established under the General Ordinance.

If any Bond shall not be presented for payment when the principal thereof becomes due, either at maturity or otherwise or at the date fixed for redemption thereof, if moneys sufficient to pay such Bond shall have been deposited with the Fiscal Agent, it shall be the duty of the Fiscal Agent to hold such moneys, without liability to the City, any Bondholder or any other person for interest thereon, for the benefit of the owner of such Bond. Notwithstanding the foregoing, any moneys in the Sinking Fund for the payment of the interest, principal or redemption premium of Bonds unclaimed for two (2) years after the due date shall be repaid to the City but such repayment shall not discharge the obligation, if any, for which such moneys were previously held in the Sinking Fund; provided, however, that such repayment shall not be made unless, at the time of such repayment, there shall exist no deficiency in any fund or account established under the General Ordinance or any Supplemental Ordinance.

The Fiscal Agent shall pay out of the Charges Account to the appropriate payees any fees, expenses and other amounts due under any Credit Facility with respect to Bonds (other than Subordinated Bonds), to the extent such amounts are not paid from the Debt Service Account.

Credits Against Sinking Fund Installments

If at any time Bonds of any Series or maturity for which Sinking Fund Installments shall have been established are purchased or redeemed other than (i) from amounts accumulated in the Debt Service Account or (ii) Bonds deemed to have been paid as described under "Deposit of Funds for Payment of Bonds" below, and, with respect to such Bonds which have been deemed paid, irrevocable instructions have been given to the Fiscal Agent to redeem or purchase the same on or prior to the due date of the Sinking Fund Installment to be credited under this paragraph, the City may from time to time and at any time by written notice to the Fiscal Agent specify the portion, if any, of such Bonds so purchased, redeemed or deemed to have been paid and not previously applied as a credit against any Sinking Fund Installment which are to be credited against future Sinking Fund Installments. Such notice shall specify the amounts of such Bonds to be applied as a credit against such Sinking Fund Installment or Installments and the particular Sinking Fund Installment or Installments against which such Bonds are to be applied as a credit; provided, however that none of such Bonds may be applied as a credit against a Sinking Fund Installment to become due less than 42 days after such notice is delivered to the Fiscal Agent. All such Bonds to be applied as a credit shall be surrendered to the Fiscal Agent for cancellation on or prior to the due date of the Sinking Fund Installment against which they are being applied as a credit. The portion of any such Sinking Fund Installment remaining after the deduction of any such amounts credited toward the same (or the original amount of any such Sinking Fund Installment if no such amounts shall have been credited toward the same) shall constitute the unsatisfied balance of such Sinking Fund Installment for the purpose of calculation of Sinking Fund Installments due on a future date.

Debt Reserve Account

Unless otherwise provided in the applicable Supplemental Ordinance, the City is required, under direction of the Director of Finance, to deposit in the Debt Reserve Account from the proceeds of sale of each Series of Bonds issued under the General Ordinance, an amount which, when added to the Outstanding balance in the Debt Reserve Account, will be equal to the Debt Reserve Requirement immediately after the issuance of such Series of Bonds. The money and investments in the Debt Reserve Account shall be held and maintained in an amount equal at all times to the Debt Reserve Requirement provided that if the Supplemental Ordinance authorizing a Series of Bonds shall authorize the accumulation from Project Revenues of a reserve of such amount in respect of such Bonds over a period of not more than three Fiscal Years after the issuance and delivery of such Bonds, then the full payment of the annual deposits required under such Supplemental Ordinance will meet the Debt Reserve Requirements of the General Ordinance in respect of such Bonds.

If at any time and for any reason, the moneys in the Debt Service Account of the Sinking Fund are insufficient to pay as and when due, the principal of (and premium, if any) or interest on any Bond or Bonds or other obligations payable from the Debt Service Account then due (including under Swap Agreements and Credit Facilities), the Fiscal Agent is authorized and directed to withdraw from the Debt Reserve Account and pay over the amount of such deficiency for deposit in the Debt Service Account. If by reason of such withdrawal or for any other reason there shall be a deficiency in the Debt Reserve Account, the City covenants to restore such deficiency promptly from Net Revenues.

Any moneys in the Debt Reserve Account in excess of the Debt Reserve Requirement is required to be transferred to the Revenue Fund at the written direction of the City.

Notwithstanding the foregoing provisions, in lieu of the required deposits into the Debt Reserve Account, the City may cause to be deposited into the Debt Reserve Account a surety bond or an insurance policy payable to the Fiscal Agent for the account of the Bondholders and any Qualified Swap or an irrevocable letter of credit in an amount equal to the difference between the Debt Reserve Requirement and the remaining sums, if any, then on deposit in the Debt Reserve Account. The surety bond, insurance policy or letter of credit shall be payable (upon the giving of notice as required thereunder) on any interest payment date on which moneys will be required to be withdrawn from the Debt Reserve Account and applied to the payment of debt service on the Bonds and such withdrawal cannot be met by amounts on deposit in the Debt Reserve Account or provided from any other Fund under the General Ordinance. The insurer providing such surety bond or insurance policy shall be an insurer whose municipal bond insurance policies insuring the payment, when due, of the principal of and interest on municipal bond issues results in such issues being rated in not lower than the second highest rating category (without regard to rating subcategories) by either Moody's or S&P. The letter of credit issuer shall be a bank or trust company which is rated not lower than the second highest rating category (without regard to ratings sub-categories) by either Moody's or S&P. If a disbursement is made pursuant to a surety bond, an insurance policy or a letter of credit provided pursuant to this paragraph, the City shall be obligated either (i) to reinstate the maximum limits of such surety bond, insurance policy or letter of credit or (ii) to deposit into the Debt Reserve Account, funds in the amount of the disbursement made under such surety bond, insurance policy or letter of credit, or a combination of such alternatives, as shall provide that the amount in the Debt Reserve Account equals the Debt Reserve Requirement within a time period not longer than would be required to restore the Debt Reserve Account by operation of this provision and from the same source of funds as provided in the General Ordinance. Upon the occurrence of any reduction or suspension or any credit rating with respect to such surety bond, insurance policy or letter of credit (or the provider thereof) required by the General Ordinance, the City shall so notify the provider of the surety bond, insurance policy or letter of credit and prior to the effective date of such cancellation shall either provide a substitute surety bond, insurance policy or letter of credit meeting the above-described requirements or shall deposit cash in the Debt Reserve Account so that the amount in such Account shall equal the Debt Reserve Requirement. The Director of Finance may use funds already held in the Debt Reserve Account to purchase appropriate surety bonds or insurance policies for deposit in the Debt Reserve Account in lieu of some or all of the current cash or other deposits therein, which surety bonds or insurance policies shall satisfy the requirements described in this paragraph.

Subordinated Bond Fund

Subject to the third paragraph under this heading, the Fiscal Agent shall apply amounts in the Subordinated Bond Fund to the payment of the principal of, redemption premium, if any, and interest on Subordinated Bonds of a Series and to payments due under any Credit Facilities and Exchange Agreements with respect to Subordinated Bonds in accordance with the provisions of, and subject to the priorities and limitations and restrictions provided in, the Supplemental Ordinance and Determination authorizing such Series of Subordinated Bonds.

At any time and from time to time the City may deposit in the Subordinated Bond Fund for the payment of the principal of, redemption premium, if any, and interest on Subordinated Bonds amounts received from any source other than Project Revenues which is not inconsistent with the General Ordinance or any Supplemental Ordinance or Determination.

If at any time the amounts in the Sinking Fund shall be less than the current requirement of such fund pursuant to paragraphs (b) and (c) under "Transfers from Revenue Fund" above and there shall not be on deposit in the Debt Reserve Account, the Capital Account or the Residual Fund available moneys sufficient to cure such deficiency, then the Fiscal Agent shall withdraw from the Subordinated Bond Fund and deposit in the Sinking Fund the amount necessary (or all the moneys in said fund, if less than the amount necessary) to eliminate such deficiency.

Any moneys in the Subordinated Bond Fund for the payment of the interest, principal or redemption premium of Subordinated Bonds unclaimed for two years after the due date are to be repaid to the City but such repayment shall not discharge the obligation, if any, for which such moneys were previously held in the Subordinated Bond Fund; provided, however, that such repayment shall not be made unless, at the time of such repayment, there shall exist no deficiency in any fund or account established under the General Ordinance or any Supplemental Ordinance.

Construction Fund

Proceeds of Bonds issued for capital purposes are to be deposited into the Bond Proceeds Account of the Construction Fund and disbursed according to established procedures of the City.

The Fiscal Agent shall on the Effective Date deposit in the Existing Projects Account proceeds of Prior Bonds as directed by a Supplemental Ordinance or Determination; deposit in the Bond Proceeds Account the proceeds of Bonds as directed by a Supplemental Ordinance or Determination; and deposit in the Capital Account any amounts transferred pursuant to paragraph (h) under "Transfers from Revenue Fund" above. Amounts in the Existing Projects Account and Bond Proceeds Account shall be applied as directed in writing by the City for purposes permitted by the Act and the Bonds and such other purposes as are permitted under the General Ordinance.

Amounts deposited in the Capital Account may be applied at the written direction of the City to (i) payments for the cost of renewals, replacements and improvements to the System; (ii) payments into the Sinking Fund or into the Subordinated Bond Fund to cure a deficiency in one of the foregoing; or (iii) the purchase of Bonds if a Consulting Engineer shall first have certified to the City that amounts remaining on deposit in the Capital Account following the proposed purchase of Bonds will be sufficient to pay the cost of renewals, replacement and improvements to the System projected to be payable during such Fiscal Year; provided, however, that no Bond shall be purchased at a price in excess of the principal amount and redemption price which would be applicable if the Bond were redeemed at the time such Bond was first subject to redemption.

As described in paragraph (c) under “Segregation of Water and Wastewater Funds; Deposit of Project Revenues into Revenue Fund” above, the General Ordinance requires that, if at any time sufficient moneys are not available for the payment of Operating Expenses, then amounts on deposit in the Capital Account may be used for the payment of Operating Expenses to the extent of the deficiencies.

Residual Fund

Amounts on deposit in the Residual Fund may be used at the written direction of the City (i) to pay Operating Expenses; (ii) to fund transfers to any fund or account established under the General Ordinance or under a Supplemental Ordinance (other than the Revenue Fund and the Rate Stabilization Fund); (iii) to make payments required under any Exchange Agreement; (iv) for the payment of principal, redemption premium, if any, and interest on any revenue bonds or notes (the proceeds of which were applied in respect of the System) issued under the Act but not under the General Ordinance; (v) for the payment of principal, redemption premium, if any, and interest on any General Obligation Bonds; (vi) for the payment of principal, redemption premium, if any, and interest on other general obligation debt issued in respect of the System; (vii) for the payment of amounts due under capitalized leases or similar obligations relating to the System; and (viii) to fund a transfer to the City’s “General Fund” in an amount not to exceed the lower of (A) all “Net Reserve Earnings” as defined below or (B) $4,994,000. “Net Reserve Earnings” shall mean the amount of interest earnings during the Fiscal Year on amounts in the Debt Reserve Account and the Subordinated Bond Fund less the amount of interest earnings during the Fiscal Year on amounts in any such reserve funds and accounts giving rise to a rebate obligation pursuant to Section 148(f) of the Code.

The General Ordinance provides that the City establish expenditure authority from the Residual Fund to enable it to pay Operating Expenses and the other items permitted by the General Ordinance. In the event that there is a substitution of appropriate surety bonds or insurance policies from some or all of the deposits held in the Debt Reserve Account, a transfer of resulting excess money in the Debt Reserve Account to the Revenue Fund and, following compliance with the provisions described under “Transfers From Revenue Fund” above, a transfer of remaining amounts of such excess to the Residual Fund, such remaining amount shall be deposited into the Special Water Infrastructure Account. Any amounts deposited in the Special Water Infrastructure Account may be used to finance water-related infrastructure projects.

Rate Stabilization Fund

Pursuant to the General Ordinance, as of the effective date of the General Ordinance and as of June 30 of each Fiscal Year, the City may transfer (i) from the Rate Stabilization Fund to the Revenue Fund or (ii) from the Revenue Fund to the Rate Stabilization Fund, the amount determined by the Water Commissioner to be transferred for such Fiscal Year.

Rebate Fund

The General Ordinance provides that the Rebate Fund shall be maintained for so long as any Series of Bonds is Outstanding, and for 60 days thereafter (or such other period as may be specified by the Code and applicable regulations), for the purpose of paying to the United States Treasury the amount required to be rebated pursuant to Section 148(f) of the Code. All amounts in the Rebate Fund, including income earned from investment of amounts in the Rebate Fund, shall be held by the City free and clear of the lien created by the General Ordinance.

Management of Funds and Accounts

The General Ordinance provides that the moneys on deposit in the funds and accounts established under the General Ordinance, to the extent not currently required, shall be invested and secured as required by Section 9 of the Act, all at the direction and under the management of the Director of Finance or such other chief fiscal officer of the City as may hereinafter be established.

Investment of Funds and Accounts

All moneys deposited in any fund or account established under the General Ordinance or under any Supplemental Ordinance may be invested by the City or by the Fiscal Agent, at the oral or written direction of the City, in any investments permitted by law (except as otherwise provided in the General Ordinance with respect to the Debt Reserve Account and Rebate Fund); provided that any investments with respect to amounts on deposit in the funds (other than the Debt Reserve Account) and accounts established under the General Ordinance shall mature or shall be subject to redemption by the holder thereof upon demand at par no later than the date when such amounts are needed for the purposes of such funds or accounts. Interest earnings on amounts on deposit (i) in the Revenue Fund are to be credited to the Revenue Fund; (ii) in the Sinking Fund (except as provided in (iii) below) are to be credited to the Sinking Fund to the extent needed to meet Debt Service Requirements in respect of Bonds (other than Subordinated Bonds) and additional interest earnings shall be credited to the Revenue Fund; (iii) in the Debt Reserve Account shall be credited to the Debt Reserve Account until such account is fully funded and shall then be credited to the Residual Fund up to the maximum amount to be transferred to the City's General Fund and any excess is to then be transferred to the Revenue Fund; (iv) in the Subordinated Bond Fund are to be credited to the Subordinated Bond Fund to the extent needed to meet Debt Service Requirements in respect of Subordinated Bonds and additional interest earnings shall be credited to the Revenue Fund or to such other fund or account established under the General Ordinance as the City may direct pursuant to a Supplemental Ordinance; (v) in the Residual Fund, shall be credited to the Residual Fund; (vi) in the Rate Stabilization Fund shall be credited to the Revenue Fund; (vii) in the Construction Fund shall be credited to the appropriate account of the Construction Fund or to the Revenue Fund, as the City shall direct; and (viii) in the Rebate Fund shall be credited to the Rebate Fund.

Valuation of Funds and Accounts

In computing the assets of any fund or account established under the General Ordinance, investments and accrued interest thereon are to be deemed a part thereof. Such investments shall be valued on June 30 of each Fiscal Year at the lower of the cost or current market value thereof if the applicable maturity is more than one year and at par if the applicable maturity is equal to or less than one year plus accrued interest, or at the redemption price thereof, if then redeemable at the option of the holder; provided that investments in any reserve fund or reserve account of the Sinking Fund established pursuant to a Supplemental Ordinance may be valued as provided in the Supplemental Ordinance establishing it. The annual valuation is to apply for all purposes of the General Ordinance except if Bonds are issued or a fund deficit occurs based on the annual valuation, in which cases a valuation is to be made on the date Bonds are issued or the deficit is eliminated, as the case may be.

Covenants of the City

Rate Covenant: Pursuant to the General Ordinance, the City covenants with the Bondholders that it will, at a minimum, impose, charge and collect in each Fiscal Year such water and wastewater rents, rates, fees and charges as shall yield Net Revenues which shall be equal to at least 1.20 times the Debt Service Requirements for such Fiscal Year (recalculated to exclude therefrom principal and interest payments in respect of Subordinated Bonds); provided that such water and wastewater rents, rates, fees and charges shall yield Net Revenues which shall be at least equal to 1.00 times (i) the Debt Service Requirements for such Fiscal Year (including Debt Service Requirements in respect of Subordinated Bonds); (ii) amounts required to be deposited into the Debt Reserve Account during such Fiscal Year; (iii) the principal or redemption price of and interest on General Obligation Bonds payable during such Fiscal Year; (iv) debt service requirements on Interim Debt payable during such Fiscal Year; and (v) the Capital Account Deposit Amount for such Fiscal Year (less any amounts transferred from the Residual Fund to the Capital Account during such Fiscal Year). In estimating debt service requirements on any Interim Debt for the purposes of projecting compliance with this covenant, the City is entitled to assume that such Interim Debt will be amortized over a period of up to the maximum term permitted by the Act, provided however, such period shall not be in excess of the useful life of the assets to be financed, on an approximately level debt service basis and bear interest at the average interest rate on bonds of a similar maturity and credit rating (without any credit enhancement) as the Bonds outstanding under the General Ordinance. Promptly upon any material change in the circumstances which were contemplated at the time such rents, rates, fees and charges were most recently reviewed, but not less frequently than once in each Fiscal Year, the City is required to review the rents, rates, fees and charges as necessary to enable the City to comply with the foregoing requirements; provided that such rents, rates, fees and charges shall in any event produce moneys sufficient to enable the City to comply with its covenants in the General Ordinance.

In estimating Debt Service Requirements on any Variable Rate Bonds for purposes of projecting compliance with this covenant or funding the Debt Reserve Account, the City is entitled to assume that such Variable Rate Bonds will bear interest at a rate equal to (i) the average interest rate on the Variable Rate Bonds during the period of 24 consecutive calendar months preceding the date of calculation or (ii) if the Variable Rate Bonds were not Outstanding during the entire 24-month period, the average interest rate on the Variable Rate Bonds since their date of issue or (iii) such other rate as may be specified in a Supplemental Ordinance or Determination.

Pursuant to the General Ordinance, the City represents that it has, by its Code of General Ordinances, as amended, authorized the imposition of rents, rates, fees and charges by the Water Department sufficient from time to time to comply with the Rate Covenant and covenants with the Holders of Bonds that it will not repeal or materially adversely dilute or impair such authorization.

Timely Payment of Principal, Redemption Premium and Interest: Pursuant to the General Ordinance, the City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will pay or cause the Fiscal Agent or a paying agent to pay from the Project Revenues deposited in the Sinking Fund and the Subordinated Bond Fund the principal of, redemption premium, if any, and interest on all Bonds as the same shall become due and payable and as more particularly set forth in the Bonds and to pay the amounts due with respect to any and all Credit Facilities (including the reimbursement agreement or similar related agreement) and Qualified Swaps.

Operation of System: Pursuant to the General Ordinance, the City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will continuously maintain the System or cause the System to be maintained in good condition and will continuously operate the System or cause the System to be operated.

Conditions of and Provisions Relating to Issuing Bonds: The City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as any such Bonds shall remain Outstanding it will not issue any Series of Bonds under the General Ordinance without first complying with certain conditions stated in the General Ordinance including, without limitation, (a) the enactment of a Supplemental Ordinance, (b) the filing with the Fiscal Agent of a transcript of the proceedings relating to the issuance of such Series of Bonds, (c) the delivery to the City Council of a Consulting Engineer's Report, (d) the filing with the Fiscal Agent of certain opinions of counsel and (e) the execution of appropriate documents.

The Consulting Engineer's Report referred to in the preceding paragraph shall state that the Net Revenues are currently sufficient to comply with the Rate Covenant and are projected to be sufficient to comply with the Rate Covenant for each of the two Fiscal Years following the Fiscal Year in which the Bonds are to be issued; provided that if interest on such Bonds or a portion thereof has been capitalized, the projection shall extend to the two Fiscal Years following the Fiscal Year up to which interest has been capitalized on the Bonds or a portion thereof.

The General Ordinance provides that upon compliance with the conditions enumerated in the preceding paragraph and unless otherwise provided in the applicable Supplemental Ordinance or Determination, accrued interest on Bonds (other than Subordinated Bonds) shall be deposited in the Sinking Fund, accrued interest on Subordinated Bonds shall be deposited in the Subordinated Bond Fund, an amount sufficient to satisfy the requirements concerning the Debt Reserve Account shall be deposited in the Debt Reserve Account and the balance of the proceeds of the Bonds shall be deposited in the Bond Proceeds Account of the Construction Fund and shall be disbursed therefrom, in accordance with established procedures of the City; provided, however, that if such Bonds shall be issued for the purpose of funding or refunding Bonds previously issued by the City such proceeds shall, unless otherwise directed by the Supplemental Ordinance, be deposited in a special fund or account to be established with and held by the Fiscal Agent or another entity acting as an escrow agent and invested (if appropriate) and disbursed under the direction of the Director of Finance for the purpose of retiring the Bonds being funded or refunded.

Refunding Bonds

If the City shall, by Supplemental Ordinance, authorize the issuance of refunding Bonds pursuant to Section 10 of the Act, in the absence of specific direction or inconsistent authorization in the Supplemental Ordinance, the Director of Finance is authorized in the name and on behalf of the City to take all such action, including the irrevocable pledge of proceeds and the income and profit from the investment thereof for the payment and redemption of the funded or refunded Bonds, bonds or notes and, if there shall have been provided a Qualified Swap with respect to the Bonds to be refunded, provision for the payment, if any, of all amounts due and payable by the City under such Qualified Swap, and including the publication of all required redemption notices or the giving of irrevocable instructions therefor, as may be necessary or appropriate to accomplish the funding or refunding and to comply with the requirements of Section 10 of the Act.

Subordinated Bonds

The City may, at any time, or from time to time, issue Subordinated Bonds for any purpose permitted under the General Ordinance and under the Act. Subordinated Bonds shall be payable out of, and may be secured by a security interest in and a pledge and assignment of, Project Revenues and amounts on deposit in the Subordinated Bond Fund; provided, however, that any such security interest in and pledge and assignment of Project Revenues and amounts on deposit in the Subordinated Bond Fund shall be, and shall be expressed to be, subordinate in all respects to the security interest in, and pledge and assignment of, the Project Revenues and the amounts on deposit in the funds and accounts (other than the Rebate Fund but including the Subordinated Bond Fund) established under the General Ordinance for the security of the Bonds (other than Subordinated Bonds).

Annual Reports

The City covenants with the Holders of all Bonds Outstanding under the General Ordinance that so long as such Bonds shall remain Outstanding it will, within 120 days following the close of each Fiscal Year of the City or as soon thereafter as is practicable (not exceeding 150 days following the close of each Fiscal Year), file with the Fiscal Agent a report of the operation of the System, setting forth, among other things, in reasonable detail financial data concerning, and consolidated for, the water and wastewater components of the System for such Fiscal Year, including a balance sheet and a statement of income, expenses, and surplus (in each case not inconsistent with the statement of income, expenses, and other accounts of the City audited by the City Controller) prepared by the Water Department in accordance with generally accepted accounting principles consistently applied, showing compliance with the Rate Covenant, accompanied by a certificate of the Water Commissioner that the water and wastewater components of the System are in good operating condition and by a certificate of the Director of Finance that as of the date of such report the City has complied with all of the covenants in the General Ordinance and in all Supplemental Ordinances on its part to be performed. Such report shall be furnished to the Fiscal Agent in such reasonable number of copies as shall be required to meet the written requests of Bondholders therefor on a first come first served basis.

Disposition of Insurance Proceeds and Proceeds from the Sale of Assets

In the event that any assets of the System are destroyed or the City shall sell any assets of the System (except in the event of the sale or transfer of all or substantially all of the assets of the System to a municipal authority), the City shall, if the insurance proceeds or the proceeds from the sale of assets exceed 1.5% of the depreciated value of property, plant and equipment of the System, as shown on the financial statements of the City for the preceding Fiscal Year, apply such amounts, at the direction .of the Director of Finance or such other chief fiscal officer of the City as may hereinafter be established (i) to the retirement of the principal amount of debt incurred in respect to the System; (ii) to the reconstruction, repair or replacement of assets of the System; or (iii) to the making of capital additions or improvements to the System.

Bonds Not to Become Arbitrage Bonds

The General Ordinance provides that the City covenants for the benefit of the Bondholders that, notwithstanding any other provision of the General Ordinance or any other instrument, it will neither make nor instruct the Fiscal Agent to make any investment or other use of amounts on deposit in the funds and accounts established by the General Ordinance or other proceeds of the Bonds which would cause any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code and the regulations thereunder to the extent that the same are applicable at the time of such investment; it will file any reports required to be filed pursuant to the Code; and it will not take or fail to take any action so as to render any Series of Bonds issued under the General Ordinance as tax-exempt to be arbitrage bonds under Section 148 of the Code.

Prohibition Against Certain Uses of Funds; Enforcement

The City covenants that while any Bonds are Outstanding under the General Ordinance, it will not direct the Fiscal Agent to transfer, loan or advance proceeds of the Bonds or Project Revenues from the Water and Wastewater Funds to any City account for application other than for Water Department purposes.

If, on any date when a deposit is required to be made of the Project Revenues, the City fails to comply with any provision of the General Ordinance, the Fiscal Agent is authorized to and shall seek, by mandamus or other suit, action or proceeding at law or in equity, the specific enforcement or performance of the obligation of the City to cause the Project Revenues to be transferred to the Revenue Fund, and shall have any and all other rights and remedies of a fiscal agent under the General Ordinance, any Supplemental Ordinance, the Act or otherwise at law or in equity.

Credit Facilities and Qualified Swaps

All or any of the foregoing covenants of the City for the benefit of the Bondholders may also be for the benefit of the providers of any Credit Facility and any Qualified Swap to the extent provided in a Supplemental Ordinance or Determination.

Bonds May Be Subject to Redemption

Bonds of any Series may be subject to either optional or mandatory redemption at the times, in the order, in the amounts, at the redemption prices, and under such terms, conditions and restrictions, ail as may be set forth in the Supplemental Ordinance authorizing the issuance of such Series of Bonds or in the Determination relating to such Series of Bonds or, in the absence of such provisions, as may be set forth in the Bonds of such Series, at the direction of the Director of Finance. Notwithstanding or in limitation of the foregoing, a Supplemental Ordinance or Determination for a Series of Bonds may contain provisions for optional redemption of a Series of Bonds which may be retained by the City as a call option or may be held by the City or sold simultaneously with such Series of Bonds or at future dates as determined by such Supplemental Ordinance or Determination.

Effect of Redemption, Payment

Upon compliance with certain notice requirements stated in the General Ordinance, or upon irrevocable instructions to give such notice having been delivered to the Fiscal Agent, irrevocable instruction having been delivered to the Fiscal Agent to pay said Bonds or portions thereof and to pay the amount, if any, due and payable under any Qualified Swap related to said Bonds, and funds having been deposited in the Sinking Fund or the Subordinated Bond Fund (as the case may be) prior to the date fixed for redemption, the Bonds or portions thereof so called for redemption shall become due and payable on the redemption date so designated, and interest on such Bonds or portions thereof shall cease from such redemption date, whether such Bonds be presented for redemption or not. The principal amount of all Bonds or portions thereof so called for redemption, together with the premium, if any, and accrued interest thereon, shall be paid by the Fiscal Agent or any other paying agent designated in the Bonds, upon presentation and surrender thereof in negotiable form.

Partial Redemption

Upon presentation of any Bond which is to be redeemed in part only, the City and the Fiscal Agent shall execute and deliver to the Holder thereof, at the expense of the City, a new Bond or Bonds of authorized denominations in a principal amount equal to and of the same Series and maturity as the unredeemed portion of the Bond or Bonds so presented.

Fiscal Agent

The Fiscal Agent under the Prior Ordinance or its successor, shall be Fiscal Agent as of the Effective Date for the General Ordinance. The City may appoint a successor Fiscal Agent by Supplemental Ordinance to act as Fiscal Agent under the General Ordinance, and in connection with the Bonds issued under the General Ordinance. The Fiscal Agent shall also act as depository of the Sinking Fund and the Subordinated Bond Fund, and may act as paying agent and bonds registrar.

Nothing in the General Ordinance is to be construed to prevent the City, in accordance with law, from engaging other Fiscal Agents from time to time or to engage other paying agents of the Bonds or any Series thereof in addition to, or as a successor to the Fiscal Agent. Any entity appointed by the City as Fiscal Agent under the General Ordinance shall be a trust company or national or state bank having trust powers and combined capital and surplus of at least million $50,000,000 and be qualified to serve pursuant to the Act. Any entity appointed by the City as Fiscal Agent under the General Ordinance as a successor to the Fiscal Agent shall assume all rights and obligations of the Fiscal Agent under the General Ordinance.

Subject to the foregoing, the General Ordinance provides that the proper officers of the City are authorized to enter into contracts or to confirm existing agreements governing the maintenance of funds and accounts and records, the disposal of cancelled Bonds, the rights, duties, privileges and immunities of the Fiscal Agent, and such other matters as are authorized by the Act and as are customary and appropriate and to confirm the agreement of the Fiscal Agent, in its several capacities, to comply with the provisions of the Act and of the General Ordinance.

The Fiscal Agent shall keep on file a copy of each report and its accompanying certificates delivered to it pursuant to the General Ordinance for a period of ten years and shall exhibit the same to, and permit the copying thereof by, any Bondholder or his authorized representative at all reasonable times.

Resignation of Fiscal Agent

The Fiscal Agent may resign and be discharged of the duties created by the General Ordinance by written resignation filed with the Director of Finance not less than 60 days before the date when such resignation is to take effect. Such resignation shall take effect on the day specified in such notice provided that a successor Fiscal Agent is appointed. If a successor Fiscal Agent is appointed prior to the date specified in the notice, the resignation shall take effect immediately on the appointment of such successor, and the City shall give the required notices described under "Appointment of Successor Fiscal Agent" below.

Appointment of Successor Fiscal Agent

If the Fiscal Agent or any successor Fiscal Agent resigns, is replaced, or is dissolved or if its property or business is taken under the control of any state or federal court or administrative body, a vacancy shall exist in the office of the Fiscal Agent, and the City shall appoint a successor within 30 days of such vacancy and shall mail notice of such appointment to the Bondholders and to the registered depositories at their registered addresses by first class mail, postage prepaid, within 30 days of such appointment.

Defaults and Statutory Remedies; Notice to Bondholders

If the City shall fail or neglect to pay or to cause to be paid the principal of, redemption premium, if any, or interest on any Bond or any Series of Bonds issued under the General Ordinance, whether at stated maturity or upon call for prior redemption, or if the City, after written notice to it, shall fail or neglect to make any payment owed by it as a result of a Credit Facility or Qualified Swap entered into with respect to Bonds and the provider of the Credit Facility or the Qualified Swap Provider provides written notification to the Fiscal Agent of such failure or neglect, or if the City shall fail to comply with any provision of any Bonds or with any covenant of the City contained in the General Ordinance, then, under and subject to the terms and conditions stated in the Act, the Holder or Holders of any Bond or Bonds shall be entitled to all of the rights and remedies, including the appointment of a trustee, provided in the Act; provided, however, that the remedy provided in Section 20(b)(4) of the Act may be exercised only upon the failure of the City to pay, when due, principal and redemption price (including principal due as a result of a scheduled mandatory redemption) and interest on a Series of Bonds.

Upon the occurrence of the event of default described above, or if an event occurs which could lead to a default with the passage of time and of which the Fiscal Agent has notice, the Fiscal Agent is required to, within 30 days, give written notice thereof by first-class mail to all Bondholders.

Remedies Not Exclusive; Effect of Delay in Exercise of Remedies

No remedy contained in the General Ordinance or in the Act conferred upon or reserved to the trustee, if any, or to the Holder of any Bond is intended to be exclusive (except as specifically provided in the Act) of any other remedy or remedies, and each and every such remedy shall be cumulative, and shall be in addition to every other remedy given under the General Ordinance or now or hereafter existing at law or in equity or by statute.

No delay or omission of a trustee, if one be appointed pursuant to Section 20 of the Act, or of any Holder of the Bonds to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default, or an acquiescence therein; and every power and remedy provided with respect to an event of default under the General Ordinance, by the Act or otherwise may be exercised from time to time, and as often as may be deemed expedient.

Remedies to be Enforced Only Against Project Revenues

Any decree or judgment for the payment of money against the City by reason of default under the General Ordinance shall be enforceable only against the Project Revenues and the investments thereof and amounts on deposit in the funds and accounts (other than the Rebate Fund) established under the General Ordinance, and no decree or judgment against the City upon an action brought under the General Ordinance shall order or be construed to permit the occupation, attachment, seizure, or sale upon execution of any other property of the City.

Conveyance of System and Assignment, Assumption and Release

The General Ordinance provides that nothing in the General Ordinance is to prevent the City from conveying and assigning to a municipal authority created pursuant to the Municipality Authorities Act of 1945, as amended, or an authority created pursuant to any other applicable statute or to another entity (the "Authority") all or substantially all (or less than substantially all, as provided below) of its right, title and interest in the System and thereupon becoming released from all of its obligations under the General Ordinance, under any Supplemental Ordinance and under the Bonds and related obligations, including, but not limited to, Credit Facilities, Qualified Swaps and Exchange Agreements, (i) if the Authority assumes in writing the City's obligations (1) to operate or cause the System to be operated and to maintain or cause the System to be maintained in good condition; and (2) to pay the principal, redemption premium, if any, and interest on all Bonds issued, and all payments due under Credit Facilities, Qualified Swaps and Exchange Agreements entered into, pursuant to the General Ordinance and then outstanding according to the terms thereof; and (ii) if the instrument of assumption provides the Bondholders or the trustee or entity serving in a similar capacity and acting on behalf of the Bondholders with the substantial equivalent of all of the rights and remedies provided in the General Ordinance and the Act; provided, however, that before the City may consummate such a conveyance and assignment and obtain a release of its obligations under the General Ordinance, under any Supplemental Ordinance and under the Bonds, certain conditions are required to have been satisfied, including, without limitation, (a) the receipt by the City and the Fiscal Agent of certain opinions of counsel, (b) the granting of a security interest by the Authority to the trustee or entity serving in a similar capacity on behalf of the Bondholders, (c) a report of a Consulting Engineer detailing, among other things, continued compliance with covenants relating to Debt Service Requirements and (d) the conveyance and assignment to the Authority of amounts in the funds and accounts established under the General Ordinance. Upon a conveyance of all or substantially all of the assets of the System to the Authority, the General Ordinance provides that the provisions of the General Ordinance are to cease being enforceable against the City.

Amendments and Modifications

In addition to the enactment of Supplemental Ordinances supplementing or amending the General Ordinance in connection with the issuance of successive Series of Bonds, the General Ordinance provides that the General Ordinance and any Supplemental Ordinance may be further supplemented, modified or amended: (a) to cure any ambiguity, formal defect or omission therein or to make such provisions in regard to matters or questions arising thereunder which shall not be inconsistent with the provisions thereof and which shall not adversely affect the interests of Bondholders; (b) to grant to or confer upon Bondholders, or a trustee, if any, for the benefit of Bondholders any additional rights, remedies, powers, authority, or security that may be lawfully granted or conferred; (c) to incorporate modifications requested by any Rating Agency to obtain or maintain a credit rating on any Series of Bonds; (d) to comply with any mandatory provision of state or federal law or with any permissive provision of such law or regulation which does not substantially impair the security or right to payment of the Bonds but no amendment or modification shall be made with respect to any Outstanding Bonds to alter the amount, rate or time of payment, respectively, of the principal thereof or the interest thereon or to alter the redemption provisions thereof without the written consent of the Holders of all affected Outstanding Bonds; and (e) except as aforesaid, in such other respect as may be authorized in writing by the Holders of 67% in principal amount or Original Value in the case of Capital Appreciation Bonds of the Bonds Outstanding and affected. In the case of a Credit Facility or Qualified Swap, if and to the extent provided in the Supplemental Ordinance and Determination of Bonds related thereto, the provider thereof may be the representative of the Bondholders of such Series or portion of such Series for purposes of Bondholder consent, approval or authorization. The written authorization of Bondholders of any supplement to or modification or amendment of the General Ordinance or any Supplemental Ordinance need not approve the particular form of any proposed supplement, modification or amendment but only the substance thereof. Bonds, the payment for which has been provided for upon the redemption thereof, are to be deemed to be not Outstanding.

Deposit of Funds for Payment of Bonds

When interest on, and principal or redemption price (as the case may be) of, all Bonds issued under the General Ordinance, and all amounts owed under any Credit Facility, Qualified Swap and Exchange Agreement entered into under the General Ordinance, have been paid, or there shall have been deposited with the Fiscal Agent or an entity which would qualify as a Fiscal Agent under the General Ordinance an amount, evidenced by moneys or Qualified Escrow Securities the principal of and interest on which, when due, will provide sufficient moneys to fully pay the Bonds at the maturity date or date fixed for redemption thereof, and all amounts owed under any Credit Facility, Qualified Swap and Exchange Agreement entered into under the General Ordinance, the pledge and grant of a security interest in the Project Revenues made under the General Ordinance shall cease and terminate, and the Fiscal Agent and any other depository of funds and accounts established under the General Ordinance shall turn over to the City or to such person, body or authority as may be entitled to receive the same all balances remaining in any such funds and accounts established under the General Ordinance.

If the City deposits with the Fiscal Agent or such other qualified entity moneys or Qualified Escrow Securities sufficient to pay the principal or redemption price of any particular Bond or Bonds becoming due, either at maturity or by call for redemption or otherwise, together with all interest accruing thereon to the due date, interest on the Bond or Bonds shall cease to accrue on the due date and all liability of the City with respect to such Bond or Bonds shall likewise cease, except as provided in the following paragraph. Thereafter such Bond or Bonds shall be deemed not to be outstanding under the General Ordinance and shall have recourse solely and exclusively to the funds so deposited for any claims of whatsoever nature with respect to such Bond or Bonds, and the Fiscal Agent or such other qualified entity shall hold such funds in trust for such Holder or Holders.

Moneys deposited with the Fiscal Agent or such other qualified entity pursuant to the preceding paragraphs which remain unclaimed two years after the date payment thereof becomes due shall, upon written request of the City, if the City is not at the time to the knowledge of the Fiscal Agent or such other qualified entity (the Fiscal Agent having no responsibility to independently investigate), in default with respect to any covenant in the General Ordinance or the Bonds contained, be paid to the City; and the Holders of the Bonds for which the deposit was made shall thereafter be limited to a claim against the City; provided, however, that before making any such payment to the City, the Fiscal Agent or such other qualified entity shall, at the expense of the City, publish in a newspaper of general circulation published in Philadelphia, Pennsylvania, a notice that said moneys remain unclaimed and that, after a date named in said notice, which date shall be not less than 30 days after the date of publication of such notice, the balance of such moneys then unclaimed will be paid to the City.

The provisions regarding the deposit of funds for the payment of Bonds stated above are not be construed to limit the procedure set forth in Section 10 of the Act for calculating the principal or redemption price of and interest on any Bonds for the purpose of ascertaining the sufficiency of revenues for the purpose of Sections 7(a)(5) and 8(a)(iii) of the Act and for the purpose of determining the outstanding net debt of the City if General Obligation Bonds of the City are refunded pursuant to the Act.

Maintenance of Tax Exempt Status of Bonds

No deposit of funds for the payment of bonds shall be made if, in the opinion of Bond Counsel, such action shall cause the interest on any Series of Bonds initially issued as tax exempt Bonds, to become subject to Federal income tax.

Nothing contained in the General Ordinance shall require any Series of Bonds to be structured so that interest on such Bonds will be excluded from income of the Holders thereof for the purpose of calculating Federal income tax; provided that the provisions contained in the General Ordinance are satisfied.

Interested Parties

The General Ordinance provides that nothing in the General Ordinance expressed or implied is intended or is to be construed to confer upon, or to give to, any person or corporation, other than the City, the Owners of the Bonds, the Fiscal Agent, each provider of a Credit Facility, and Qualified Swap, Standby Agreement and Remarketing Agreement, any right, remedy or claim under or by reason of the General Ordinance or any covenants, condition or stipulation thereof; and all the covenants, stipulations, promises and agreements in the General Ordinance contained by and on behalf of the City shall be for the sole and exclusive benefit of the City, the Fiscal Agent, the Owners of the Bonds, each provider of a Credit Facility, Qualified Swap, Standby Agreement and Remarketing Agreement.

Ordinances are Contracts With Bondholders

The General Ordinance and Supplemental Ordinances adopted pursuant to the General Ordinance are contracts with the Holders of all Bonds from time to time Outstanding thereunder and are enforceable in accordance with the provisions of the General Ordinance and the laws of Pennsylvania.

Effectiveness

The General Ordinance provides that it is to become effective as to the holders of Bonds only upon consent in writing of the owners of not less than 67% in principal amount of all Bonds outstanding at the time of such consent.

THE FOURTEENTH SUPPLEMENTAL ORDINANCE

A portion of the Series 2015A Bonds will be issued under and are subject to the Fourteenth Supplemental Ordinance, which supplements the provisions of the General Ordinance. Reference is made below to the Fourteenth Supplemental Ordinance and the General Ordinance, which provide more complete details of the terms of the Series 2015A Bonds. All capitalized and defined terms used in the following summary of the Fourteenth Supplemental Ordinance which are not otherwise defined in this Official Statement are defined as in the General Ordinance.

The Fourteenth Supplemental Ordinance was enacted pursuant to the Act and constitutes a Supplemental Ordinance enacted for the purpose of authorizing one or more Series of Bonds within the meaning of the General Ordinance.

The Fourteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, on behalf of the City, to borrow, from time to time, by the issuance and sale of one or more series or subseries of Bonds, a sum or sums which in aggregate principal amount shall not exceed $450,000,000, exclusive of original issue discount, and in the event such Bonds are issued with original issue discount, the Bond Committee, or a majority of them, is authorized to increase the aggregate principal amount of the Bonds so issued, by the amount of such original issue discount. In accordance with the General Ordinance, the Bond Committee, or a majority of them, shall approve final terms of the Series 2015A Bonds in its Bond Committee

Determination (the "Determination") prior to, and as a condition of issuance of the Series 2015A Bonds. Such Determination shall be deemed a supplement to the Fourteenth Supplemental Ordinance.

The Bond Committee, or a majority of them, is authorized on behalf of the City to enter into agreements specified in the Determination (the "Enhancement Agreements") with any bank, insurance company or other appropriate entity providing credit enhancement or payment or liquidity sources (collectively a "Provider") for the account of the City for the Series 2015A Bonds, including, without limitation, letters of credit, standby bond purchase agreements or other liquidity facilities and bond insurance. Such Enhancement Agreements may provide for payment of the principal or purchase price of, or interest on, the Series 2015A Bonds if the City does not pay the Bonds when due and may provide for repayment with interest to the Provider from the date of such payment.

The Fourteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, or the Director of Finance, as appropriate, to make all such covenants and to take any and all such other actions on behalf of the City as may be necessary or appropriate in connection with the consummation of the transactions contemplated in the Fourteenth Supplemental Ordinance.

The Fourteenth Supplemental Ordinance provides that the Series 2015A Bonds shall be sold either at public competitive sale to the highest bidder or bidders or at a private negotiated sale, as the Bond Committee, or a majority of them, shall determine to be in the best interest of the City. The Bonds may be sold in a single Series or in one or more subseries, as authorized by the General Ordinance and as specified by the Determination, each of which shall be deemed a Series for purposes of the General Ordinance and shall be designated by letter as Series 2015A Bonds, as appropriate and may include serial bonds, terms bonds and Capital Appreciation Bonds, as specified in the Determination.

The Fourteenth Supplemental Ordinance provides that the Series 2015A Bonds shall not pledge the credit or taxing power of the City, or create any debt, charge or lien against the tax, general revenues or property of the City other than the revenues pledged by the General Ordinance.

The Fourteenth Supplemental Ordinance provides that proceeds of the Series 2015A Bonds shall be used to finance: (a) constructing, acquiring, reconstructing and renovating wastewater treatment plants and related facilities and equipment for the sewer system; (b) constructing, acquiring, reconstructing and renovating water treatment plants and related facilities and equipment for the water system; (c) constructing, acquiring, reconstructing and replacing water, wastewater and stormwater pipes, pumping stations and related facilities; (d) constructing, acquiring, reconstructing and renovating stormwater management and mitigation improvements and facilities and other improvements and facilities in furtherance of the City's Combined Sewer Overflow (CSO) Long Term Control Plan Update (referred to as the Green City, Clean Waters Program) dated September 1, 2009, as permitted under the Act and the General Ordinance; (e) purchasing equipment and apparatus of a capital nature for the water and wastewater systems, all as included in the capital budgets of the City; (f) purchasing vehicles that serve the water and wastewater system; (g) if applicable, paying the costs of Enhancement Agreements; (h) paying any other "project costs" as such term is defined in the Act; (i) making the deposits required under the Fourteenth Supplemental Ordinance; and (j) paying the issuance costs of the 2015A Bonds.

Series 2015A Bond proceeds shall be deposited first in the Debt Reserve Account in an amount equal to the Debt Reserve Requirement to the extent that such requirement is not satisfied in whole or in part by available funds of the City or by a surety bond, insurance policy or letter of credit in accordance with the General Ordinance, and all other Series 2015A Bond proceeds and other monies currently on deposit under the General Ordinance, including current reserves and construction funds, shall be deposited or transferred as provided in a certificate of the Director of Finance.

The City covenants in the Fourteenth Supplemental Ordinance that, so long as any Series 2015A Bonds shall remain outstanding, it will make payments or cause payments to be made out of the Sinking Fund established pursuant to the General Ordinance or any of the other Water and Wastewater funds available therefor, at such times and in such amounts as shall be sufficient for the payment of the interest (including the Qualified Swap payments, if any) on the Series 2015A Bonds and the principal thereof when due. Prior to enactment of the Fourteenth Supplemental Ordinance by City Council, an opinion of the City Solicitor was filed with the City Council pursuant to the Act.

The Fourteenth Supplemental Ordinance authorizes the Director of Finance and any other applicable City officer to make such additional covenants and to take such other action with respect to the use and investment of the proceeds of the Series 2015A Bonds as may be necessary or advisable in order that the Series 2015A Bonds shall not be "arbitrage bonds" as defined in Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), that the City will comply with the requirements of Section 148 throughout the term of the Series 2015A Bonds as described in the Determination and in order to effect and maintain (a) the exclusion of interest on the Series 2015A Bonds from gross income for federal income tax purposes, and (b) the receipt of tax credits or subsidies in respect of interest on the Series 2015A Bonds, and further to establish such sub-accounts within the Sinking Fund and terms or restrictions to permit issuance of the Series 2015A Bonds.

The Fourteenth Supplemental Ordinance authorizes the Director of Finance to execute and deliver a Continuing Disclosure Agreement (the "Continuing Disclosure Agreement") meeting the requirements of Rule 15c2-12 promulgated under Securities Exchange Act of 1934. The City covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement.

THE FIFTEENTH SUPPLEMENTAL ORDINANCE

A portion of the Series 2015B Bonds will be issued under and are subject to the Fifteenth Supplemental Ordinance, which supplements the provisions of the General Ordinance. Reference is made below to the Fifteenth Supplemental Ordinance and the General Ordinance, which provide more complete details of the terms of the Series 2015B Bonds. All capitalized and defined terms used in the following summary of the Fifteenth Supplemental Ordinance which are not otherwise defined in this Official Statement are defined as in the General Ordinance.

The Fifteenth Supplemental Ordinance was enacted pursuant to the Act and constitutes a Supplemental Ordinance enacted for the purpose of authorizing one or more Series of Bonds within the meaning of the General Ordinance.

The Fifteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, on behalf of the City, to borrow, from time to time, by the issuance and sale of one or more series or subseries of Bonds, a sum or sums which in aggregate principal amount shall not exceed $240,000,000, exclusive of original issue discount, and in the event such Bonds are issued with original issue discount, the Bond Committee, or a majority of them, is authorized to increase the aggregate principal amount of the Bonds so issued, by the amount of such original issue discount. In accordance with the General Ordinance, the Bond Committee, or a majority of them, shall approve final terms of the Series 2015B Bonds in the Determination prior to, and as a condition of issuance of the Series 2015B Bonds. Such Determination shall be deemed a supplement to the Fifteenth Supplemental Ordinance.

The Bond Committee, or a majority of them, is authorized on behalf of the City to enter into agreements specified in the Determination (the "Enhancement Agreements") with any bank, insurance company or other appropriate entity providing credit enhancement or payment or liquidity sources (collectively a "Provider") for the account of the City for the Series 2015B Bonds, including, without limitation, letters of credit, standby bond purchase agreements or other liquidity facilities and bond insurance. Such Enhancement Agreements may provide for payment of the principal or purchase price of, or interest on, the Series 2015B

Bonds if the City does not pay the Bonds when due and may provide for repayment with interest to the Provider from the date of such payment.

The Fifteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, or the Director of Finance, as appropriate, to make all such covenants and to take any and all such other actions on behalf of the City as may be necessary or appropriate in connection with the consummation of the transactions contemplated in the Fifteenth Supplemental Ordinance.

The Fifteenth Supplemental Ordinance provides that the Series 2015B Bonds shall be sold either at public competitive sale to the highest bidder or bidders or at a private negotiated sale, as the Bond Committee, or a majority of them, shall determine to be in the best interest of the City. The Bonds may be sold in a single Series or in one or more subseries, as authorized by the General Ordinance and as specified by the Determination, each of which shall be deemed a Series for purposes of the General Ordinance and shall be designated by letter as Series 2015B Bonds, as appropriate and may include serial bonds, terms bonds, Capital Appreciation Bonds or derivative financial instruments, as specified in the Determination.

The Fifteenth Supplemental Ordinance provides that the Series 2015B Bonds shall not pledge the credit or taxing power of the City, or create any debt, charge or lien against the tax, general revenues or property of the City other than the revenues pledged by the General Ordinance.

The Fifteenth Supplemental Ordinance provides that proceeds of the Series 2015B Bonds shall be used to finance: (a) the refunding and redemption of all or any portion of the outstanding City of Philadelphia, Pennsylvania, Water and Wastewater Revenue Bonds (the "Refunded Bonds"); (b) if applicable, pay the costs of Enhancement Agreements and/or costs related to any Qualified Swap, including payments required in connection with the termination of all or a portion of a Qualified Swap relating to the Refunded Bonds; (c) pay any other Project Costs as such term is defined in the Act; and (d) pay the issuance costs of the Series 2015B Bonds.

Series 2015B Bond proceeds shall be deposited first in the Debt Reserve Account in an amount equal to the Debt Reserve Requirement to the extent that such requirement is not satisfied in whole or in part by available funds of the City or by a surety bond, insurance policy or letter of credit in accordance with the General Ordinance; all other Series 2015B Bond proceeds and other moneys currently on deposit under the General Ordinance, including current reserves and construction funds, shall be deposited or transferred as provided in a certificate of the Director of Finance.

The City covenants in the Fifteenth Supplemental Ordinance that, so long as any Series 2015B Bonds shall remain outstanding, it will make payments or cause payments to be made out of the Sinking Fund established pursuant to the General Ordinance or any of the other Water and Wastewater funds available therefor, at such times and in such amounts as shall be sufficient for the payment of the interest (including the Qualified Swap payments), if any on the Series 2015B Bonds and the principal thereof when due. Prior to enactment of the Fifteenth Supplemental Ordinance by City Council, an opinion of the City Solicitor was filed with the City Council pursuant to the Act.

The Fifteenth Supplemental Ordinance authorizes the Director of Finance and any other applicable City officer to make such additional covenants and to take such other action with respect to the use and investment of the proceeds of the Series 2015B Bonds as may be necessary or advisable in order that the Series 2015B Bonds shall not be "arbitrage bonds" as defined in Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), that the City will comply with the requirements of Section 148 throughout the term of the Series 2015B Bonds and in order to maintain the exclusion of interest on the Series 2015B Bonds from gross income for federal income tax purposes, and further to establish such sub-accounts within the Sinking Fund and terms or restrictions to permit issuance of the Series 2015B Bonds.

The Fifteenth Supplemental Ordinance authorizes the Director of Finance to execute and deliver a Continuing Disclosure Agreement (the "Continuing Disclosure Agreement") meeting the requirements of Rule 15c2-12 promulgated under Securities Exchange Act of 1934. The City covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement.

THE SIXTEENTH SUPPLEMENTAL ORDINANCE

A portion of the Series 2015B Bonds will be issued under and are subject to the Sixteenth Supplemental Ordinance, which supplements the provisions of the General Ordinance. Reference is made below to the Sixteenth Supplemental Ordinance and the General Ordinance, which provide more complete details of the terms of the Series 2015B Bonds. All capitalized and defined terms used in the following summary of the Sixteenth Supplemental Ordinance which are not otherwise defined in this Official Statement are defined as in the General Ordinance.

The Sixteenth Supplemental Ordinance was enacted pursuant to the Act and constitutes a Supplemental Ordinance enacted for the purpose of authorizing one or more Series of Bonds within the meaning of the General Ordinance.

The Sixteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, on behalf of the City, to borrow, by the issuance and sale of one or more series or subseries of Bonds, a sum or sums which in aggregate principal amount shall not exceed $375,000,000, exclusive of original issue discount, and in the event such Bonds are issued with original issue discount, the Bond Committee, or a majority of them, is authorized to increase the aggregate principal amount of the Bonds so issued, by the amount of such original issue discount. In accordance with the General Ordinance, the Bond Committee, or a majority of them, shall approve final terms of the Series 2015B Bonds in the Determination prior to, and as a condition of issuance of the Series 2015B Bonds. Such Determination shall be deemed a supplement to the Sixteenth Supplemental Ordinance.

The Bond Committee, or a majority of them, is authorized on behalf of the City to enter into agreements specified in the Determination (the "Enhancement Agreements") with any bank, insurance company or other appropriate entity providing credit enhancement or payment or liquidity sources (collectively a "Provider") for the account of the City for the Series 2015B Bonds, including, without limitation, letters of credit, standby bond purchase agreements or other liquidity facilities and bond insurance. Such Enhancement Agreements may provide for payment of the principal or purchase price of, or interest on, the Series 2015B Bonds if the City does not pay the Bonds when due and may provide for repayment with interest to the Provider from the date of such payment.

The Sixteenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, or the Director of Finance, as appropriate, to make all such covenants and to take any and all such other actions on behalf of the City as may be necessary or appropriate in connection with the consummation of the transactions contemplated in the Sixteenth Supplemental Ordinance.

The Sixteenth Supplemental Ordinance provides that the Series 2015B Bonds shall be sold either at public competitive sale to the highest bidder or bidders or at a private negotiated sale, as the Bond Committee, or a majority of them, shall determine to be in the best interest of the City. The Bonds may be sold in a single Series or in one or more subseries, as authorized by the General Ordinance and as specified by the Determination, each of which shall be deemed a Series for purposes of the General Ordinance and shall be designated by letter as Series 2015B Bonds, as appropriate and may include serial bonds, terms bonds, Capital Appreciation Bonds or derivative financial instruments as specified in the Determination.

The Sixteenth Supplemental Ordinance provides that the Series 2015B Bonds shall not pledge the credit or taxing power of the City, or create any debt, charge or lien against the tax, general revenues or property of the City other than the revenues pledged by the General Ordinance.

The Sixteenth Supplemental Ordinance provides that proceeds of the Series 2015B Bonds shall be used to: (a) refund and redeem all or any portion of the outstanding City of Philadelphia, Pennsylvania, Water and Wastewater Revenue Bonds (the "Refunded Bonds"); (b) if applicable, pay the costs of Enhancement Agreements and/or costs related to any Qualified Swap, including payments required in connection with the termination of all or a portion of a Qualified Swap relating to the Refunded Bonds; (c) pay any other Project Costs as such term is defined in the Act; and (d) pay the issuance costs of the Series 2015B Bonds.

Series 2015B Bond proceeds shall be deposited first in the Debt Reserve Account in an amount equal to the Debt Reserve Requirement to the extent that such requirement is not satisfied in whole or in part by available funds of the City or by a surety bond, insurance policy or letter of credit in accordance with the General Ordinance; all other Series 2015B Bond proceeds and other moneys currently on deposit under the General Ordinance, including current reserves and construction funds, shall be deposited or transferred as provided in a certificate of the Director of Finance.

The City covenants in the Sixteenth Supplemental Ordinance that, so long as any Series 2015B Bonds shall remain outstanding, it will make payments or cause payments to be made out of the Sinking Fund established pursuant to the General Ordinance or any of the other Water and Wastewater funds available therefor, at such times and in such amounts as shall be sufficient for the payment of the interest (including the Qualified Swap payments), if any on the Series 2015B Bonds and the principal thereof when due. Prior to enactment of the Sixteenth Supplemental Ordinance by City Council, an opinion of the City Solicitor was filed with the City Council pursuant to the Act.

The Sixteenth Supplemental Ordinance authorizes the Director of Finance and any other applicable City officer to make such additional covenants and to take such other action with respect to the use and investment of the proceeds of the Series 2015B Bonds as may be necessary or advisable in order that the Series 2015B Bonds shall not be "arbitrage bonds" as defined in Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), that the City will comply with the requirements of Section 148 throughout the term of the Series 2015B Bonds and in order to maintain the exclusion of interest on the Series 2015B Bonds from gross income for federal income tax purposes, and further to establish such sub-accounts within the Sinking Fund and terms or restrictions to permit issuance of the Series 2015B Bonds.

The Sixteenth Supplemental Ordinance authorizes the Director of Finance to execute and deliver a Continuing Disclosure Agreement (the "Continuing Disclosure Agreement") meeting the requirements of Rule 15c2-12 promulgated under Securities Exchange Act of 1934. The City covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement.

THE SEVENTEENTH SUPPLEMENTAL ORDINANCE

A portion of the Series 2015A Bonds will be issued under and are subject to the Seventeenth Supplemental Ordinance, which supplements the provisions of the General Ordinance. Reference is made below to the Seventeenth Supplemental Ordinance and the General Ordinance, which provide more complete details of the terms of the Series 2015A Bonds. All capitalized and defined terms used in the following summary of the Seventeenth Supplemental Ordinance which are not otherwise defined in this Official Statement are defined as in the General Ordinance.

The Seventeenth Supplemental Ordinance was enacted pursuant to the Act and constitutes a Supplemental Ordinance enacted for the purpose of authorizing one or more Series of Bonds within the meaning of the General Ordinance.

The Seventeenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, on behalf of the City, to borrow, from time to time, by the issuance and sale of one or more series or subseries of Bonds, a sum or sums which in aggregate principal amount shall not exceed $550,000,000, exclusive of original issue discount, and in the event such Bonds are issued with original issue discount, the Bond

Committee, or a majority of them, is authorized to increase the aggregate principal amount of the Bonds so issued, by the amount of such original issue discount. In accordance with the General Ordinance, the Bond Committee, or a majority of them, shall approve final terms of the Series 2015A Bonds in its Bond Committee Determination (the "Determination") prior to, and as a condition of issuance of the Series 2015A Bonds. Such Determination shall be deemed a supplement to the Seventeenth Supplemental Ordinance.

The Bond Committee, or a majority of them, is authorized on behalf of the City to enter into agreements specified in the Determination (the "Enhancement Agreements") with any bank, insurance company or other appropriate entity providing credit enhancement or payment or liquidity sources (collectively a "Provider") for the account of the City for the Series 2015A Bonds, including, without limitation, letters of credit, standby bond purchase agreements or other liquidity facilities and bond insurance. Such Enhancement Agreements may provide for payment of the principal or purchase price of, or interest on, the Series 2015A Bonds if the City does not pay the Bonds when due and may provide for repayment with interest to the Provider from the date of such payment.

The Seventeenth Supplemental Ordinance authorizes the Bond Committee, or a majority of them, or the Director of Finance, as appropriate, to make all such covenants and to take any and all such other actions on behalf of the City as may be necessary or appropriate in connection with the consummation of the transactions contemplated in the Seventeenth Supplemental Ordinance.

The Seventeenth Supplemental Ordinance provides that the Series 2015A Bonds shall be sold either at public competitive sale to the highest bidder or bidders or at a private negotiated sale, as the Bond Committee, or a majority of them, shall determine to be in the best interest of the City. The Bonds may be sold in a single Series or in one or more subseries, as authorized by the General Ordinance and as specified by the Determination, each of which shall be deemed a Series for purposes of the General Ordinance and shall be designated by letter as Series 2015A Bonds, as appropriate and may include serial bonds, terms bonds, and Capital Appreciation Bonds, as specified in the Determination.

The Seventeenth Supplemental Ordinance provides that the Series 2015A Bonds shall not pledge the credit or taxing power of the City, or create any debt, charge or lien against the tax, general revenues or property of the City other than the revenues pledged by the General Ordinance.

The Seventeenth Supplemental Ordinance provides that proceeds of the Series 2015A Bonds shall be used to finance: (a) constructing, acquiring, reconstructing and renovating wastewater treatment plants and related facilities and equipment for the sewer system; (b) constructing, acquiring, reconstructing and renovating water treatment plants and related facilities and equipment for the water system; (c) constructing, acquiring, reconstructing and replacing water, wastewater and stormwater pipes, pumping stations and related facilities; (d) purchasing equipment and apparatus of a capital nature for the water and wastewater systems; (e) constructing, acquiring, reconstructing and renovating stormwater management and mitigation improvements and facilities and other improvements and facilities in furtherance of the City's Combined Sewer Overflow (CSO) Long Term Control Plan Update (referred to as the Green City, Clean Waters Program) dated September 1, 2009, as permitted under the Act and the General Ordinance; and (f) purchasing vehicles that serve the water and wastewater system, all as included in capital budgets of the City; (g) paying any other Project Costs as such term is defined in the Act; (i) making the deposits required under the Seventeenth Supplemental Ordinance; (h) making the deposits referred to in the Seventeenth Supplemental Ordinance; and (j) paying the issuance costs of the 2015A Bonds.

Series 2015A Bond proceeds shall be deposited first in the Debt Reserve Account in an amount equal to the Debt Reserve Requirement to the extent that such requirement is not satisfied in whole or in part by available funds of the City or by a surety bond, insurance policy or letter of credit in accordance with the General Ordinance, and all other Series 2015A Bond proceeds and other monies currently on deposit under the General Ordinance, including current reserves and construction funds, shall be deposited or transferred as provided in a certificate of the Director of Finance.

The City covenants in the Seventeenth Supplemental Ordinance that, so long as any Series 2015A Bonds shall remain outstanding, it will make payments or cause payments to be made out of the Sinking Fund established pursuant to the General Ordinance or any of the other Water and Wastewater Funds available therefor, at such times and in such amounts as shall be sufficient for the payment of the interest on the Series 2015A Bonds and the principal thereof when due. Prior to enactment of the Seventeenth Supplemental Ordinance by City Council, an opinion of the City Solicitor was filed with the City Council pursuant to the Act.

The Seventeenth Supplemental Ordinance authorizes the Director of Finance and any other applicable City officer to make such additional covenants and to take such other action with respect to the use and investment of the proceeds of the Series 2015A Bonds as may be necessary or advisable in order that the Series 2015A Bonds shall not be "arbitrage bonds" as defined in Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), that the City will comply with the requirements of Section 148 throughout the term of the Series 2015A Bonds as described in the Determination and in order to effect and maintain the exclusion of interest on the Series 2015A Bonds from gross income for federal income tax purposes, and further to establish such sub-accounts within the Sinking Fund and terms or restrictions to permit issuance of the Series 2015A Bonds.

The Seventeenth Supplemental Ordinance authorizes the Director of Finance to execute and deliver a Continuing Disclosure Agreement (the "Continuing Disclosure Agreement") meeting the requirements of Rule 15c2-12 promulgated under Securities Exchange Act of 1934. The City covenants and agrees that it will comply with and carry out all of the provisions of the Continuing Disclosure Agreement.

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APPENDIX IV

GOVERNMENT AND FINANCIAL INFORMATION OF THE CITY OF PHILADELPHIA

The City is not responsible, directly or indirectly, for payments on Water and Waste Water Revenue Bonds, which are secured solely by Project Revenues. This Appendix IV is included for purposes of providing general financial information regarding the City.

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TABLE OF CONTENTS

Page

THE GOVERNMENT OF THE CITY OF PHILADELPHIA

Introduction

The City of Philadelphia (the "City" or "Philadelphia") is located along the southeastern border of the Commonwealth of Pennsylvania (the "Commonwealth" or "Pennsylvania"). The City is the largest city in the Commonwealth and the fifth largest city in the nation with approximately 1,553,165 residents (based on 2013 estimates). The City is also the center of the United States' sixth largest metropolitan statistical area, which is an 11-county area encompassing the City, Camden, NJ, and Wilmington, DE and represents approximately 6,035,000 residents (based on 2013 estimates).

The City benefits from its strategic geographical location, relative affordability, cultural and recreational amenities, and its growing strength in key industries. The City is a business and personal services center with strengths in professional services, such as insurance, law, finance, healthcare and higher education, and leisure and hospitality. The cost of living in the City is relatively moderate compared to other major metropolitan areas in the northeast United States. In addition, the City, as one of the country's education centers, offers the business community a large and diverse labor pool.

The University of Pennsylvania, Temple University, Drexel University, St. Joseph's University, and LaSalle University are well-known institutions of higher education located in the City. There are also a number of colleges and universities located near the City, notably including Villanova University, Bryn Mawr College, Haverford College, Swarthmore College, Lincoln University, and the Camden Campus of Rutgers University, among others.

The City is a center for health, education, research and science facilities. In the City, there are presently more than 30 hospitals, including the Children's Hospital of Philadelphia, Hospital of the University of Pennsylvania, Hahnemann University Hospital, Einstein Medical Center-Philadelphia, and Temple University Hospital, among others, five medical schools, two dental schools, two pharmacy schools, as well as schools of optometry, podiatry and veterinary medicine.

Tourism is important to the City and is driven by the City's extraordinary historic and cultural assets. The City's Historic District, which includes Independence Hall, the Liberty Bell, Carpenters' Hall, Betsy Ross' house and Elfreth's Alley, the nation's oldest residential street, the Parkway District, which includes the Philadelphia Museum of Art, the Barnes Foundation, and the Rodin Museum, and the Avenue of the Arts, located along a mile-long section of South Broad Street between City Hall and Washington Avenue, are key tourist attractions in the City.

For more information on the City's demographic and economic resources and economic development initiatives, see APPENDIX V hereto.

History and Organization

The City was incorporated in 1789 by an Act of the General Assembly of the Commonwealth (the "General Assembly") (predecessors of the City under charters granted by William Penn in his capacity as proprietor of the colony of Pennsylvania may date to as early as 1682). In 1854, the General Assembly, by an act commonly referred to as the Consolidation Act, (i) made the City's boundaries coterminous with the boundaries of Philadelphia County (the same boundaries that exist today) (the "County"), (ii) abolished all governments within these boundaries other than the City and the County, and (iii) consolidated the legislative functions of the City and the County. Article 9, Section 13 of the Pennsylvania Constitution abolished all county offices in the City, provides that the City performs all functions of county government, and states that laws applicable to counties apply to the City.

Since 1952, the City has been governed under a Home Rule Charter authorized by the General Assembly (First Class City Home Rule Act, Act of April 21, 1949, P.L. 665, Section 17) and adopted by the voters of the City (as amended and supplemented, the "City Charter"). The City Charter provides, among other things, for the election, organization, powers and duties of the legislative branch (the "City Council") and the executive and administrative branch, as well as the basic rules governing the City's fiscal and budgetary matters, contracts, procurement, property, and records. Under Article XII of the City Charter, the School District of Philadelphia (the "School District") operates as a separate and independent home rule school district. Certain other constitutional provisions and Commonwealth statutes continue to govern various aspects of the City's affairs, notwithstanding the broad grant of powers of local self-government in relation to municipal functions set forth in the First Class City Home Rule Act.

Under the City Charter, there are two principal governmental entities in the City: (i) the City, which performs municipal and county functions; and (ii) the School District, which has boundaries coterminous with the City and responsibility for all public primary and secondary education.

The court system in the City, consisting of Common Pleas and Municipal Courts, is part of the Commonwealth judicial system. Although judges are paid by the Commonwealth, most other court costs are paid by the City, with partial reimbursement from the Commonwealth.

Elected and Appointed Officials

The Mayor is elected for a term of four years and is eligible to be elected for no more than two successive terms. Each of the seventeen members of City Council is also elected for a four-year term, which runs concurrently with that of the Mayor. There is no limitation on the number of terms that may be served by members of City Council. Of the members of City Council, ten are elected from districts and seven are elected at-large. No more than five of the seven at-large candidates for City Council may be nominated by any party or political body. The District Attorney and the City Controller are elected at the mid-point of the terms of the Mayor and City Council.

The City Controller's responsibilities derive from the City Charter, various City ordinances and state and federal statutes, and contractual arrangements with auditees. The City Controller must follow Generally Accepted Government Auditing Standards, established by the federal Government Accountability Office (formerly known as the General Accounting Office), and Generally Accepted Auditing Standards, promulgated by the American Institute of Certified Public Accountants.

The City Controller post-audits and reports on the City's and the School District's Comprehensive Annual Financial Reports ("CAFRs"), federal assistance received by the City, and the performance of City departments. The City Controller also conducts a pre-audit program of City expenditure documents required to be submitted for approval, such as invoices, payment vouchers, purchase orders and contracts. Documents are selected for audit by category and statistical basis. The Pre-Audit Division verifies that expenditures are authorized and accurate in accordance with the City Charter and other pertinent legal and contractual requirements before any moneys are paid by the City Treasurer. The Pre-Audit Technical Unit, consisting of auditing and engineering staff, inspects and audits capital project design, construction and related expenditures. Other responsibilities of the City Controller include investigation of allegations of fraud, preparation of economic reports, certification of the City's debt capacity and the capital nature and useful life of the capital projects, and opining to the Pennsylvania Intergovernmental Cooperation Authority ("PICA") on the reasonableness of the assumptions and estimates in the City's five-year financial plans.

Under the City Charter, the principal officers of the City's government appointed by the Mayor are the Managing Director of the City (the "Managing Director"), the Director of Finance of the City (the "Director of Finance"), the City Solicitor (the "City Solicitor"), the Director of Commerce (the "Director of Commerce"), and the City Representative (the "City Representative"). In addition to the foregoing principal officers, the

Mayor also utilizes a deputy mayor structure, which includes additional individuals that comprise the Mayor's cabinet.

The Managing Director, in coordination with the Deputy Mayor for Public Safety, the Deputy Mayor for Health and Opportunity, the Deputy Mayor for Transportation and Utilities, the Deputy Mayor for Planning and Economic Development/Director of Commerce, and the Deputy Mayor for Environmental and Community Resources, is responsible for supervising the operating departments and agencies of the City that render the City's various municipal services. The Director of Commerce is charged with the responsibility of promoting and developing commerce and industry. The City Representative is the Ceremonial Representative of the City and especially of the Mayor. The City Representative is charged with the responsibility of giving wide publicity to any items of interest reflecting the activities of the City and its inhabitants, and for the marketing and promotion of the image of the City.

The City Solicitor is head of the Law Department and acts as legal advisor to the Mayor, City Council, and all of the agencies of the City government. The City Solicitor is also responsible for (i) advising on legal matters pertaining to all of the City's contracts and bonds, (ii) assisting City Council, the Mayor, and City agencies in the preparation of ordinances for introduction in City Council, and (iii) conducting litigation involving the City.

The Director of Finance is the chief financial and budget officer of the City and is selected from three names submitted to the Mayor by a Finance Panel, which is comprised of the President of the Philadelphia Clearing House Association, the Chairman of the Philadelphia Chapter of the Pennsylvania Institute of Certified Public Accountants, and the Dean of the Wharton School of Finance and Commerce of the University of Pennsylvania. Under Mayor Nutter's administration, the Director of Finance is responsible for the financial functions of the City, including (i) development of the annual operating budget, the capital budget, and capital program; (ii) the City's program for temporary and long-term borrowing; (iii) supervision of the operating budget's execution; (iv) the collection of revenues through the Department of Revenue; (v) the oversight of pension administration as Chairperson of the Board of Pensions and Retirement; and (vi) the supervision of the Office of Property Assessment. The Director of Finance is also responsible for the appointment and supervision of the City Treasurer, whose office manages the City's debt program and serves as the disbursing agent for the distribution of checks and electronic payments from the City Treasury and the management of cash resources.

The following are brief biographies of Mayor Nutter, his Chief of Staff, the Director of Finance and the City Treasurer:

Michael A. Nutter, Mayor, was sworn in for a second consecutive term on January 2, 2012 as Mayor of his hometown. Born in Philadelphia and educated at the Wharton School at the University of Pennsylvania, Michael Nutter has been committed to public service since his youth in West Philadelphia. Before his election as Mayor, he served almost 15 years on City Council, earning the reputation of a reformer.

In 2008, the Mayor laid out a vision for Philadelphia to focus his administration around five key goals designed to make the City safer, healthier, greener, and more competitive, and to create an ethical government that serves all of its citizens. Philadelphia has made progress on these fronts after weathering the impacts of the recession and the slower than expected economic recovery. The Proposed Twenty-Fourth Five-Year Plan (as defined herein) makes investments to further each of the Mayor's five goals:

- Goal 1: Philadelphia becomes one of the safest cities in America;
- Goal 2: The education and health of Philadelphians improves;
- Goal 3: Philadelphia is a place of choice;

- Goal 4: Philadelphia becomes the greenest and most sustainable city in America; and
- Goal 5: Philadelphia government works efficiently and effectively, with integrity and responsiveness.

Everett A. Gillison, Chief of Staff to the Mayor and Deputy Mayor for Public Safety, was appointed Chief of Staff by Mayor Nutter on October 19, 2011. Mr. Gillison has served as Deputy Mayor for Public Safety since January 7, 2008, and continues in his role as Deputy Mayor for Public Safety in addition to his role as the Mayor's Chief of Staff. Mr. Gillison previously served as a Senior Trial Lawyer for the Defender Association of Philadelphia, where he worked for more than 30 years.

Rob Dubow, Director of Finance, was appointed on January 7, 2008. Prior to his appointment, Mr. Dubow was the Executive Director of PICA. He has also served as Executive Deputy Budget Secretary of the Commonwealth, from 2004 to 2005, and as Budget Director for the City, from 2000 to 2004.

Nancy E. Winkler, City Treasurer, was appointed City Treasurer effective January 31, 2011. Prior to her tenure with the City, Ms. Winkler worked for over 28 years with Public Financial Management (the PFM Group), from 1990 to 2011 as Managing Director, with responsibility to manage the firm's municipal, state and authority practices in New York and Maryland.

Government Services

Municipal services provided by the City include: (i) police and fire protection; (ii) health care; (iii) certain welfare programs; (iv) construction and maintenance of local streets, highways, and bridges; (v) trash collection, disposal and recycling; (vi) provision for recreational programs and facilities; (vii) maintenance and operation of the water and wastewater systems (the "Water and Wastewater Systems"); (viii) acquisition and maintenance of City real and personal property, including vehicles; (ix) maintenance of building codes and regulation of licenses and permits; (x) maintenance of records; (xi) collection of taxes and revenues; (xii) purchase of supplies and equipment; (xiii) construction and maintenance of airport facilities (the "Airport System"); and (xiv) maintenance of a prison system. The City maintains enterprise funds – the Water Fund and the Aviation Fund – for each of the Water and Wastewater Systems and the Airport System. For information on the Water and Wastewater Systems, see APPENDIX V – "KEY CITY-RELATED SERVICES AND BUSINESSES – Water and Wastewater." For information on the Airport System, see APPENDIX V – "ECONOMIC BASE AND EMPLOYMENT – Airport System."

The City owns the assets that comprise the Philadelphia Gas Works ("PGW" or the "Gas Works"). PGW serves residential, commercial, and industrial customers in the City. PGW is operated by Philadelphia Facilities Management Corporation ("PFMC"), a non-profit corporation specifically organized to manage and operate PGW for the benefit of the City.

In 2012, the City engaged a team of legal and financial advisors to assist it with a process to consider the sale of PGW to a private entity. On March 2, 2014, the City, as seller, entered into an agreement, providing for the sale of a portion of the assets that comprise PGW and the transfer of PGW operations to a private entity. Closing on the agreement was subject to authorization by City Council and approval by the Pennsylvania Public Utility Commission ("PUC"), among other things. City Council did not introduce legislation authorizing the sale of PGW or hold hearings on such sale under the terms of the agreement. As a result, the prospective buyer terminated the agreement. Presently, the City does not have plans to sell PGW. The City expects PUC to publish a report in April 2015, which will include information regarding PGW and the foregoing sale process. City Council has also proposed hearings on the future of energy initiatives in the City, including PGW, the first of which was held on March 13, 2015.

For more information on PGW, see "DISCUSSION OF FINANCIAL OPERATIONS – Current Financial Information – Fiscal Year 2015 Adopted Budget," "PGW PENSION PLAN," "PGW OTHER POST-EMPLOYMENT BENEFITS," "EXPENDITURES OF THE CITY – PGW Annual Payments," and "LITIGATION – PGW," among others.

Local Government Agencies

There are a number of governmental authorities and quasi-governmental non-profit corporations that also provide services within the City. Certain of these entities are comprised of governing boards, the members of which are either appointed or nominated, in whole or part, by the Mayor, while others are independent of the Mayor's appointment or recommendation.

Mayoral-Appointed or Nominated Agencies

Philadelphia Industrial Development Corporation and Philadelphia Authority for Industrial Development. The Philadelphia Industrial Development Corporation ("PIDC") and its affiliate, the Philadelphia Authority for Industrial Development ("PAID"), coordinate the City's efforts to maintain an attractive business environment, attract new businesses to the City, and retain existing businesses. Of the 30 members of the board of PIDC, seven are City officers or officials (the Mayor, the Director of Commerce, the President of City Council or a designee, the Chairman of the City Planning Commission, the City Solicitor, the Managing Director, and the Director of Finance), 15 are nominated jointly by the President of the Greater Philadelphia Chamber of Commerce and the Director of Commerce, and eight are nominated by the President of the Greater Philadelphia Chamber of Commerce. The five-member board of PAID is appointed by the Mayor.

Philadelphia Municipal Authority. The Philadelphia Municipal Authority (formerly the Equipment Leasing Authority of Philadelphia) ("PMA") was originally established for the purpose of buying equipment and vehicles to be leased to the City. PMA's powers have been expanded to include any project authorized under applicable law that is specifically authorized by ordinance of City Council. PMA is governed by a five-member board appointed by City Council from nominations made by the Mayor.

Philadelphia Energy Authority. The Philadelphia Energy Authority ("PEA") was established by the City and incorporated in 2011 for the purpose of facilitating and developing energy generation projects, facilitating and developing energy efficiency projects, the purchase or facilitation of energy supply and consumer energy education. PEA is authorized to participate in projects on behalf of the City, other government agencies, institutions and businesses. PEA is governed by a five-member board appointed by City Council from four nominations made by the Mayor and one nomination from City Council.

Philadelphia Redevelopment Authority. The Philadelphia Redevelopment Authority (formerly known as the Redevelopment Authority of the City of Philadelphia) (the "PRA"), supported by federal funds through the City's Community Development Block Grant Fund and by Commonwealth and local funds, is responsible for the redevelopment of the City's blighted areas. PRA is governed by a five-member board appointed by the Mayor.

Philadelphia Land Bank. The Philadelphia Land Bank (the "Land Bank") was created in 2014 with a mission to return vacant and tax delinquent property to productive reuse. The Land Bank is an independent agency formed under the authority of City ordinance and Pennsylvania law. The Land Bank has an 11-member board of directors, of which five are appointed by the Mayor and five are appointed by City Council. The final board member is appointed by a majority vote of the other board members. The City provides funds for its operations.

The Land Bank can: (i) consolidate properties owned by multiple public agencies into single ownership to speed property transfers to new, private owners; (ii) acquire tax-delinquent properties through purchase after tax foreclosure; (iii) clear the title to those properties so that new owners are not burdened by old liens; and (iv) assist in the assemblage and disposition of land for community, nonprofit and for-profit uses.

On October 30, 2014, the Land Bank approved its first proposed strategic plan (the "Strategic Plan"), which identifies market conditions across the City, identifies inventory of vacant and tax delinquent properties that the Land Bank could take in, and sets goals to guide Land Bank activity. Such goals include priority acquisition areas and annual targets against which to measure progress. On December 11, 2014, City Council approved the Strategic Plan. In December, the Mayor and City Council appointed their respective members to the Land Bank's board of directors. The board of directors convened for the first time in late January 2015, appointed the final member of the board, and elected officers.

Philadelphia Housing Authority. The Philadelphia Housing Authority (the "Housing Authority") is a public body organized pursuant to the Housing Authorities Law of the Commonwealth and is neither a department nor an agency of the City. The Housing Authority is the fourth largest public housing authority in the United States and is responsible for developing and managing low and moderate income rental units and limited amounts of for-sale housing in the City. The Housing Authority is also responsible for administering rental subsidies to landlords who rent their units to housing tenants qualified by the Housing Authority for such housing assistance payments. The Housing Authority is governed by a nine member Board of Commissioners, all of whom are appointed by the Mayor with the approval of a majority of the members of City Council. The terms of the Commissioners are concurrent with the term of the appointing Mayor. Two of the members of the Board are required to be Housing Authority residents.

Over 93% of the Housing Authority's annual budget is funded directly or indirectly by the U.S. Department of Housing and Urban Development, and most of the balance of the Housing Authority's budget is derived from resident rent payments. Neither the Housing Authority's funds nor its assets are available to pay City expenses, debts or other obligations, and the City has no power to tax the Housing Authority or its property. Neither the City's funds nor its assets are subject to claims for the expenses, debts or other obligations of the Housing Authority.

Hospitals and Higher Education Facilities Authority of Philadelphia. The Hospitals and Higher Education Facilities Authority of Philadelphia (the "Hospitals Authority") assists non-profit hospitals by financing hospital construction projects. The City does not own or operate any hospitals. The powers of the Hospitals Authority also permit the financing of construction of buildings and facilities for certain colleges and universities and other health care facilities and nursing homes. The Hospitals Authority is governed by a five-member board appointed by City Council from nominations made by the Mayor.

Southeastern Pennsylvania Transportation Authority. The Southeastern Pennsylvania Transportation Authority ("SEPTA"), which is supported by transit revenues and federal, Commonwealth, and local funds, is responsible for developing and operating a comprehensive and coordinated public transportation system in the southeastern Pennsylvania region. Two of the 15 members of SEPTA's board are appointed by the Mayor and confirmed by City Council.

Pennsylvania Convention Center Authority. The Pennsylvania Convention Center Authority (the "Convention Center Authority") constructed and maintains, manages, and operates the Pennsylvania Convention Center, which opened on June 25, 1993. The Pennsylvania Convention Center is owned by the Commonwealth and leased to the Convention Center Authority. An expansion of the Pennsylvania Convention Center was completed in March 2011. This expansion enlarged the Pennsylvania Convention Center to approximately 2,300,000 square feet with the largest contiguous exhibit space in the Northeast, the largest convention center ballroom in the East and the ability to host large tradeshows or two major conventions simultaneously.

Of the 15 members of the board of the Convention Center Authority, two are appointed by the Mayor and one by each of the President and Minority Leader of City Council. The Director of Finance is an ex-officio member of the Board with no voting rights. The Commonwealth, the City and the Convention Center Authority have entered into an operating agreement with respect to the operation and financing of the Pennsylvania Convention Center. In January 2014, SMG began managing and operating the Pennsylvania Convention Center, instituting a number of measures intended to reduce and control show costs and improve customer service.

The School District. The School District was established by the Educational Supplement to the City Charter to provide free public education to the City's residents. Under the City Charter, the School District is governed by the Board of Education of the School District of Philadelphia (the "Board of Education"). During a period of distress following a declaration of financial distress by the Secretary of Education of the Commonwealth, all of the powers and duties of the Board of Education granted under the Public School Code of 1949, as amended (the "School Code") or any other law are suspended and all of such powers and duties are vested in the School Reform Commission (the "School Reform Commission") created pursuant to the School Code. The School Reform Commission is granted all of the powers and duties of the Board of Education by the School Code, as well as all the powers and duties of a board of control under the School Code. The School Reform Commission is responsible for the operation, management and educational program of the School District during such period. It is also responsible for financial matters related to the School District. The School District was declared distressed by the Secretary of Education of the Commonwealth pursuant to the School Code, effective December 22, 2001, and such declaration continues to be in effect.

The School Code provides that the members of the Board of Education continue to serve during the time the School District is governed by the School Reform Commission, and that the establishment of the School Reform Commission may not interfere with the regular selection of the members of the Board of Education. The School Reform Commission may delegate duties to the Board of Education. Two of the five members of the School Reform Commission are appointed by the Mayor and three by the Governor of the Commonwealth, subject to confirmation by the Pennsylvania Senate.

Under the City Charter, the School District's governing body is required to levy taxes annually, within the limits and upon the subject authorized by the General Assembly or City Council, in amounts sufficient to provide for operating expenses, debt service charges, and for the costs of any other services incidental to the operation of public schools. The School District has no independent power to authorize school taxes. Certain financial information regarding the School District is included in the City's CAFR.

Except during a period of distress following a declaration of financial distress by the Secretary of Education of the Commonwealth, as described above, the Board of Education consists of nine members appointed by the Mayor from a list supplied by an Educational Nominating Panel established in accordance with provisions set forth in the City Charter. In some matters, including the incurrence of short-term and long-term debt, the School District is governed primarily by the laws of the Commonwealth. The School District is a separate political subdivision of the Commonwealth, and the City has no property interest in or claim on any revenues or property of the School District.

Non-Mayoral-Appointed or Nominated Agencies

PICA. PICA was created by the Pennsylvania Intergovernmental Cooperation Authority Act for Cities of the First Class (the "PICA Act") in 1991 to provide financial assistance to cities of the first class. The City is the only city of the first class in the Commonwealth. The Governor of Pennsylvania, the President pro tempore of the Pennsylvania Senate, the Minority Leader of the Pennsylvania Senate, the Speaker of the Pennsylvania House of Representatives and the Minority Leader of the Pennsylvania House of Representatives each appoints one voting member of PICA's board. The Secretary of the Budget of the Commonwealth and the Director of Finance of the City serve as ex officio members of PICA's board with no voting rights.

In January 1992, the City and PICA entered into an Intergovernmental Cooperation Agreement (the "PICA Agreement"), pursuant to which PICA agreed to issue bonds from time to time, at the request of the

City, for the purpose of funding, among other things, deficits in the General Fund and a debt service reserve. See "DEBT OF THE CITY – PICA Bonds."

The City is required, on an annual basis for so long as any bonds of PICA remain outstanding, to submit to PICA a five-year financial plan. See "DISCUSSION OF FINANCIAL OPERATIONS – Five-Year Plans of the City" below. The City is also required to make quarterly financial reports to PICA, as further described below under "DISCUSSION OF FINANCIAL OPERATIONS – Quarterly Reporting to PICA."

The PICA Act and the PICA Agreement provide PICA with certain financial and oversight functions. PICA has the power to exercise certain advisory and review procedures with respect to the City's financial affairs, including the power to review and approve the five-year financial plans prepared by the City, and to certify non-compliance by the City with the then-existing five-year plan. PICA is also required to certify non-compliance if, among other things, no approved five-year plan is in place or if the City has failed to file mandatory revisions to an approved five-year plan. Under the PICA Act, any such certification of non-compliance would, upon certification by PICA, require the Secretary of the Budget of the Commonwealth to withhold funds due to the City from the Commonwealth or any of its agencies (including, with certain exceptions, all grants, loans, entitlements and payments payable to the City by the Commonwealth, including payment of the portion of the PICA Tax, as further described under "DEBT OF THE CITY – PICA Bonds" below, otherwise payable to the City).

Philadelphia Parking Authority. The Philadelphia Parking Authority (the "PPA") is responsible for the construction and operation of parking facilities in the City and at Philadelphia International Airport ("PHL") and, by contract with the City, for enforcement of on-street parking regulations. The members of the PPA's board are appointed by the Governor of the Commonwealth, with certain nominations from the General Assembly. For more information on the PPA, see "REVENUES OF THE CITY – Philadelphia Parking Authority Revenues."

DISCUSSION OF FINANCIAL OPERATIONS

Principal Operations

The major financial operations of the City are conducted through the General Fund. In addition to the General Fund, operations of the City are conducted through two other major governmental funds and 19 non-major governmental funds. The City operates on a July 1 to June 30 fiscal year ("Fiscal Year") and reports on all the funds of the City, as well as its component units, in the City's CAFR. PMA's and PICA's financial statements are blended with the City's statements. The financial statements for PGW, PRA, the PPA, the School District, the Community College of Philadelphia, the Community Behavioral Health, Inc., the Delaware River Waterfront Corporation, and PAID are presented discretely.

Fund Accounting

Funds are groupings of activities that enable the City to maintain control over resources that have been segregated for particular purposes or objectives. All of the funds of the City can be divided into three categories: governmental funds, proprietary funds and fiduciary funds.

Governmental Funds. The governmental funds are used to account for the financial activity of the City's basic services, such as: general government; economic and neighborhood development; public health, welfare and safety; cultural and recreational; and streets, highways and sanitation. The funds' financial activities focus on a short-term view of the inflows and outflows of spendable resources, as well as on the balances of spendable resources available at the end of the Fiscal Year. The financial information presented for the governmental funds is useful in evaluating the City's short-term financing requirements.

The City maintains 22 individual governmental funds. The City's CAFRs, including the City's CAFR for Fiscal Year 2014 (the "Fiscal Year 2014 CAFR"), present data separately for the General Fund, Grants Revenue Fund, and Health Choices Behavioral Health Fund, which are considered to be major funds. Data for the remaining 19 funds are combined into a single aggregated presentation.

Proprietary Funds. The proprietary funds are used to account for the financial activity of the City's operations for which customers are charged a user fee; they provide both a long and short-term view of financial information. The City maintains three enterprise funds that are a type of proprietary fund – airport, water and wastewater operations, and industrial land bank.

Fiduciary Funds. The City is the trustee, or fiduciary, for its employees' pension plans. It is also responsible for PGW's employees' retirement reserve assets. Both of these fiduciary activities are reported in the City's CAFRs, including the Fiscal Year 2014 CAFR, as separate financial statements of fiduciary net assets and changes in fiduciary net assets.

See "CITY FINANCES AND FINANCIAL PROCEDURES" for a further description of these governmental, proprietary, and fiduciary funds.

Budget Procedure

At least 90 days before the end of the Fiscal Year, the operating budget for the next Fiscal Year is prepared by the Mayor and submitted to City Council for adoption. The budget, as adopted, must be balanced and provide for discharging any estimated deficit from the current Fiscal Year and make appropriations for all items to be funded with City revenues. The Mayor's budgetary estimates of revenues for the ensuing Fiscal Year and projection of surplus or deficit for the current Fiscal Year may not be altered by City Council. Not later than the passage of the operating budget ordinance, City Council must enact such revenue measures as will, in the opinion of the Mayor, yield sufficient revenues to balance the budget.

At least 30 days before the end of the Fiscal Year, City Council must adopt by ordinance an operating budget and a capital budget for the ensuing Fiscal Year and a capital program for the six ensuing Fiscal Years. If the Mayor disapproves the bills, he must return them to City Council with the reasons for his disapproval at the first meeting thereof held not less than ten days after he receives such bills. If the Mayor does not return the bills within the time required, they become law without his approval. If City Council passes the bills by a vote of two-thirds of all of its members within seven days after the bills have been returned with the Mayor's disapproval, they become law without his approval. While the City Charter requires that City Council adopt the ordinances for the operating and capital budgets at least 30 days before the end of the Fiscal Year, in practice, such ordinances are often adopted after such deadline, but before the end of such Fiscal Year. For example, the City's Fiscal Year 2015 operating budget (the "Fiscal Year 2015 Adopted Budget") was presented to City Council on March 6, 2014, approved by City Council on June 19, 2014, and signed by the Mayor on June 27, 2014.

The capital program is prepared annually by the City Planning Commission to present the capital expenditures planned for each of the six ensuing Fiscal Years, including the estimated total cost of each project and the sources of funding (local, state, federal, and private) estimated to be required to finance each project. The capital program is reviewed by the Mayor and transmitted to City Council for adoption with his recommendation thereon. For Fiscal Year 2015, City Council adopted the Capital Improvement Program for Fiscal Years 2015-2020 on June 19, 2014. An amendment to such program was approved by City Council on October 30, 2014 and signed by the Mayor on November 12, 2014.

The capital budget ordinance, authorizing in detail the capital expenditures to be made or incurred in the ensuing Fiscal Year from City Council appropriated funds, is adopted by City Council concurrently with the capital program. The capital budget must be in full conformity with that part of the capital program applicable to the Fiscal Year that it covers.

For information on the Fiscal Year 2015 Adopted Budget and the Proposed Fiscal Year 2016 Budget (as defined below), see "– Current Financial Information – Fiscal Year 2015 Adopted Budget" and "Proposed Fiscal Year 2016 Budget" below. For a summary of the Mayor's proposed Capital Improvement Program for Fiscal Years 2016-2021 (the "Proposed Capital Improvement Program"), See Table 41.

Budget Stabilization Reserve

In April 2011, the City adopted an amendment to the City Charter that established the "Budget Stabilization Reserve." The City Charter provides that the annual operating budget ordinance is required to provide for appropriations to a Budget Stabilization Reserve, to be created and maintained by the Director of Finance as a separate fund, which may not be commingled with any other funds of the City. Appropriations to the Budget Stabilization Reserve are required to be made each Fiscal Year if the projected General Fund balance for the upcoming Fiscal Year equals or exceeds three percent of General Fund appropriations for such Fiscal Year. City Council can appropriate additional amounts to the Budget Stabilization Reserve by ordinance, no later than at the time of passage of the annual operating budget ordinance and only upon recommendation of the Mayor. Total appropriations to the Budget Stabilization Reserve are subject to a limit of five percent of General Fund appropriations. Amounts in the Budget Stabilization Reserve from the prior Fiscal Years, including any investment earnings certified by the Director of Finance, are to remain on deposit therein.

Since the establishment of the Budget Stabilization Reserve, no budget ordinance has included a provision to fund the Budget Stabilization Reserve because the conditions that would require the funding of such reserve have not been met.

Annual Financial Reports

The City is required by the City Charter to issue, within 120 days after the close of each Fiscal Year, a statement as of the end of the Fiscal Year showing the balances in all funds of the City, the amounts of the City's known liabilities, and such other information as is necessary to furnish a true picture of the City's financial condition (the "Annual Financial Reports"). The Annual Financial Reports, which are released on or about October 28 of each year, are intended to meet these requirements and are unaudited. As described above, the audited financial statements of the City are contained in the CAFR, which is published at a later date. The Annual Financial Reports contain financial statements for all City governmental funds and blended component units presented on the modified accrual basis. The proprietary and fiduciary funds are presented on the full accrual basis. They also contain budgetary comparison schedules for those funds that are subject to an annual budget. The financial statements of the City's discretely presented component units that are available as of the date of the Annual Financial Reports are also presented.

Five-Year Plans of the City

The PICA Act requires the City to annually prepare a financial plan that includes projected revenues and expenditures of the principal operating funds of the City for five Fiscal Years consisting of the current Fiscal Year and the subsequent four Fiscal Years. Each five-year plan, which must be approved by PICA, is required to, among other things, eliminate any projected deficits, balance the Fiscal Year budgets and provide procedures to avoid fiscal emergencies. The City has updated the previous Fiscal Year's five-year plan with the preparation of each new five-year plan. For information on the currently proposed five-year plan, see "– Current Financial Information – Proposed Twenty-Fourth Five-Year Plan" below.

Quarterly Reporting to PICA

The PICA Act requires the City to prepare and submit quarterly reports to PICA so that PICA may determine whether the City is in compliance with the then-current five-year plan. Each quarterly report is required to describe actual or current estimates of revenues, expenditures, and cash flows compared to budgeted revenues, expenditures, and cash flows by covered funds for each month in the previous quarter and for the year-to-date period from the beginning of the then-current Fiscal Year of the City to the last day of the fiscal quarter or month, as the case may be, just ended. Each such report is required to explain any variance existing as of such last day.

Under the PICA Agreement, a "variance" is deemed to have occurred as of the end of a reporting period if (i) a net adverse change in the fund balance of a covered fund (i.e., a principal operating fund) of more than 1% of the revenues budgeted for such fund for that Fiscal Year is reasonably projected to occur, such projection to be calculated from the beginning of the Fiscal Year for the entire Fiscal Year, or (ii) the actual net cash flows of the City for a covered fund are reasonably projected to be less than 95% of the net cash flows of the City for such covered fund for that Fiscal Year originally forecast at the time of adoption of the budget, such projection to be calculated from the beginning of the Fiscal Year for the entire Fiscal Year.

PICA may not take any action with respect to the City for variances if the City: (i) provides a written explanation of the variance that PICA deems reasonable; (ii) proposes remedial action that PICA believes will restore overall compliance with the then-current five-year plan; (iii) provides information in the immediately succeeding quarterly financial report demonstrating to the reasonable satisfaction of PICA that the City is taking remedial action and otherwise complying with the then-current five-year plan; and (iv) submits monthly supplemental reports until it regains compliance with the then-current five-year plan.

PICA last declared a variance in February 2009 and that variance was cured. As of December 31, 2014, PICA has declared no further variances. A failure by the City to explain or remedy a variance would, upon certification by PICA, require the Secretary of the Budget of the Commonwealth to withhold funds due to the City from the Commonwealth or any of its agencies (including, with certain exceptions, all grants, loans, entitlements and payments payable to the City by the Commonwealth, including payment of the portion of the PICA Tax, as further described under "DEBT OF THE CITY – PICA Bonds" below, otherwise payable to the City). The City uses its Quarterly City Manager's Reports to satisfy the quarterly reporting requirement to PICA. Such reports are released within 45 days following the end of the applicable quarter and the most recent versions of such reports are available on the City's Investor Website (as defined herein). The most recent Quarterly City Manager's Report is the report for the period ending December 31, 2014, which was released on February 17, 2015.

Overview of City Response to Economic Downturn

Between October 2008 and December 2011, the City implemented significant actions to balance the budget and its five-year plans, including reducing overtime costs, reducing General Fund full- and part-time employee headcount, implementing a temporary five-year sales tax increase (which expired on June 30, 2014) and a 9.9% Real Estate Tax increase in Fiscal Year 2011, pension funding changes, freezing City funded wage and business tax reductions until Fiscal Year 2014, increasing fees, and instituting spending cuts throughout the City government. During this period of time, the City improved its public safety results due to important changes in policing and largely maintained delivery of its services. The City undertook these measures as a result of the impact of the national and global recession.

Beginning in August 2008, the City began to experience adverse budgetary performance for Fiscal Year 2009 as a result of the recession. In November 2008, the City projected a gap of at least $1 billion over the five-year period covering Fiscal Years 2009-2013, and the City took a series of measures to close the projected gap for Fiscal Years 2009-2013. However, the economy deteriorated further and revenues declined at a greater pace than had been projected, leaving the City with a Fiscal Year 2009 operating deficit of $286.8 million, resulting in a deficit of $236.8 million after prior year net adjustments of $41.8 million and a cumulative adjusted year-end General Fund balance deficit of $137.2 million. Tax receipts continued to display weakness in Fiscal Year 2010, increasing the projected gap for Fiscal Years 2010-2014. In total during the six-year period of Fiscal Years 2009-2014, the projected shortfall was estimated to reach $2.4 billion. As a result of the budgeting measures outlined above, the City had (i) an actual cumulative adjusted year-end General Fund balance deficit of $114.0 million in Fiscal Year 2010, (ii) an actual cumulative adjusted year-end General Fund balance surplus of approximately $92,000 in Fiscal Year 2011, (iii) an actual cumulative adjusted year-end General Fund balance surplus of approximately $146.8 million in Fiscal Year 2012, (iv) an actual cumulative adjusted year-end General Fund balance surplus of $256.9 million in Fiscal Year 2013, and (v) an actual cumulative adjusted year-end General Fund balance surplus of $202.1 million in Fiscal Year 2014. See also Table 1 below.

Summary of Operations

The table on the following page presents the summary of operations for the General Fund for Fiscal Years 2011-2014 (actual) and Fiscal Year 2015 (budgeted and estimated). For a description of the legally enacted basis on which the City's budgetary process accounts for certain transactions, see "CITY FINANCES AND FINANCIAL PROCEDURES – Budgetary Accounting Practices." "Current estimate," as used in the tables and text below, refers to the most recent revised Fiscal Year 2015 estimate, which was published by the City on March 5, 2015.

Table 1
General Fund
Summary of Operations (Legal Basis)
Fiscal Years 2011-2014 (Actual) and 2015 (Budgeted and Estimated)
(Amounts in Millions of USD)[(1), (2)]

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted Budget 2015	Current Estimate 2015
Revenues						
Real Property Taxes[(3)]	482.7	500.7	540.5	526.4	547.4	542.8
Wage and Earnings Tax	1,134.3	1,196.3	1,221.5	1,261.6	1,294.7	1,321.1
Net Profits Tax	8.8	15.1	19.2	16.3	20.5	17.8
Business Income and Receipts Tax[(4)]	376.9	389.4	450.9	461.7	453.2	451.3
Sales Tax[(5)]	244.6	253.5	257.6	263.1	154.6	143.8
Other Taxes[(6)]	211.7	215.4	243.7	266.9	277.9	302.2
Total Taxes	2,459.1	2,570.4	2,733.5	2,795.9	2,748.2	2,778.9
Locally Generated Non-Tax Revenue	280.0	256.7	266.2	301.8	970.7[(7)]	299.2
Revenue from Other Governments[(8), (9), (10)]	1,066.5	715.9	651.5	666.0	638.9	643.0
Receipts from Other City Funds	54.6	48.3	46.8	42.0	67.9	64.2
Total Revenue	3,860.3	3,591.4	3,698.0	3,805.6	4,425.7	3,785.4
Obligations/Appropriations						
Personnel Services	1,360.4	1,319.0	1,362.4	1,450.6	1,433.9	1,494.1
Purchase of Services	1,127.8	760.8	757.8	787.6	814.9	824.0
Materials, Supplies and Equipment	78.3	79.9	85.4	88.8	92.6	94.0
Employee Benefits	967.1	1,066.2	1,119.1	1,194.1	1,817.3[(7)]	1,121.7
Indemnities, Contributions and Refunds[(11)]	111.1	118.0	138.3	208.6	145.2	151.2
City Debt Service[(12)]	110.4	111.3	118.9	122.5	136.6	133.9
Other	0.0	0.0	0.0	0.0	52.8[(13)]	3.4[(13)]
Payments to Other City Funds	30.3	29.5	31.5	34.4	31.2	43.1
Total Obligations/Appropriations	3,785.3	3,484.9	3,613.3	3,886.6	4,524.6	3,865.3
Operating Surplus (Deficit) for the Year	75.0	106.5	84.7	(80.9)	(98.8)	(79.9)
Net Adjustments – Prior Year	39.1	40.2	25.4	26.1	20.4	22.9
Funding for Contingencies	0.0	0.0	0.0	0.0	0.0	0.0
Cumulative Fund Balance Prior Year	(114.0)	0.1	146.8	256.9	146.8	202.1
Cumulative Adjusted Year End Fund Balance (Deficit)	0.1	146.8	256.9	202.1	68.4	145.1

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For Fiscal Year 2015, the Fiscal Year 2015 Adopted Budget and the Proposed Twenty-Fourth Five-Year Plan (as defined herein).
(2) Figures may not add up due to rounding.
(3) The amounts for Fiscal Years 2012 and 2013 reflect a respective 3.9% and 3.6% increase in the Real Estate Tax rate. The amounts for Fiscal Year 2014 and thereafter reflect a reduction in the Real Estate Tax rate, but also an increase in the assessed value of all taxable real property resulting from a citywide property reassessment. See "REVENUES OF THE CITY – Real Property Taxes Assessment and Collection."
(4) As of May 1, 2012, the Business Privilege Tax was renamed the Business Income and Receipts Tax.
(5) The amounts for Fiscal Years 2011-2014 reflect a 1% increase in the City Sales Tax effective October 8, 2009, which expired June 30, 2014. Fiscal Year 2015 figures include remaining 1% City Sales Tax, an additional $15,000,000 for debt service, plus any amounts designated for the Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax".
(6) Includes Amusement Tax, Real Property Transfer Tax, Parking Lot Tax, Smokeless Tobacco Tax and miscellaneous taxes.
(7) The Fiscal Year 2015 Adopted Budget included $700 million from the proposed sale of PGW. See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Government Services" and "– Current Financial Information – Fiscal Year 2015 Adopted Budget."
(8) Includes the PICA Tax of 1.50%, the proceeds of which are remitted to PICA for payment of debt service on PICA bonds and PICA expenses. After paying debt service and expenses, net proceeds from the tax are remitted to the City as Revenue from Other Governments. See "DEBT OF THE CITY – PICA Bonds."
(9) Fiscal Year 2011 was the last year that the full amount of revenue for DHS (as defined herein) was deposited into the General Fund. The decrease in revenues from Fiscal Year 2011 to Fiscal Year 2012 is largely due to the transfer of the majority of DHS revenue and obligations to the Grants Revenue Fund.
(10) Includes state gaming revenues.
(11) Includes contributions to the School District. See also Table 20 and the accompanying text herein.
(12) Excludes PICA bonds. See "DEBT OF THE CITY – PICA Bonds."
(13) The Fiscal Year 2015 Adopted Budget included funding for future contracts with District Council 33, IAFF and FOP, which were settled subsequent to the adoption of such budget. The Proposed Twenty-Fourth Five-Year Plan sets aside $37.9 million for this purpose for Fiscal Years 2015-2020. See "EXPENDITURES OF THE CITY – Overview of Current Labor Situation."

Current Financial Information

Table 2 below shows General Fund balances for Fiscal Year 2014 (actual), Fiscal Year 2015 (adopted budget), Fiscal Year 2015 (current estimate), and Fiscal Year 2016 (proposed budget).

Table 2
General Fund – Fund Balance Summary
(Amounts in Thousands of USD)[1]

	Fiscal Year 2014 Actual[2] (June 30, 2014)	Fiscal Year 2015 Adopted Budget[3] (June 27, 2014)	Fiscal Year 2015 Current Estimate[4] (March 5, 2015)	Fiscal Year 2016 Proposed Budget[5] (March 5, 2015)
REVENUES				
Taxes	$2,795,884	$2,748,205	$2,778,919	$2,856,316
Locally Generated Non - Tax Revenues	301,755	970,712[6]	299,227	275,107
Revenue from Other Governments	666,009	638,912	643,002	655,690
Revenues from Other Funds of City	42,001	67,903	64,249	65,240
Total Revenue	**$3,805,649**	**$4,425,732**[6]	**$3,785,397**	**$3,852,353**
OBLIGATIONS / APPROPRIATIONS				
Personal Services	1,450,615	1,433,919	1,494,136	1,523,139
Personal Services - Employee Benefits	1,194,091	1,817,314[6]	1,121,659	1,172,182
Purchase of Services	787,615	814,898	823,995	831,016
Materials, Supplies and Equipment	88,814	92,612	94,046	96,831
Contributions, Indemnities and Taxes	208,587	145,192	151,167	150,773
Debt Service	122,481	136,578	133,851	141,398
Payments to Other Funds	34,361	31,215	43,055	32,715
Advances & Miscellaneous Payments	0	52,837	3,411	6,907
Total Obligations / Appropriations	**$3,886,564**	**$4,524,565**[6]	**$3,865,320**	**$3,954,961**
Operating Surplus (Deficit)	**(80,915)**	**(98,833)**	**(79,923)**	**(102,608)**
OPERATIONS IN RESPECT TO PRIOR FISCAL YEARS				
Net Adjustments - Prior Years	26,148	20,388	22,885	22,885
Operating Surplus/(Deficit) & Prior Year Adj.	(54,767)	(78,445)	(57,038)	(79,723)
Prior Year Fund Balance	256,902	146,813[7]	202,135	145,097
Year End Fund Balance	**$202,135**	**$68,368**	**$145,097**	**$65,375**

(1) Amounts may not total due to rounding.
(2) From the Fiscal Year 2014 CAFR.
(3) From the Fiscal Year 2015 Adopted Budget.
(4) From the Proposed Twenty-Fourth Five-Year Plan.
(5) From the Proposed Fiscal Year 2016 Budget.
(6) Includes the payment of $700 million to the Municipal Pension Plan from the proceeds of the sale of PGW, which did not occur. See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Government Services" and "– Current Financial Information – Fiscal Year 2015 Adopted Budget."
(7) As of June 27, 2014, the City estimated that Fiscal Year 2014 would end with a General Fund balance of $146.813 million. Upon the release of the Fiscal Year 2014 CAFR, the actual number reported was $202.135 million and such number has been included in the current estimate for Fiscal Year 2015.

Fiscal Year 2015 Adopted Budget. In the Fiscal Year 2015 Adopted Budget, total revenues were estimated to increase due to the inclusion of an estimated $700 million in one-time locally generated non-tax revenues from the proposed sale of PGW. Similarly, total obligations were estimated to increase as a result of an equal one-time expenditure of $700 million to be paid into the Municipal Pension Fund. The sale of PGW did not occur and such revenues and obligations are not included in the current estimate for Fiscal Year 2015. See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Government Services" for more information on PGW.

Fiscal Year 2015 Current Estimate. The current estimate for Fiscal Year 2015 is derived from information included in the City's proposed five-year plan for Fiscal Years 2016-2020 (the "Proposed Twenty-Fourth Five-Year Plan"), which was submitted by the Mayor to City Council on March 5, 2015.

Proposed Fiscal Year 2016 Budget and Proposed Twenty-Fourth Five-Year Plan. The City's proposed Fiscal Year 2016 operating budget (the "Proposed Fiscal Year 2016 Budget") was submitted by the Mayor to City Council on March 5, 2015.

For Fiscal Years 2016-2020, the Proposed Twenty-Fourth Five-Year Plan projects that the City will end such Fiscal Years with General Fund balances (on the legally enacted basis) of $65.4 million (Fiscal Year 2016), $33.2 million (Fiscal Year 2017), $48.3 million (Fiscal Year 2018), $96.2 million (Fiscal Year 2019), and $155.4 million (Fiscal Year 2020). The City continues to face uncertainty regarding the pace of economic growth. The estimated General Fund balances in Fiscal Years 2016-2020, which are low, could lead to financial risk.

Labor Agreements. The Proposed Twenty-Fourth Five-Year Plan set aside $32.7 million for the six-year period (Fiscal Years 2015-2020) for the AFSCME DC 33, Correctional Officers (Local 159) expected arbitration award. On March 23, 2015, an award was issued in the arbitration. The City's preliminary estimates indicate the award would result in additional labor costs of approximately $41.3 million in excess of the assumed $32.7 million. The $41.3 million is the aggregate of approximately $1.1 million in Fiscal Year 2015, $3.8 million in Fiscal Year 2016, and $9.1 million in each of Fiscal Years 2017-2020.

The City is in the process of refining such estimates and determining what adjustments would be made to the current estimates of expenditures and fund balances in Fiscal Year 2015 and Fiscal Years 2016-2020. Without regard to whatever other adjustments may be made to the Fiscal Year 2015 budget and the Proposed Twenty-Fourth Five-Year Plan, the $41.3 million, if considered in isolation, would reduce the projected General Fund balances, for Fiscal Years 2015-2020, to approximately $144.0 million, $60.5 million, $19.2 million, $25.3 million, $64.0 million, and $114.1 million, respectively.

For more information on the City's annual budget process under the City Charter and the five-year financial plans and quarterly reporting required under the PICA Act, see "– Budget Procedure," "– Five-Year Plans of the City," and "– Quarterly Reporting to PICA."

CITY FINANCES AND FINANCIAL PROCEDURES

Except as otherwise noted, the financial statements, tables, statistics, and other information shown below have been prepared by the Office of the Director of Finance and can be reconciled to the financial statements in the Fiscal Year 2014 CAFR and notes therein. The Fiscal Year 2014 CAFR was prepared by the Office of the Director of Finance in conformance with guidelines adopted by the Governmental Accounting Standards Board and the American Institute of Certified Public Accountants' audit guide, Audits of State and Local Government Units.

General

Governmental funds account for their activities using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the City considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures are generally recorded when a liability is incurred, as in the case of full accrual accounting. Debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due; however, those expenditures may be accrued if they are to be liquidated with available resources.

Imposed non-exchange revenues, such as real estate taxes, are recognized when the enforceable legal claim arises and the resources are available. Derived tax revenues, such as wage, Business Income and Receipts Tax ("BIRT"), net profits and earnings taxes, are recognized when the underlying exchange transaction has occurred and the resources are available. Grant revenues are recognized when all the applicable eligibility requirements have been met and the resources are available. All other revenue items are considered to be measurable and available only when cash is received by the City.

Revenue that is considered to be program revenue includes: (i) charges to customers or applicants for goods received, services rendered or privileges provided, (ii) operating grants and contributions, and (iii) capital grants and contributions. Internally dedicated resources are reported as general revenues rather than as program specific revenues; therefore, all taxes are considered general revenues.

The City's financial statements reflect the following three funds as major Governmental Funds:

- The General Fund is the City's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in other funds.

- The Health Choices Behavioral Health Fund accounts for resources received from the Commonwealth. These resources are restricted to providing managed behavioral health care to residents of the City.

- The Grants Revenue Fund accounts for the resources received from various federal, Commonwealth, and private grantor agencies. The resources are restricted to accomplishing the various objectives of the grantor agencies.

In Fiscal Year 2012, the City transferred the majority of the Department of Human Services ("DHS") revenues and obligations to the Grants Revenue Fund.

The City also reports on permanent funds, which are used to account for resources legally held in trust for use by the park and library systems of the City. There are legal restrictions on the resources of the permanent funds that require the principal to remain intact, while only the earnings may be used for the programs.

The City reports on the following fiduciary funds:

- The Municipal Pension Fund accumulates resources to provide pension benefit payments to qualified employees of the City and certain other quasi-governmental organizations.

- The Philadelphia Gas Works Retirement Reserve Fund accounts for contributions made by PGW to provide pension benefit payments to its qualified employees under its pension plan. For more information on the PGW Pension Plan (as defined herein), see "PGW PENSION PLAN."

The City reports on the following major proprietary funds:

- The Water Fund accounts for the activities related to the operation of the Water and Wastewater Systems.

- The Aviation Fund accounts for the activities of the City's airports.

Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's ongoing operations. The principal operating revenues of the Water Fund are charges for water and sewer service. The principal operating revenues of the Aviation Fund are charges for the use of the City's airports. Operating expenses for enterprise funds include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as non-operating revenues and expenses.

Current City Disclosure Practices

It is the City's practice to file its CAFR, which contains the audited combined financial statements of the City, in addition to certain other information, such as the City's bond ratings and information about upcoming debt issuances, with the Municipal Securities Rulemaking Board ("MSRB") as soon as practicable after delivery of such report (but no later than February 25 of each year). The Fiscal Year 2014 CAFR was filed with the MSRB on February 25, 2015, through the MSRB's Electronic Municipal Market Access ("EMMA") system. The Fiscal Year 2014 CAFR is available on the City's investor information website at http://www.phila.gov/investor (the "City's Investor Website").

A wide variety of information concerning the City is available from publications and websites of the City and others, including the City's Investor Website. Any such information that is inconsistent with the information set forth in this Official Statement should be disregarded. No such information is a part of or incorporated into this Official Statement, except as expressly noted.

Independent Audit and Opinion of the City Controller

The City Controller has examined and expressed opinions on the basic financial statements of the City contained in the Fiscal Year 2014 CAFR. The City Controller has not participated in the preparation of this Official Statement nor in the preparation of the budget estimates and projections and cash flow statements and forecasts set forth in various tables contained in this Official Statement. Consequently, the City Controller expresses no opinion with respect to any of the data contained in this Official Statement other than what is contained in the Fiscal Year 2014 CAFR.

Budgetary Accounting Practices

The City's budgetary process accounts for certain transactions on a basis other than generally accepted accounting principles ("GAAP"). In accordance with the City Charter, the City has formally established budgetary accounting control for its operating and capital improvement funds.

The operating funds of the City, consisting of the General Fund, nine Special Revenue Funds (County Liquid Fuels Tax, Special Gasoline Tax, Health Choices Behavioral Health, Hotel Room Rental Tax, Grants Revenue, Community Development, Car Rental Tax, Acute Care Hospital Assessment and Housing Trust Funds) and two Enterprise Funds (Water and Aviation Funds), are subject to annual operating budgets adopted by City Council. These budgets appropriate funds for all City departments, boards and commissions by major class of expenditure within each department. Major classes are defined as: (i) personnel services; (ii) purchase of services; (iii) materials and supplies; (iv) equipment; (v) contributions, indemnities and taxes; (vi) debt service; (vii) payments to other funds; and (viii) advances and other miscellaneous payments. The appropriation amounts for each fund are supported by revenue estimates and take into account the elimination of accumulated deficits and the re-appropriation of accumulated surpluses to the extent necessary. All transfers between major classes (except for materials and supplies and equipment, which are appropriated together) must have City Council approval. Appropriations that are not expended or encumbered at year-end are lapsed.

The City's capital budget is adopted annually by City Council. The capital budget is appropriated by project for each department. Requests to transfer appropriations between projects must be approved by City Council. Any appropriations that are not obligated at year-end are either lapsed or carried forward to the next Fiscal Year.

Schedules prepared on the legally enacted basis differ from the GAAP basis in that both expenditures and encumbrances are applied against the current budget, adjustments affecting activity budgeted in prior years are accounted for through fund balance or as reduction of expenditures and certain interfund transfers and reimbursements are budgeted as revenues and expenditures. The primary difference between the GAAP and legal (budgetary) fund balance is due to the timing of recognizing the BIRT. The legal basis recognizes BIRT revenues in the Fiscal Year they are collected. The GAAP basis requires the City to recognize the BIRT revenues (which are primarily paid in April) for the calendar year in which the BIRT taxes are due, requiring the City to defer a portion of the April payment into the next Fiscal Year. For more information on BIRT, see "REVENUES OF THE CITY – Business Income and Receipts Tax."

REVENUES OF THE CITY

General

Prior to 1939, the City relied heavily on the real estate tax as the mainstay of its revenue system. In 1932, the General Assembly adopted an act (commonly referred to as the Sterling Act) under which the City was permitted to levy any tax that was not specifically pre-empted by the Commonwealth. Acting under the Sterling Act and other legislation, the City has taken various steps over the years to reduce its reliance on real property taxes as a source of income, including: (i) enacting the wage, earnings, and net profits tax in 1939; (ii) introducing a sewer service charge to make the sewage treatment system self-sustaining after 1945; (iii) requiring under the City Charter that the water, sewer, and other utility systems be fully self-sustaining; and (iv) enacting the Mercantile License Tax (a gross receipts tax on business done within the City) in 1952, which was replaced as of the commencement of Fiscal Year 1985 by the Business Privilege Tax (renamed the Business Income and Receipts Tax in May 2012).

Major Revenue Sources

The City derives its revenues primarily from various taxes, non-tax revenues, and receipts from other governments. See Table 3 for General Fund tax revenues for Fiscal Years 2011-2014, as well as the Fiscal Year 2015 Adopted Budget and current estimates for Fiscal Year 2015. The following discussion of the City's revenues does not take into account revenues in the non-debt related funds. The tax rates for Fiscal Years 2011 through 2014 are contained in the Fiscal Year 2014 CAFR.

Table 3
General Fund Tax Revenues
Fiscal Years 2011-2015
(Amounts in Millions of USD) [(1), (2), (3)]

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Adopted Budget 2015	Current Estimate 2015
Real Property Taxes[(4)]	$454.7	$464.4	$504.2	$483.9	$503.2	$498.5
Current	28.0	36.3	36.3	42.5	44.2	44.2
Prior	$482.7	$500.7	$540.5[(4)]	$526.4	$547.4	$542.8
Total						
Wage and Earnings Tax[(5)]						
Current	$1,127.4	$1,192.2	$1,219.5	$1,255.9	$1,290.4	$1,314.6
Prior	6.9	4.1	2.0	5.7	4.3	6.5
Total	$1,134.3	$1,196.3	$1,221.5	$1,261.6	$1,294.7	$1,321.1
Business Taxes						
Business Income and Receipts Tax[(6)] Current & Prior	$376.9	$389.4	$450.9	$461.7	$453.2	$451.3
Net Profits Tax						
Current	$5.7	$12.2	$17.2	$13.2	$18.0	$14.8
Prior	3.1	2.9	1.9	3.1	2.5	3.0
Subtotal Net Profits Tax	8.8	15.1	19.2	16.3	20.5	17.8
Total Business Taxes	$385.7	$404.5	$470.1	$478.0	$473.7	$469.1
Other Taxes						
Sales and Use Tax[(7)]	$244.6	$253.5	$257.6	$263.1	$154.6	$143.8
Amusement Tax	20.8	21.9	19.1	20.0	20.9	20.1
Real Property Transfer Tax	116.6	119.4	148.0	168.1	176.6	201.7
Parking Taxes	71.6	70.9	73.3	75.1	76.9	76.9
Other Taxes	2.7	3.2	3.4	3.7	3.5	3.5
Subtotal Other Taxes	$456.3	$468.9	$501.3	$530.0	$432.5	$446.0
TOTAL TAXES	$2,459.1	$2,570.4	$2,733.5	$2,795.9	$2,748.2	$2,778.9

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For Fiscal Year 2015, the Fiscal Year 2015 Adopted Budget and the Proposed Twenty-Fourth Five-Year Plan.
(2) See Table 7 in the Fiscal Year 2014 CAFR for tax rates.
(3) Figures may not add up due to rounding.
(4) The amounts for Fiscal Years 2012 and 2013 reflect a respective 3.9% and 3.6% increase in the Real Estate Tax rate. The amounts for Fiscal Year 2014 and thereafter reflect a reduction in the Real Estate Tax rate, but also an increase in the assessed value of all taxable real property resulting from a citywide property reassessment. See "– Real Property Taxes Assessment and Collection."
(5) Does not include the PICA Tax of 1.50%, the proceeds of which are remitted to PICA for payment of debt service on PICA bonds and PICA expenses. After paying debt service and expenses, net proceeds from the tax are remitted to the City as Revenue from Other Governments. See "DEBT OF THE CITY – PICA Bonds" for a description of the PICA Tax.
(6) As of May 1, 2012, the Business Privilege Tax was renamed the Business Income and Receipts Tax.
(7) The amounts for Fiscal Years 2011-2014 reflect a 1% increase in the City Sales Tax effective October 8, 2009, which expired June 30, 2014. Fiscal Year 2015 figures include remaining 1% City Sales Tax, an additional $15,000,000 for debt service, plus any amounts designated for the Pension Fund. See "– Sales and Use Tax."

Wage, Earnings, and Net Profits Taxes

The largest tax revenue source (comprising 45.7% of all tax revenues in Fiscal Year 2014) is the wage, earnings and net profits tax. The wage and earnings tax is collected from all employees working within City limits, and all City residents regardless of work location. The net profits tax is collected on the net profits from the operation of a trade, business, profession, enterprise or other activity conducted by individuals, partnerships, associations or estates and trusts within the City limits. The following table sets forth the resident and non-resident wage, earnings and net profits tax rates for Fiscal Years 2011-2015, the annual wage, earnings and net profits tax receipts in Fiscal Years 2011-2014, and the current estimate of such receipts for Fiscal Year 2015.

Table 4
Summary of Wage, Earnings and Net Profits Tax Rates and Receipts
Fiscal Years 2011-2015[1]

Fiscal Year	Resident Wage, Earnings and Net Profits Tax Rates[2]	Non-Resident Wage, Earnings and Net Profits Tax Rates	Annual Wage, Earnings and Net Profits Tax Receipts (including PICA Tax) (Amounts in Millions of USD)[3]
2011	3.9280%	3.4985%	$1,501.8 (Actual)
2012	3.9280%	3.4985%	$1,568.9 (Actual)
2013	3.9280%	3.4985%	$1,617.2 (Actual)
2014	3.9240%	3.4950%	$1,662.3 (Actual)
2015	3.9200%	3.4915%	$1,741.6 (Current Estimate)

[1] See Table 7 in the Fiscal Year 2014 CAFR for tax rates.
[2] Includes PICA Tax. See "DEBT OF THE CITY – PICA Bonds" for a description of the PICA Tax.
[3] Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For Fiscal Year 2015, the Proposed Twenty-Fourth Five-Year Plan.

Commonwealth funding from gaming revenues is mandated by statute to be used to reduce the resident and nonresident wage tax rate. Gaming revenues have averaged approximately $86.27 million in Fiscal Years 2011-2014. The Fiscal Year 2015 Adopted Budget and the current estimate for Fiscal Year 2015 is $86.28 million. The wage tax rates in such Fiscal Years reflect a rate reduction due to these revenues.

See "– Proposed Tax Rate Changes" for information regarding proposed wage and earnings tax rate reductions commencing in Fiscal Year 2016 under the Proposed Twenty-Fourth Five-Year Plan and commencing in Fiscal Year 2017 under the Governor's proposed 2015-2016 budget.

Business Income and Receipts Tax

In 1984, the Commonwealth passed legislation known as The First Class City Business Tax Reform Act of 1984, authorizing City Council to impose a business tax measured by gross receipts, net income or the combination of the two. The same year, the City Council by ordinance repealed the Mercantile License Tax and the General Business Tax and imposed the Business Privilege Tax. As of May 1, 2012, the Business Privilege Tax was renamed the Business Income and Receipts Tax (the "BIRT"). Rental activities are usually considered to be business activities. Every estate or trust (whether the fiduciary is an individual or a corporation) must file a BIRT return if the estate or trust is engaged in any business or activity for profit within the City.

The BIRT allows for particular allocations and tax computations for regulated industries, public utilities, manufacturers, wholesalers and retailers. There are also credit programs where meeting the requirement of the program allows for a credit against the BIRT. All persons subject to both the BIRT and the net profits tax are entitled to apply a credit of 60% of the net income portion of their BIRT liability against what is due on the net profits tax to the maximum of the net profits tax liability for that tax year.

In November 2011, legislation was enacted to halt a previously enacted program of reducing the gross receipts portion of the BIRT and to commence reductions in the net income portion of the BIRT to take effect in tax year 2014 with changes phasing in through tax year 2023. The following table reflects such changes and provides a summary of BIRT rates for tax years 2011-2023. Future scheduled reductions in the net income portion of the BIRT remain subject to amendment by action of City Council and the Mayor.

Table 5
Summary of Business Income and Receipts Tax Rates

Tax Year	Gross Receipts	Net Income
2011	1.415 mills	6.45%
2012	1.415 mills	6.45%
2013	1.415 mills	6.45%
2014	1.415 mills	6.43%
2015	1.415 mills	6.41%
2016	1.415 mills	6.39%
2017	1.415 mills	6.35%
2018	1.415 mills	6.30%
2019	1.415 mills	6.25%
2020	1.415 mills	6.20%
2021	1.415 mills	6.15%
2022	1.415 mills	6.10%
2023	1.415 mills	6.00%

In addition, the 2011 legislation incorporated several changes intended to help small and medium sized businesses and lower costs associated with starting a new business in order to stimulate new business formation and increase employment in the City, including the following: (i) the Commercial Activity License fee for all businesses was eliminated in 2014; (ii) business taxes for the first two years of operations for all new businesses with at least three employees in their first year and six employees in their second year were eliminated beginning in 2012; and (iii) across the board exclusions on the gross receipts portion of the BIRT were provided for all businesses phased in over a three-year period beginning in 2014 and eventually excluding the first $100,000 of gross receipts, along with proportional reductions in the net income portion of the BIRT. The legislation also provides for implementation of single sales factor apportionment in 2015, which enables businesses to pay BIRT based solely on sales in the City, rather than on property or payroll.

The net impact of the 2011 legislative changes has been an estimated decrease in revenues that could have been collected from the BIRT in the amount of $3.2 million in Fiscal Year 2014. In Fiscal Year 2015, such estimated decrease is projected to be $25.2 million, with the amounts of such estimated decreases projected to grow annually through Fiscal Year 2020, for which a $63.4 million estimated decrease is projected. For Fiscal Years 2015-2020, the estimated cumulative decrease in revenues that could have been collected from the BIRT without the above legislative changes is projected to be $308.1 million.

Real Property Taxes Assessment and Collection

A tax is levied on the assessed value of all taxable residential and commercial real property located within the City's boundaries (the "Real Estate Tax") as assessed by the Office of Property Assessment ("OPA") and collected by the Department of Revenue ("Revenue"). Real Estate Taxes are allocated to the City and the School District with the millage split between the two taxes changing over the years.

Beginning in 2010, the City significantly changed the system used for assessing Real Estate Tax in Philadelphia. On May 18, 2010, Philadelphia voters approved an amendment to the City Charter that split the assessment and appeals functions, moving assessment functions into City government into a new agency, OPA, and creating an independent board of appeals, replacing the Board of Revision of Taxes ("BRT") which previously combined both functions. OPA formally took over responsibility for assessments in October 2010. However, the Pennsylvania Supreme Court ruled on September 20, 2010, that without an amendment to state law, the City did not have the authority to replace the BRT in its capacity as an existing appeals board. Therefore, the BRT remains in place as the property assessment appeals board; but the separation of the appeals function from the assessment function, which removed an inherent conflict and was a key goal of the legislation, remains in place. The BRT is an independent, seven-member board appointed by the Board of Judges of the Philadelphia Common Pleas Court.

For tax year 2014, under the Actual Value Initiative ("AVI"), all 579,000 properties in Philadelphia were reassessed at their actual market value by OPA, replacing outdated values and inequities within the system. As the new total assessed value of all properties more accurately reflected the market in Philadelphia, the total assessment grew substantially. As a result, the Mayor and City Council significantly reduced the tax rate to ensure that the reassessment resulted in the collection of approximately the same amount of current year revenue as the prior year (the rates are shown in Table 6 below). Moreover, in order to make the tax bills more understandable, AVI removed the complicated fractional system. Prior to AVI, tax bills were calculated by multiplying the certified market value by an established predetermined ratio ("EPR") multiplied by the tax rate. The last applicable EPR was 32%.

The changes in the system had implications for most property owners in the City. Under the old assessment system, some properties were valued closer to their actual value than other properties. Properties that had been valued closer to their actual value saw relatively smaller increases in assessments and when those assessment changes were coupled with the much lower Real Estate Tax rate, they produced tax decreases. On the other hand, properties that were relatively undervalued saw tax increases, a small number of which were substantial.

In order to mitigate the hardship that could be created by those large increases, the ordinance imposing the new Real Estate Tax rates included a homestead exemption of $30,000 for all primary residential owner-occupants. To date, approximately 75% of all eligible households have received the homestead exemption. Another relief program, known as the Longtime Owner Occupants Program, ("LOOP"), permitted long-term property owners whose property value at least tripled and who met income requirements to pay a reduced Real Estate Tax for 10 years to mitigate any significant increases in their bills. Currently, over 17,500 property owners have participated in the program, with the cost remaining below the legislatively established cap of $20 million. The new Real Estate Tax rates include the impact of the homestead exemption and LOOP.

The Real Estate Tax rates for tax years 2011-2015 are set forth in Table 6 below:

Table 6
Real Estate Tax Rates and Allocations

Tax Year	City	School District	Total
2011	4.123%	4.959%	9.082%
2012	4.123%	5.309%	9.432%
2013	4.462%	5.309%	9.771%
2014[(1)]	0.6018%	0.7382%	1.340%
2015[(1)]	0.6018%	0.7382%	1.340%

[(1)] The reduction of the Real Estate Tax rates for tax years 2014 and 2015 reflect the City's Actual Value Initiative.

Fiscal Year 2015 current Real Estate Tax revenue for the City is projected to be $498.5 million (excluding delinquent collections), higher than the Fiscal Year 2014 actual amount of $484 million.

Table 7 below shows the differences in the assessed values of properties used for tax year 2013 Real Estate Taxes (prior to AVI) and the assessed values used for tax year 2014 and 2015 Real Estate Taxes following the reassessment and implementation of AVI. Prior to AVI, the OPA certified the market values in November in the preceding tax year (that is, for tax year 2013, the OPA certified the market values in November 2012), but following AVI, the OPA certifies the market values by March 31 of the prior year (that is, for tax year 2015, the OPA certified the market values on March 31, 2014). Taxpayers base their appeals on the certified market values, and therefore, the assessed values are adjusted as the appeals are finalized. For budgetary purposes, the OPA provides an updated table to the Office of the Director of Finance in December, from which tax rates are determined.

Table 7
Certified Property Values 2013, 2014 and 2015 and Updated Assessed Property Values for 2015

Tax Year 2013*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$21,257,133,434	$6,802,282,698	$0	448,609
Residential	Abatement	3,038,267,900	172,618,172	799,627,556	15,815
Residential	Exemption	176,246,000	978,711	55,420,009	6,257
Total		**$24,471,647,334**	**$6,975,879,581**	**$855,047,565**	**470,681**
Hotels and Apartments	Fully Taxable	$4,694,682,190	$1,502,298,301	$0	25,974
Hotels and Apartments	Abatement	826,716,800	87,482,601	177,066,775	539
Hotels and Apartments	Exemption	795,158,700	9,424,011	245,026,773	1,121
Total		**$6,316,557,690**	**$1,599,204,913**	**$422,093,548**	**27,634**
Store with Dwelling	Fully Taxable	$933,069,234	$298,582,155	$0	14,736
Store with Dwelling	Abatement	55,627,300	7,937,076	9,863,660	191
Store with Dwelling	Exemption	24,407,800	1,465,872	6,344,624	217
Total		**$1,013,104,334**	**$307,985,103**	**$16,208,284**	**15,144**
Commercial	Fully Taxable	$7,871,193,801	$2,518,782,016	$0	10,649
Commercial	Abatement	1,150,309,400	133,140,564	234,958,444	437
Commercial	Exemption	12,398,611,000	61,299,919	3,906,255,601	4,298
Total		**$21,420,114,201**	**$2,713,222,499**	**$4,141,214,045**	**15,384**
Industrial	Fully Taxable	$1,714,727,400	$548,712,768	$0	4,376
Industrial	Abatement	212,537,100	23,627,281	44,384,591	108
Industrial	Exemption	439,991,100	6,349,937	134,447,215	221
Total		**$2,367,255,600**	**$578,689,986**	**$178,831,806**	**4,705**
Vacant Land	Fully Taxable	$745,426,660	$238,536,531	$0	33,992
Vacant Land	Abatement	510,000	0	163,200	1
Vacant Land	Exemption	480,948,600	2,729,783	151,173,769	12,115
Total		**$1,226,885,260**	**$241,266,314**	**$151,336,969**	**46,108**
Grand Total		**$56,815,564,419**	**$12,416,248,396**	**$5,764,732,217**	**579,656**

*Certified Market Value as of 11/30/2012

Tax Year 2014*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$61,109,079,400	$61,109,079,400	$0	449,977
Residential	Abatement	5,321,882,000	1,006,287,885	4,315,594,115	15,135
Residential	Exemption	600,339,500	9,097,095	591,242,405	6,085
Total		**$67,031,300,900**	**$62,124,464,380**	**$4,906,836,520**	**471,197**
Hotels and Apartments	Fully Taxable	$11,874,704,000	$11,874,704,000	$0	26,015
Hotels and Apartments	Abatement	2,016,286,000	630,265,222	1,386,020,778	531
Hotels and Apartments	Exemption	2,131,041,200	150,488,411	1,980,552,789	1,111
Total		**$16,022,031,200**	**$12,655,457,633**	**$3,366,573,567**	**27,657**
Store with Dwelling	Fully Taxable	$3,292,805,900	$3,292,805,900	$0	14,751
Store with Dwelling	Abatement	111,412,300	49,261,276	62,151,024	190
Store with Dwelling	Exemption	43,773,500	4,063,521	39,709,979	209
Total		**$3,447,991,700**	**$3,346,130,697**	**$101,861,003**	**15,150**
Commercial	Fully Taxable	$15,924,459,700	$15,924,459,700	$0	10,347
Commercial	Abatement	1,645,409,300	749,680,116	895,729,184	413
Commercial	Exemption	26,024,024,400	586,654,681	25,437,369,719	4,281
Total		**$43,593,893,400**	**$17,260,794,497**	**$26,333,098,903**	**15,041**
Industrial	Fully Taxable	$2,751,232,900	$2,751,232,900	$0	4,268
Industrial	Abatement	212,399,700	72,547,530	139,852,170	88
Industrial	Exemption	572,167,700	23,389,866	548,777,834	188
Total		**$3,535,800,300**	**$2,847,170,296**	**$688,630,004**	**4,544**
Vacant Land	Fully Taxable	$1,681,239,900	$1,681,239,900	$0	34,050
Vacant Land	Abatement	3,447,200	62,763	3,384,437	5
Vacant Land	Exemption	2,088,476,400	26,694,608	2,061,781,792	12,054
Total		**$3,773,163,500**	**$1,707,997,271**	**$2,065,166,229**	**46,109**
Grand Total		**$137,404,181,000**	**$99,942,014,774**	**$37,462,166,226**	**579,698**

* Certified Market Value as of 3/31/2013

Tax Year 2015*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$60,857,901,488	$60,857,901,488	$0	450,613
Residential	Abatement	$5,491,428,100	$1,082,840,451	$4,408,587,649	15,575
Residential	Exemption	$606,677,900	$9,683,298	$596,994,602	6,122
Total		**$66,956,007,488**	**$61,950,425,237**	**$5,005,582,251**	**472,310**
Hotels and Apartments	Fully Taxable	$12,137,156,500	$12,137,156,500	$0	25,574
Hotels and Apartments	Abatement	$1,962,493,600	$595,063,304	$1,367,430,296	576
Hotels and Apartments	Exemption	$2,112,930,200	$149,657,172	$1,963,273,028	1,102
Total		**$16,212,580,300**	**$12,881,876,976**	**$3,330,703,324**	**27,252**
Store with Dwelling	Fully Taxable	$3,167,238,700	$3,167,238,700	$0	14,544
Store with Dwelling	Abatement	$97,020,800	$44,216,602	$52,804,198	181
Store with Dwelling	Exemption	$40,883,100	$4,198,242	$36,684,858	199
Total		**$3,305,142,600**	**$3,215,653,544**	**$89,489,056**	**14,924**
Commercial	Fully Taxable	$15,364,630,300	$15,364,630,300	$0	10,150
Commercial	Abatement	$1,619,298,800	$729,888,364	$889,410,436	403
Commercial	Exemption	$25,810,707,200	$566,613,770	$25,244,093,430	4,299
Total		**$42,794,636,300**	**$16,661,132,434**	**$26,133,503,866**	**14,852**
Industrial	Fully Taxable	$2,737,960,700	$2,737,960,700	$0	4,189
Industrial	Abatement	$192,190,700	$70,341,441	$121,849,259	81
Industrial	Exemption	$554,278,000	$23,907,337	$530,370,663	185
Total		**$3,484,429,400**	**$2,832,209,478**	**$652,219,922**	**4,455**
Vacant Land	Fully Taxable	$1,531,824,135	$1,531,824,135	$0	33,983
Vacant Land	Abatement	$22,124,500	$2,134,462	$19,990,038	23
Vacant Land	Exemption	$2,034,115,700	$42,407,110	$1,991,708,590	12,029
Total		**$3,588,064,335**	**$1,576,365,707**	**$2,011,698,628**	**46,035**
Grand Total		**$136,340,860,423**	**$99,117,663,376**	**$37,223,197,047**	**579,828**

*Certified Market Value as of 3/31/2014

Tax Year 2015*

Category	Tax Status	Assessed Value	Taxable Assessed Value	Exempt Assessed Value	Number of Parcels
Residential	Fully Taxable	$57,708,624,701	$57,708,624,701	$0	433,481
Residential	Abatement	5,687,490,200	1,104,887,119	4,582,603,081	16,339
Residential	Exemption	3,481,880,800	1,712,854,043	1,769,026,757	22,825
Total		**$66,877,995,701**	**$60,526,365,863**	**$6,351,629,838**	**472,645**
Hotels and Apartments	Fully Taxable	$11,918,828,800	$11,918,828,800	$0	24,756
Hotels and Apartments	Abatement	2,092,908,500	628,258,095	1,464,650,405	675
Hotels and Apartments	Exemption	2,250,576,300	250,119,472	2,000,456,828	1,749
Total		**$16,262,313,600**	**$12,797,206,367**	**$3,465,107,233**	**27,180**
Store with Dwelling	Fully Taxable	$2,967,777,500	$2,967,777,500	$0	13,819
Store with Dwelling	Abatement	109,779,300	49,870,388	59,908,912	202
Store with Dwelling	Exemption	181,776,600	91,902,692	89,873,908	752
Total		**$3,259,333,400**	**$3,109,550,580**	**$149,782,820**	**14,773**
Commercial	Fully Taxable	$14,849,570,200	$14,849,570,200	$0	10,101
Commercial	Abatement	1,793,745,500	728,806,697	1,064,938,803	420
Commercial	Exemption	25,446,674,700	531,894,525	24,914,780,175	4,327
Total		**$42,089,990,400**	**$16,110,271,422**	**$25,979,718,978**	**14,848**
Industrial	Fully Taxable	$2,723,395,200	$2,723,395,200	$0	4,144
Industrial	Abatement	191,930,300	67,640,941	124,289,359	81
Industrial	Exemption	532,975,000	12,845,366	520,129,634	206
Total		**$3,448,300,500**	**$2,803,881,507**	**$644,418,993**	**4,431**
Vacant Land	Fully Taxable	$1,463,909,135	$1,463,909,135	$0	34,013
Vacant Land	Abatement	9,256,500	1,065,520	8,190,980	36
Vacant Land	Exemption	2,069,084,600	44,144,247	2,024,940,353	12,034
Total		**$3,542,250,235**	**$1,509,118,902**	**$2,033,131,333**	**46,083**
Grand Total		**$135,480,183,836**	**$96,856,394,641**	**$38,623,789,195**	**579,960**

*Data current as of 12/31/2014

As part of the transition to the new assessment system, OPA set up a new process called a first level review ("FLR"), where a taxpayer could request an administrative review of their assessment notice prior to launching a formal appeal with the BRT. For tax year 2014, OPA received 51,301 requests for FLRs. As a result of the FLR process, the total taxable assessed value has been reduced by approximately $1.58 billion as of February 23, 2015; however, approximately 2,000 FLRs have not yet been finalized. The BRT has the authority to increase or decrease the property valuations contained in the return of the assessors in order that such valuations conform with law. After all changes in property assessments, and after all assessment appeals, assessments are certified and the results provided to the Department of Revenue. There have been 24,681 timely formal appeals to the BRT and, as of February 23, 2015, 20,982 appeals have been disposed of by the BRT. The total market value of properties for which appeals have been filed is approximately $17.23 billion, and losses due to market value appeal decisions total approximately $1.36 billion.

For tax year 2015, OPA mailed approximately 3,700 Change of Assessment notices. As of the May 2014 filing deadline, 236 FLRs have been filed. Additionally, 4,638 formal BRT market value appeals have been filed, including a large number of appeals that were filed by taxpayers still awaiting a decision on an outstanding 2014 appeal The 2015 appeals have not been addressed and BRT will begin hearing these in November-December of 2015.

The vast majority of the appeals that have been disposed of by the BRT have involved residential properties with relatively minor assessments at issue. The majority of hearings involving commercial and industrial property appeals are likely to be heard by September 2015. As those appeals compose the vast majority of the total taxable assessed value appealed citywide, an estimate of the effect of these appeals on the total taxable assessed value cannot be made until a larger percentage of the commercial and industrial appeals are resolved.

On October 24, 2012, the Governor approved Act 160 ("Act 160"), which permits downward adjustments to School District property tax and use and occupancy tax rates, solely to offset the higher assessed values anticipated under AVI, and only to the extent the yield from such lower rates is no lower than the highest tax yield in the previous three years. Act 160 also precludes the School District from using its direct authority to levy real estate taxes, separately granted by the General Assembly of the Commonwealth, but only to the extent the City authorizes School District real estate taxes yielding an amount not lower than total real estate taxes yielded in the year prior to the year of the revision of assessments, adjusted to account for increases in assessed value since the first year of revision.

In 2014, City Council passed legislation intended to ease the transition to AVI, which provided, for tax year 2014 only, that residential and commercial property owners who appeal their new property assessments need only pay the prior year's amount of Real Estate Tax and (if applicable) use and occupancy tax, pending the assessment appeal. Interest and penalties would not accrue on the additional 2014 tax liability during the appeal, whether or not the appeal is ultimately successful. The City estimates that it will collect approximately $7.2 million of additional one-time tax revenues from taxpayers who are paying the tax year 2014 amounts along with the tax year 2015 amounts in Fiscal Year 2015.

With AVI, the OPA planned to conduct full reassessments annually; however, staff resources have been redeployed to focus on the large number of appeals. For tax year 2016, OPA is conducting reassessments on properties in areas for which its measurements show that there are larger variations in assessed values than is standard under best assessment practice. In total, OPA will assess approximately 120,000 properties for tax year 2016, but OPA expects that many of those properties will not receive a changed assessment. OPA anticipates doing full reassessments annually beginning in tax year 2017.

Historically, the City did not commence collection of Real Estate Taxes while they were "overdue," between the March 31 due date and January 1 when they became "delinquent". In late 2010, the Department of Revenue sent a letter to taxpayers who had overdue taxes, but had paid all prior years, to explain that if they did not pay by the end of the year, the addition on their Real Estate Tax would be capitalized (i.e. become part of the principal) and their tax liability would become a lien on the property. This effort has been repeated each year since and has resulted in significant collections and reduction of expenses that would otherwise be incurred for further collection efforts. Also in 2012 and 2013, the Department of Revenue and the Law Department hired two outside collection firms to collect overdue Real Estate Taxes with an Outbound Calling Campaign. This project has been extremely successful, contributing to a decrease in first time Real Estate Tax delinquencies and generating a total of approximately $17,000,000 in collections of overdue Real Estate Taxes in 2013 alone. The City is continuing this practice and pursuing a number of other initiatives to improve collections, including sequestration of delinquent properties occupied by commercial tenants.

See Table 8 below for data with respect to Real Estate Taxes levied and collected by the City from 2010 to 2014. See Table 9 for the assessed property values of the City's principal taxable assessed parcels in 2015. See Table 10 for the 2015 market and assessed values of the ten highest valued taxable real properties in the City as well as the amounts and duration of Real Estate Tax abatements with respect to such properties.

Table 8
City of Philadelphia
Real Property Taxes Levied and Collected
For the Calendar Years 2010-2014
(Amounts in Millions of USD)[(1), (2)]

Calendar Year	Taxes Levied Based on Original Assessment[(3)]	Taxes Levied Based on Adjusted Assessment[(4)]	Collections in the Calendar Year of Levy	Percentage Collected in the Calendar Year of Levy	Collections in Subsequent Years[(5)]	Total Collections to Date: All Years	Percentage Collected to Date: All Years[(6)]
2010	$405.8	N/A	$353.7	87.2%	$41.8	$395.5	97.5%
2011	$509.1	N/A	$440.9	86.6%	$44.8	$485.7	95.4%
2012	$508.6	$492.2	$459.2	93.3%	$13.9	$473.1	96.1%
2013	$554.0	$538.0	$505.6	94.0%	$8.3	$513.9	95.5%
2014	$553.2	$535.8	$470.1[(6)]	87.7%[(6), (7)]	N/A	$470.1	87.7%

(1) Source: Fiscal Year 2014 CAFR.

(2) Real Estate Taxes are levied by the City and the School District. While this table reflects City General Fund Real Estate Tax revenues exclusively, the School District Real Estate Tax collection rates are the same.

(3) Taxes are levied on a calendar year basis. They are due on March 31.

(4) Adjustments include assessment appeals, a 1% discount for payment in full by February 28, the senior citizen tax discount, and the tax increment financing return of tax paid. For 2014, adjustment includes the LOOP program since the program was implemented after initial bills were sent.

(5) Includes payments from capitalization charges. This capitalization occurs one time, after the end of the first year of the levy, on any unpaid balances.

(6) Reflects collections through June 30, 2014

(7) Preliminary analysis shows the 2014 calendar year percentage collected as of December 31, 2014 is 91.6% with $482.8 million in payments on an adjusted levy of $527.1 million. Outstanding appeals generated by the AVI initiative have had a significant impact on this collection rate. Adjusting for the appeals the collection rate approaches 93%.

Table 9
Principal Taxable Assessed Parcels – 2015
(Amounts in Millions of USD)

	2015	
Taxpayer	**Assessment[1]**	**Percentage of Total Assessments**
HUB Properties Trust	$265.7	0.27%
Nine Penn Center Associates	232.6	0.24
Phila Liberty Place ELP	207.7	0.21
Philadelphia Market Street	203.7	0.21
Tenet Health Systems Hahnemann	192.1	0.20
Brandywine Cira	182.7	0.19
Commerce Square Partners	178.2	0.18
Maguire / Thomas	170.1	0.17
NNN 1818 Market Street 37	170.0	0.17
Franklin Mills Associates	163.2	0.17
Total	$1,966.0	2.00%
Total Taxable Assessments[2]	$98,370.6	

Source: City of Philadelphia, Office of Property Assessment.

(1) Assessment Values rounded to the nearest $100,000 and only include the largest assessed property for each taxpayer, additional properties owned by the same taxpayer are not included.

(2) Total 2015 Taxable Assessment as of March 31, 2014.

Table 10
Ten Largest Certified Market and Assessment Values of Tax-Abated Properties
Certified Values for 2015
(Amounts in Millions of USD)

Location	2015 Certified Market Value	Total Assessment	Total Taxable Assessment	Total Exempt Assessment	Exempt Thru Tax Year
1701 John F Kennedy Blvd.	$212.5	$212.5	$9.1	$203.4	2017
2929 L Arch St.	$160.7	$160.7	$0.0	$160.7	2015
1001 N Delaware Ave.	$150.9	$150.9	$39.3	$111.6	2020
1500 Spring Garden St.	$138.7	$138.7	$27.8	$110.9	2020
2116 Chestnut St.	$72.5	$72.5	$1.4	$71.1	2023
2323 Race St.	$72.4	$72.4	$2.8	$69.6	2016
2026 – 58 Market St.	$65.0	$65.0	$20.7	$44.3	2023
3401 Chestnut St.	$64.6	$64.6	$3.4	$61.2	2017
1601 N. 15th St.	$64.2	$64.2	$0.5	$63.7	2017
907-37 Market St.	$61.0	$61.0	$41.4	$19.6	2016

Source: City of Philadelphia, Office of Property Assessment.

See "– Proposed Tax Rate Changes" for information regarding a proposed increase in the School District portion of the Real Estate Tax commencing in Fiscal Year 2016 under the Proposed Twenty-Fourth Five-Year Plan and proposed reductions in both the City and School District portion of the Real Estate Tax commencing in Fiscal Year 2017 under the Governor's proposed 2015-2016 budget

Sales and Use Tax

Pursuant to the authorization granted by the Commonwealth under the PICA Act, the City adopted a 1% sales and use tax (the "City Sales Tax") for City general revenue purposes effective beginning in Fiscal Year 1992. It is imposed in addition to, and on the same basis as, the Commonwealth's sales and use tax. Vendors are required to pay City Sales Taxes to the Commonwealth Department of Revenue together with the Commonwealth sales and use tax. The State Treasurer deposits the collections of City Sales Taxes in a special fund and disburses the collections, including any investment income earned thereon, less administrative fees of the Commonwealth Department of Revenue, to the City on a monthly basis.

The City's budgets for Fiscal Years 2010-2014 provided for an increase in the City Sales Tax rate to 2%, as authorized by the Commonwealth effective October 8, 2009, through June 30, 2014. In July 2013, the Commonwealth authorized the implementation of a new, permanent 1% increase in the City Sales Tax rate effective July 1, 2014, which was adopted by the City on June 12, 2014 and became effective on July 1, 2014. Under the reauthorized City Sales Tax, the first $120 million collected from such additional 1% will be distributed to the School District. For Fiscal Years 2015-2018, the General Assembly has also authorized the City to use the next $15 million of City Sales Tax revenues from such additional 1% collected in such Fiscal Years for the payment of debt service on obligations issued by the City for the benefit of the School District. Following any such debt service payments, that remaining portion of the City Sales Tax revenues from such additional 1% distributed to the City is required to be used exclusively in accordance with Act 205 (as defined herein) and deposited to the Municipal Pension Fund.

In October 2014, the City, through PAID, issued its $57,515,000 City Service Agreement Revenue Bonds, Series 2014B ("City Service Agreement Bonds") to fund a portion of the School District's operating deficit for its Fiscal Year 2015 and refund certain outstanding City Service Agreement Bonds. The debt service on the City Service Agreement Bonds is approximately $15 million annually through Fiscal Year 2018 and the City expects to pay its obligations with respect to such bonds with a combination of proceeds from the City Sales Tax revenues and other General Fund revenues. Such City Sales Tax revenues are not pledged to the holders of such bonds. Such funding by the City of a portion of the School District's operating deficit for Fiscal Year 2015, and the related payment of debt service, does not require a comparable increase in grants by the City to the School District in subsequent Fiscal Years. See "EXPENDITURES OF THE CITY – City Payments to School District" and the paragraphs that follow Table 20.

The following table sets forth the City Sales Taxes collected in Fiscal Years 2011 through 2014 and the current estimate for Fiscal Year 2015.

Table 11
Summary of City Sales Tax Collections
(Amounts in Millions of USD)[1]

Fiscal Year	City Sales Tax Collections
2011 (Actual)	$244.6
2012 (Actual)	$253.5
2013 (Actual)	$257.6
2014 (Actual)	$263.1
2015 (Current Estimate)	$143.8[2]

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For the current estimate for Fiscal Year 2015, the Proposed Twenty-Fourth Five-Year Plan.
(2) Net collections estimated to be distributed to the City from the first 1% City Sales Tax and following the distribution of $120 million of revenues from the second 1% City Sales Tax to the School District, as described above.

See "– Proposed Tax Rate Changes" for information regarding a proposed reduction of the City Sales Tax commencing in Fiscal Year 2017 under the Governor's proposed 2015-2016 budget.

Other Taxes

The City also collects real property transfer taxes, parking taxes, amusement tax, valet parking tax, outdoor advertising tax, smokeless tobacco tax and other miscellaneous taxes.

Improved Collection Initiative

The City is pursuing a multifaceted strategy designed to improve collections of various taxes while decreasing delinquencies. Key compliance strategies continue to include revocation of commercial licenses and sequestration, among others.

In addition to compliance efforts, the City is engaged in two active projects to implement technology solutions for its cashiering and payments processing systems and to develop an integrated data warehouse and case management system. These initiatives are designed to improve operational efficiencies and drive compliance efforts by providing tools currently unavailable to the City.

Other Locally Generated Non-Tax Revenues

These revenues include license fees and permit sales, traffic fines and parking meter receipts, court related fees, stadium revenues, interest earnings and other miscellaneous charges and revenues of the City.

Revenue from Other Governments

The following table presents revenues received from other governmental jurisdictions for Fiscal Years 2011-2015 and the percentage such revenues represent in the General Fund. The table does not reflect substantial amounts of revenues from other governments received by the Grants Revenue Fund, Community Development Fund, and other operating and capital funds of the City.

Table 12
Revenue from other Governmental Jurisdictions
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Dollar Amounts in Millions of USD)[(1)]

Fiscal Year	Commonwealth[(2)]	Federal Government	Other Governments[(3), (4)]	Total	Percentage of General Fund Revenues
2011 (Actual)	$833.7	$170.1	$62.7	$1066.5	27.6%
2012 (Actual)[(5)]	536.8	97.0	82.1	715.9	19.9
2013 (Actual)	233.6	39.7	64.2	337.5	9.1
2014 (Actual)	255.3	31.0	61.0	347.3	9.1
2015 (Current Estimate)	216.9	32.1	57.0	306.0	8.0

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For Fiscal Year 2015, the Proposed Fiscal Year 2016 Budget.
(2) Such revenues are for health, welfare, court, and various other specified purposes.
(3) Such revenues primarily consist of payments from PGW, parking fines and fees from PPA.
(4) Does not include the PICA Tax.
(5) Fiscal Year 2011 was the last year that the full amount of revenue for DHS (as defined herein) was deposited into the General Fund. The decrease in revenues from Fiscal Year 2011 to Fiscal Year 2012 is largely due to the transfer of the majority of DHS revenue and obligations to the Grants Revenue Fund.

Revenues from City-Owned Systems

In addition to taxes, the City realizes revenues through the operation of various City-owned systems such as the Water and Wastewater Systems and PGW. The City has issued revenue bonds with respect to the Water and Wastewater Systems and PGW to be paid solely from and secured by a pledge of the respective revenues of these systems. The revenues of the Water and Wastewater Systems and PGW are not legally available for payment of other obligations of the City until, on an annual basis, all revenue bond debt service requirements and covenants relating to those bonds have been satisfied, and then only in a limited amount and upon satisfaction of certain other conditions.

Water Fund. The revenues of the Philadelphia Water Department (the "Water Department") are required to be segregated from other funds of the City. Under the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 (the "Water Ordinance"), an annual transfer may be made from the Water Fund to the City's General Fund in an amount not to exceed the lesser of (i) all Net Reserve Earnings and (ii) $4,994,000. "Net Reserve Earnings" means the amount of interest earnings during the Fiscal Year on amounts in the Debt Reserve Account and Subordinated Bond Fund, each as defined in the Water Ordinance. The following table shows the amounts transferred from the Water Fund to the General Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015.

Table 13
Transfers from Water Fund to General Fund
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)[(1)]

Fiscal Year	Amount Transferred
2011	$1,229,851
2012	$1,086,165
2013	$560,156
2014	$400,364
2015	$800,000

(1) Sources: For Fiscal Years 2011-2014, the Supplemental Report of Revenues & Obligations for such Fiscal Years. For Fiscal Year 2015, the Proposed Fiscal Year 2016 Budget.

PGW. The revenues of PGW are required to be segregated from other funds of the City. Payments for debt service on PGW bonds are made directly by PGW. In certain prior Fiscal Years, PGW made an annual payment of $18 million to the General Fund. PGW made such annual payment in Fiscal Years 2012-2014 and is expected to make such annual payment in Fiscal Year 2015. Revenue estimates contained in the Proposed Twenty-Fourth Five-Year Plan include such $18 million annual payment to the General Fund from PGW for Fiscal Years 2016-2020. For more information on PGW, see "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Government Services" and "DISCUSSION OF FINANCIAL OPERATIONS – Current Financial Information – Fiscal Year 2015 Adopted Budget."

Philadelphia Parking Authority Revenues

The PPA was established by City ordinance pursuant to the Pennsylvania Parking Authority Law (P.L. 458, No. 208 (June 5, 1947)). Various statutes, ordinances, and contracts authorize PPA to plan, design, acquire, hold, construct, improve, maintain and operate, own or lease land and facilities for parking in the City, including such facilities at PHL, and to administer the City's on-street parking program through an Agreement of Cooperation ("Agreement of Cooperation") with the City.

PPA owns and operates five parking garages and a number of surface parking lots at PHL. The land on which these garages and surface lots are located is leased from the City, acting through the Division of Aviation, pursuant to a lease expiring in 2030 (the "Lease Agreement"). The Lease Agreement provides for payment of rent to the City, which is equal to gross receipts less operating expense, debt service on PPA's bonds issued to finance improvements at PHL and reimbursement to PPA for capital expenditures and prior year operating deficits relating to its operations at PHL, if any.

One component of the operating expenses is PPA's administrative costs. In 1999, at the request of the FAA, PPA and the City entered into a letter agreement (the "FAA Letter Agreement"), which contained a formula for calculating PPA's administrative costs and capped such administrative costs at 28% of PPA's total administrative costs for all of its cost centers. PPA owns and/or operates parking facilities at a number of locations in the City in addition to those at PHL. These parking facilities are revenue centers for purposes of the FAA Letter Agreement. According to PPA's audited financial statements, as filed with the City, PPA has been in compliance with the FAA Letter Agreement since its execution.

Pursuant to the Agreement of Cooperation, on-street parking revenues are administered and collected on behalf of the City by the PPA. Pursuant to Pennsylvania law, PPA is to transmit these revenues to the City, net of any actual expenses incurred in the administration of the on-street parking system in accordance with the PPA's approved budget, provided that, should such net revenues exceed a designated threshold, any excess above that threshold is to be transmitted to the School District. Pursuant to Act 84 of 2012, commencing in

Fiscal Year 2015, the threshold, which was previously set at $25 million, is set at $35 million, including a mandatory escalator to take into account increases in revenues. The following table presents payments received by the City from PPA under the Agreement of Cooperation for Fiscal Years 2010-2014.

Table 14
PPA On-Street Parking Payments to the City
Fiscal Years 2010-2014
(Amounts in Millions of USD)[1]

Fiscal Year	Payments to the City
2010	$33.7
2011	$41.6
2012	$37.3
2013	$36.5
2014	$37.7

(1) Sources: City's CAFRs for Fiscal Years 2010-2014.

Proposed Tax Rate Changes

The Proposed Twenty-Fourth Five-Year Plan includes future changes to some of the taxes described above. Also, the Governor's proposed 2015-2016 budget includes additional future changes which are incorporated into the Proposed Twenty-Fourth Five-Year Plan. Such proposed future changes affect the following taxes.

Wage and Earnings Tax. Commencing in Fiscal Year 2016, reductions in both the resident and non-resident wage and earnings tax, which resumed in Fiscal Year 2014 after being suspended during the national economic downturn, are proposed to continue under the Proposed Twenty-Fourth Five-Year Plan. The Governor's proposed 2015-2016 budget would provide for additional reductions beginning in Fiscal Year 2017. The following table details rates under the Proposed Twenty-Fourth Five-Year Plan and under the Governor's proposed 2015-2016 budget.

Table 15
Proposed Future Changes in Wage and Earnings Tax Rates[1]

	Proposed Twenty-Fourth Five-Year Plan		**Governor's Proposed 2015-2016 Budget**	
Fiscal Year	Resident Wage and Earnings Tax Rates[2]	Non-Resident Wage and Earnings Tax Rates	Resident Wage and Earnings Tax Rates[2]	Non-Resident Wage and Earnings Tax Rates
2015	3.9200%	3.4915%	3.9200%	3.4915%
2016	3.9102%	3.4828%	3.9102%	3.4828%
2017	3.9004%	3.4741%	3.4831%	3.1147%
2018	3.8907%	3.4654%	3.4874%	3.1181%
2019	3.8129%	3.3961%	3.4233%	3.0606%
2020	3.7366%	3.3282%	3.3603%	3.0041%

(1) Source: The Proposed Twenty-Fourth Five-Year Plan.
(2) Includes PICA Tax. See "DEBT OF THE CITY – PICA Bonds" for a description of the PICA Tax.

Receipts from the Wage and Earnings Tax, estimated under the Proposed Twenty-Fourth Five-Year Plan to grow at a rate of 4.00% in Fiscal Year 2017 and then 3.00% annually through Fiscal Year 2020, would be reduced under the Governor's proposed 2015-2016 budget; however; the City would be compensated by the Commonwealth for the revenue losses resulting from such reductions, as a result of the other proposed tax changes described below.

Real Estate Tax. Commencing in Fiscal Year 2016 under the Proposed Twenty-Fourth Five-Year Plan, the City proposes to increase the School District portion of the Real Estate Tax in order to provide $105 million in additional revenue for the School District, resulting in an increase in the combined rate from 1.3400% to 1.4651% through Fiscal Year 2020.

In addition to wage and earnings tax relief and sales tax relief, the Governor's proposed 2015-2016 budget provides $87.6 million in property tax relief in Fiscal Year 2017, to be used to increase the amount of the homestead exemption from $30,000 to $56,650, the maximum allowed under Pennsylvania law. Also beginning in Fiscal Year 2017, the Governor's proposed 2015-2016 budget would reduce both the City and School District portion of the Real Estate Tax, resulting in a decrease in the combined rate from 1.4651% to 1.4633% through Fiscal Year 2020. The reduction would be funded annually with $1.7 million from the Commonwealth.

City Sales Tax. Beginning in Fiscal Year 2017, the Governor's proposed 2015-2016 budget would reduce the City Sales Tax from 2.0% to 1.4%, while broadening the categories of transactions that would be subject to the City Sales Tax. Revenue from the first 1.0% would continue to go to the City's General Fund, with the additional revenue generated by the base broadening mandated to be contributed to the Municipal Pension Fund.

Under the Governor's proposed 2015-2016 budget, the Commonwealth would compensate the City for the revenue loss resulting from the 0.6% reduction in the City Sales Tax, as well as for the loss of revenue relating to the 0.6% reduction that would otherwise have been realized by the City from broadening the categories of transactions that would be subject to the City Sales Tax. The reduction in the City Sales Tax, the base broadening and the compensation of the City by the Commonwealth would provide the expected funding for the School District, for the debt service during Fiscal Years 2017 and 2018 on obligations issued by the City for the benefit of the School District, and for contributions by the City to the Municipal Pension Fund.

EXPENDITURES OF THE CITY

Three of the principal City expenditures are for personal services (including pensions and other employee benefits), purchase of services (including payments to SEPTA), and debt service. The expenditures for personal services and purchase of services are addressed below under this caption; debt service is addressed below under "DEBT OF THE CITY."

Personal Services (Personnel)

As of January 2015, the City employed 27,831 full-time employees, representing approximately 4.2% of non-farm public and private employment in the City. Of these full-time public employees, the salaries of 21,015 were paid from the General Fund. Additional sources of funding for full-time public employees include the Grants Fund, the Water Fund and the Aviation Fund, as well as grants and contributions from other governments. Activities funded through such grants and contributions are not undertaken if funding is not received. The following table sets forth the number of filled, full-time positions of the City as of the dates indicated.

Table 16
Filled, Full-Time Positions
Fiscal Year 2011-2014 (Actual) and as of Dec. 31, 2014 (Current Estimate)

	June 30, 2011	June 30, 2012	June 30, 2013	June 30, 2014	Dec. 31, 2014[(1)]
General Fund					
Police	7,219	7,225	7,193	7,095	7,020
Fire	2,146	2,072	2,125	2,053	2,048
Courts	1,869	1,957	1,909	1,866	1,858
Prisons	2,166	2,144	2,248	2,268	2,286
Streets	1,689	1,682	1,690	1,684	1,648
Public Health	661	669	673	659	628
Human Services[(2)]	1,668	804	377	382	439
All Other	4,602	4,622	4,710	4,984	5,088
Total - General Fund	22,020	21,175	20,925	20,991	21,015
Other Funds	4,540	4,540	5,547	5,657	5,626
Total - All Funds	26,560	25,715	26,472	26,648	26,641

(1) Source: Proposed Twenty-Fourth Five-Year Plan.
(2) Fiscal Years 2012-2014 reflect the transfer of the majority of DHS revenue and obligations from the General Fund to the Grants Revenue Fund.

Overview of City Employees

The wages and benefits of City employees vary not only by position, but also by whether the employees are represented by a union and, if so, which union. Employee wages and benefits may also be impacted by whether the employee is subject to the civil service system or exempt from those rules. Thus, City employees may be broken down into three major categories for purposes of understanding how their wages and benefits are determined: (i) employees who are not subject to the civil service system ("exempt employees"); (ii) employees who fall under the civil service system but are not represented by a union ("non-represented employees"); and (iii) employees who are subject to the civil service system and are represented by a union ("union employees").

As of January 2015, the City's 23,071 unionized employees, representing approximately 83% of the City's employees, were represented by the City's four municipal unions: (i) Fraternal Order of Police ("FOP") Lodge No. 5; (ii) International Association of Fire Fighters ("IAFF") Local 22; (iii) American Federation of State, County and Municipal Employees District Council 33 ("AFSCME DC 33"); and (iv) American Federation of State, County and Municipal Employees District Council 47 ("AFSCME DC 47").

Collective bargaining with respect to the wages, hours and other terms and conditions of employment of union employees, other than uniformed employees of the Police Department and the Fire Department, is governed by the Public Employee Relations Act (Pa. P.L. 563, No. 195 (1970)) ("PERA"). PERA requires the City and the unions to negotiate in good faith to attempt to reach agreement on new contract terms and, if an impasse exists after such negotiations, to mediate through the Commonwealth Bureau of Mediation. Once the mediation procedures have been satisfied, and if no collective bargaining agreement has been reached, most employees covered by PERA are permitted to strike.

Certain employees, however, including employees of the Sheriff's Office and the Register of Wills represented by the FOP, corrections officers represented by AFSCME DC 33, and employees of the First Judicial District represented by AFSCME DC 47, are not permitted to strike under PERA. These employees must submit any impasse to binding interest arbitration once the mediation procedures have been satisfied. PERA permits parties at an impasse, which are not required to submit to binding interest arbitration, to do so voluntarily. Provisions of an interest arbitration award issued under PERA that require legislative action are considered advisory only and the legislative body is permitted to meet, consider, and reject those provisions.

Uniformed employees of the Police Department and the Fire Department bargain under the Policemen and Firemen Collective Bargaining Act (Pa. P.L. 237, No. 111 (1968)) ("Act 111"), which provides for final and binding interest arbitration to resolve collective bargaining impasses and prohibits these employees from striking. Interest arbitration under Act 111 operates similarly to interest arbitration under PERA, but City Council is not permitted to reject the portions of an interest arbitration award that require legislative action. To the contrary, City Council is required to pass any legislation necessary to implement the award unless doing so would violate state or federal law. Thus, the arbitration panel has significant, although not limitless, power to issue an award on mandatory subjects of bargaining. As with interest arbitration under PERA, the arbitration panel cannot issue an award on a matter that is one of inherent managerial policy. In addition to the grounds available to challenge a PERA interest arbitration award on appeal, the PICA Act requires an Act 111 interest arbitration panel to, among other things, give substantial weight to the City's five-year plan and ability to pay for the cost of the award without negatively impacting services, and gives the City the right to appeal the award to the Court of Common Pleas if it believes the panel has failed to meet these responsibilities. If the arbitration panel fails to do so or, among other things, if it awards wages or benefits that exceed what is assumed in the most-recent five-year plan without substantial evidence in the record demonstrating that the City can afford these increases without adversely impacting service levels, the Court of Common Pleas is required to vacate the arbitration award and remand it to the arbitration panel.

Overview of Employee Benefits

The City provides various pension, life insurance, and health benefits for its employees. The benefits offered depend on the employee's union status and bargaining unit, if applicable. General Fund employee benefit expenditures for Fiscal Years 2011 through 2015 are shown in the following table.

Table 17
General Fund Employee Benefit Expenditures
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Amounts in Millions of USD)

	2011	2012	2013	2014	2015[1]
Pension Contribution[2]	$485.3	$547.8	$618.9[3]	$646.4[3]	$576.0
Health	343.6	379.4	363.2	409.4	396.4
Social Security	64.6	67.2	64.7	67.5	71.1
Other	73.6	72.0	72.3	70.8	78.2
Total	$967.1	$1,066.4	$1,119.1	$1,194.1	$1,121.7

(1) Source: Proposed Twenty-Fourth Five-Year Plan.
(2) Includes debt service on Pension Bonds (as defined herein).
(3) Includes repayment of deferred contributions. See Table 28.

Each of the City's four municipal unions sponsors its own health plan that provides medical, prescription, dental and optical benefits to participating employees and eligible retirees through trusts on which the City has varying degrees of minority representation. Exempt and non-represented employees, along with represented employees of the Register of Wills and employees represented by AFSCME DC 33 who have chosen not to become members of the union, receive health benefits through a plan sponsored and administered by the City. Each of the plans provides different benefits determined by the plan sponsor or through collective bargaining. In addition, employees who satisfy the eligibility criteria receive five years of health benefits after their retirement. See "OTHER POST-EMPLOYMENT BENEFITS" below. These benefits are determined and administered by the plan in which the employee participated at the time of his or her retirement.

Other employee benefits, including life insurance and paid leave, are similarly determined by the respective collective bargaining agreements and City policies and Civil Service Regulations. Employees also participate in the Municipal Pension Plan. See "PENSION SYSTEM" below.

Overview of Current Labor Situation

Table 18 on the following page summarizes the interest arbitration awards that have been issued and contract settlements reached as of January 2015 and provides an update on the status of negotiations, as well as changes that have been made for exempt and non-represented employees.

Table 18
Status of Arbitration Awards and Labor Contract Settlements as of January 2015

Organization	Authorized Number of Full-Time Citywide Employees Represented	Status of Arbitration Award or Contract Settlement	Wage Increases; Pension revisions[1]
FOP Lodge No. 5 (Police Department)	6,469	Three-year contract effective July 1, 2014 awarded by arbitration panel on July 30, 2014	• 3% pay increase for Fiscal Year 2015. • 3.25% pay increase for Fiscal Years 2016 and 2017.
FOP Lodge No. 5 (Sheriff's Office and Register of Wills)	324	Five-year arbitration award expired June 30, 2014; interest arbitration process for an award to be effective July 1, 2014 is ongoing[2]	• Employees hired after January 1, 2012 must choose between the existing plan and increasing their contribution from 30% to 50% of normal cost, or the City's new hybrid plan. Employees of the Register of Wills are required to enter the hybrid plan.
IAFF Local 22	2,109	Four-year contract effective July 1, 2013 awarded by arbitration panel on January 9, 2015	• 3% pay increase for Fiscal Year 2014 and 2015 • 3.25% pay increase for Fiscal Year 2016. • Wage reopener for Fiscal Year 2017.
AFSCME DC 33	7,973	Contract term from July 1, 2008 through June 30, 2016 ratified September 9, 2014	• 3.5% pay increase effective September 1, 2014. • 2.5% pay increase for Fiscal Year 2016. • Current employees will see their employee pension contributions increase by 1% of pay by January 1, 2016. • Employees hired after September 9, 2014 must choose between the existing plan and increasing their contribution by an additional 1% of pay (in addition to the increases for current employees), or the hybrid plan.
AFSCME DC 33 Correctional Officers	2,221	Three-year award through June 30, 2017	• 3% pay increase for Fiscal Year 2015 • 3.25% pay increase for Fiscal Years 2016 and 2017 • $600 equity adjustment to base wages on January 1, 2016

(1) Pension plans referred to hereunder are further described under "PENSION SYSTEM."
(2) Interest arbitration award covering the employees of the Sheriff's Office and Register of Wills with an effective date of July 1, 2014 is anticipated to be issued no later than April 2015. Although the terms of that award are not yet known, the Proposed Twenty-Fourth Five-Year Plan assumes $5.3 million in increased labor costs associated with such award.

Table 18 (Con't)
Status of Arbitration Awards and Labor Contract Settlements as of January 2015

Organization	Authorized Number of Full-Time Citywide Employees Represented	Status of Arbitration Award or Contract Settlement	Wage Increases; Pension revisions[1]
AFSCME DC 47	3,480	Contract term from July 1, 2009 through June 30, 2017 ratified on March 5, 2014	• 3.5% pay increase effective April 4, 2014. • 2.5% pay increase for Fiscal Year 2016. • 3% pay increase for Fiscal Year 2017. • Current employees will see their employee pension contributions increase by 1% of pay by January 1, 2016. • Employees hired after May 14, 2014 must choose between the existing plan and increasing their contribution by an additional 1% of pay (in addition to the increases for current employees), or the hybrid plan.
AFSCME DC 47 Local 810 Court Employees	495	Agreement ratified August 13, 2014 on economic terms for July 1, 2014 through June 30, 2016	• 2.5% pay increase for Fiscal Year 2015. • 2.5% pay increase for Fiscal Year 2016. • Current employees will see their employee pension contributions increase by 1% of pay by January 1, 2016. • Employees hired after May 14, 2014 must choose between the existing plan and increasing their contribution by an additional 1% of pay (in addition to the increases for current employees), or the hybrid plan.
Exempt and Non-Represented Employees	4,760	September 2012 changes for exempt and non-represented employees	• 2.5% pay increase effective October 1, 2012. • 3.5% pay increase for Fiscal Year 2015. • Current employees pay 30% of normal cost plus 1% of pay by January 1, 2016. • New employees must choose between increasing their contribution by an additional 2% of pay by January 1, 2016, or the hybrid plan

(1) Pension plans referred to hereunder are further described under "PENSION SYSTEM."

Purchase of Services

The following table shows the City's major purchase of services, which represents one of the major classes of expenditures from the General Fund. Table 19 shows contracted costs of the City for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015 and, with the exception of the Convention Center subsidy and vehicle leasing, excludes debt service.

Table 19
Purchase of Services in the General Fund
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Amounts in Millions of USD)[1]

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Current Estimate 2015
Human Services[2]	448.2	78.2	67.5	76.3	77.9
Public Health	66.1	63.0	63.0	60.5	60.1
Public Property[3]	138.7	139.5	139.5	140.7	147.9
Streets[4]	51.0	45.7	40.5	48.3	46.3
Legal Services[5]	36.6	37.1	38.7	40.6	42.6
First Judicial District	27.9	24.1	16.5	15.8	10.7
Licenses & Inspections[6]	4.1	7.0	7.1	10.1	10.0
Supportive Housing[7]	30.2	30.4	34.2	36.9	36.6
Prisons	106.6	104.0	105.4	105.8	105.1
All Other[8]	131.0	142.1	154.4	159.1	175.6
Total	1,040.4	671.1	666.8	694.1	712.8

(1) Sources: For Fiscal Years 2011-2014, the City's Supplemental Report of Revenues & Obligations for such Fiscal Years and the Proposed Fiscal Year 2016 Budget. For the current estimate for Fiscal Year 2015, the Proposed Fiscal Year 2016 Budget.
(2) Includes payments for care of dependent and delinquent children. Fiscal Year 2011 was the last year that the full amount of revenue for DHS was deposited into the General Fund. The decrease in revenues and obligations from Fiscal Year 2011 to Fiscal Year 2012 is largely due to the transfer of the majority of DHS revenue and obligations to the Grants Revenue Fund.
(3) Includes payments for SEPTA, space rentals, and utilities.
(4) Includes solid waste disposal costs.
(5) Includes payments to the Defender Association to provide legal representation for indigents.
(6) Includes payments for demolition in Fiscal Year 2011 and Fiscal Year 2012.
(7) Includes homeless shelter and boarding home payments.
(8) Includes the Convention Center subsidy and payments for vehicle leasing.

Figures may not add up due to rounding.

City Payments to School District

In each Fiscal Year since Fiscal Year 1996, the City has made an annual grant of at least $15 million to the School District. Pursuant to negotiations with the Commonwealth to address the School District's then current and future educational and fiscal situation, the Mayor and City Council agreed to provide the School District with an additional $20 million annual grant beginning in Fiscal Year 2002. The following table presents the City's payments to the School District from the General Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015.

Table 20
City Payments to School District
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Amounts in Millions of USD)[1]

	Actual 2011	Actual 2012	Actual 2013[2]	Actual 2014[3]	Current Estimate 2015
City Payments to School District	$38.6	$48.9	$68.9	$114.1	$69.1

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For the current estimate for Fiscal Year 2015, the Proposed Twenty-Fourth Five-Year Plan.
(2) The City's contribution included a budgeted contribution of $48.9 million and an additional contribution of $20 million, which was derived from an increase in the Real Estate Tax rate.
(3) In Fiscal Year 2014, the City's contribution included a budgeted contribution of $69.1 million and an additional $45.1 million one-time contribution that was passed through from the Commonwealth.

In Fiscal Year 2014, the City also issued, through PAID, $27.3 million of bonds for the benefit of the School District in Fiscal Year 2014. In Fiscal Year 2015, the City issued, through PAID, $57.5 million of bonds for the benefit of the School District and to refund the bonds issued in Fiscal Year 2014.

Section 696 of the School Code imposes on the City a maintenance of effort obligation with respect to the School District. For so long as the School District remains subject to a declaration of "distress" by the Secretary of Education, the City is obligated to continue (i) paying over to the School District each year an amount at least equal to the amount paid over to the School District in the previous year and (ii) authorizing for the School District tax rates at least equal to the rates of taxation authorized by the City for the School District in the previous year. The School District was declared distressed effective December 22, 2001, and such declaration continues to be in effect. See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Local Government Agencies – *Mayoral-Appointed or Nominated Agencies* – The School District."

For a discussion of changes and proposed changes in the funding provided by the City to the School District, see "REVENUES OF THE CITY – Sales and Use Tax." For a discussion of the transition to AVI, see "REVENUES OF THE CITY – Real Property Taxes Assessment and Collection."

City Payments to SEPTA

SEPTA operates a public transportation system within the City and Bucks, Chester, Delaware, and Montgomery counties. SEPTA's operating budget is supported by federal, Commonwealth, and local subsidies, including payments from the City. The following table presents the City's payments to SEPTA from the General Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015.

Table 21
City Payments to SEPTA
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Amounts in Millions of USD)[1]

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Current Estimate 2015
City Payment to SEPTA	$65.9	$66.4	$65.2	$66.0	$70.4

(1) Sources: For Fiscal Years 2011-2014, the City's CAFRs for such Fiscal Years. For the current estimate for Fiscal Year 2015, the Proposed Twenty-Fourth Five-Year Plan.

The City budgets operating subsidies each Fiscal Year to match the estimated operating subsidies of the Commonwealth under Act 89. The state operating subsidy is funded through the Pennsylvania Public Transportation Trust Fund as created by Act 44 of 2007, amended by Act 89 of 2013. The local match requirement for Fiscal Years 2016-2020 has been calculated to match state operating subsidies. In addition, local matching funds must be appropriated each Fiscal Year in which state funds are received in order for SEPTA to receive the full allocation of state funds. The Proposed Twenty-Fourth Five-Year Plan projects operating subsidy payments to SEPTA from the City will increase to $92.5 million by Fiscal Year 2020. For more information on SEPTA, see APPENDIX V – "KEY CITY-RELATED SERVICES AND BUSINESSES – Transportation – SEPTA."

City Payments to Convention Center Authority

In connection with the financing of the expansion to the Pennsylvania Convention Center and the refinancing of debt for the original Pennsylvania Convention Center construction, the Commonwealth, the City, and the Convention Center Authority entered into an operating agreement in 2010 (the "Convention Center Operating Agreement"). The Convention Center Operating Agreement provides for the operation of the Convention Center by the Convention Center Authority and includes an annual service fee of $15,000,000 from the City to the Convention Center Authority in each Fiscal Year through Fiscal Year 2040.

As authorized by ordinance, the City has agreed to pay to the Convention Center Authority on a monthly basis a certain percentage of hotel room taxes and hospitality promotion taxes collected during the term of the Convention Center Operating Agreement. The remaining percentages of such taxes are paid to the City's tourism and marketing agencies. The General Fund does not retain any portion of the proceeds of the hotel room rental tax or the hospitality promotion tax.

PENSION SYSTEM

The amounts and percentages set forth under this heading relating to the City's pension system, including, for example, actuarial liabilities and funded ratios, are based upon numerous demographic and economic assumptions, including the investment return rates, inflation rates, salary increase rates, post-retirement mortality, active member mortality, rates of retirement, etc. The reader is cautioned to review and carefully consider the assumptions set forth in the documents that are cited as the sources for the information in this section. In addition, the reader is cautioned that such sources and the underlying assumptions speak as of their respective dates, and are subject to changes, any of which could cause a significant change in the unfunded actuarial liability.

Overview

The City faces significant ongoing financial challenges in meeting its pension obligations, including an unfunded actuarial liability ("UAL") of approximately $5.7 billion as of July 1, 2014. In Fiscal Year 2014, the City's contribution to the Municipal Pension Fund was approximately $553.2 million, of which the General Fund's share was $463.8 million. The City's aggregate pension costs (consisting of payments to the Municipal Pension Fund and debt service on the Pension Bonds) have increased from approximately 7% of the City's General Fund budget to approximately 15% of the General Fund budget from Fiscal Years 2005 to 2014. See Table 28 below. As reflected in the Funded Ratio chart following Table 26, the funded ratio of the Municipal Pension Plan was 47.7% on July 1, 1995 (at which time the UAL was approximately $2.5 billion), and was 45.8% on July 1, 2014.

The growth in the UAL is the product of a number of factors, including the following:

- The decline in the equity markets in 2008-2009. See Table 22.

- A reduction in the assumed rate of return, from 9.00% in 2004 to 7.80% effective July 1, 2014. Although the gradual reductions in the assumed rates of return reflected in Table 22 are considered a prudent response to experience studies, by reducing the assumed return in the measurement of the actuarial liabilities, it serves to increase the UAL from what it otherwise would have been.

- Adopting more conservative mortality rates in response to experience studies performed by the Municipal Pension Plan actuary.

- The Municipal Pension Plan is a mature system, with the result that the number of members making contributions to the Municipal Pension Plan is less than the number of retirees and other beneficiaries receiving payments from the Municipal Pension Plan by approximately 10,700.

- The determination by the City, commencing in Fiscal Year 2005, to fund in accordance with the "minimum municipal obligation" ("MMO"), as permitted and as defined by Pennsylvania statute, which resulted in the City contributing less than otherwise would have been contributed under the prior City policy. See below, "Funding Requirements; Funding Standards."

- Revising, in Fiscal Year 2009, the period over which the UAL is amortized, from a period ending June 30, 2019, to a period ending June 30, 2039.

The City has taken a number of steps to address the funding of the Municipal Pension Plan, including the following:

- Reducing the assumed rate of return on a gradual and consistent basis. See Table 22.

- Adopting more conservative mortality rates in response to experience studies performed by the Municipal Pension Plan actuary.

- In conjunction with extending the amortization period for the UAL from a period ending June 30, 2019, to a period ending June 30, 2039, changing from a level percent of pay amortization schedule to a level dollar amount schedule. This results in producing payments that ensure that a portion of principal on the UAL is paid each year.

- Funding consistently an amount greater than the MMO (subject to the deferrals for Fiscal Years 2010 and 2011 described below).

- Negotiating recent collective bargaining agreements by which additional contributions are being made (and will be made) by certain current (and future) members of the Municipal Pension Plan.

- Securing additional funding, including funds required to be deposited by the City to the Municipal Pension Fund from its share of future sales tax revenue.

This "Overview" is intended to highlight certain of the principal factors that led to the current UAL, and significant steps the City and the Pension Board have taken to address the underfunding. The reader is cautioned to review with care the more detailed information presented below under this caption, "PENSION SYSTEM."

Pension System; Pension Board

The City maintains two defined-benefit pension programs: (i) the Municipal Pension Plan, a multi-employer plan, which provides benefits to police officers, firefighters, non-uniformed employees, and non-represented appointed and elected officials, and (ii) the PGW Pension Plan, a single employer plan, which provides benefits to PGW employees. The Municipal Pension Plan is administered through 18 separate benefit structures, the funding for which is accounted for on a consolidated basis by the Municipal Pension Fund. The 18 benefit structures establish for their respective members different contribution levels, retirement ages, etc., but all assets are available to pay benefits to all members of the Municipal Pension Plan. The Municipal Pension Plan is a mature plan, initially established in 1915, with investment assets that totaled approximately $4.9 billion as of June 30, 2014. The Municipal Pension Plan has approximately 27,000 members who make contributions to the plan, and provides benefits to approximately 38,000 retirees and other beneficiaries.

PGW is principally a gas distribution facility owned by the City. For accounting presentation purposes, PGW is a component unit of the City and follows accounting rules as they apply to proprietary fund-type activities. The PGW Pension Plan is funded with contributions by PGW to such plan, which are treated as an operating expense of PGW, and such plan is not otherwise addressed under the caption "PENSION SYSTEM." See "PGW PENSION PLAN" below.

Contributions are made by the City to the Municipal Pension Fund from (i) the City's General Fund, (ii) funds that are received by the City from the Commonwealth for deposit into the Municipal Pension Fund, and (iii) various City inter-fund transfers, representing amounts contributed, or reimbursed, to the City's General Fund for pensions from the City's Water Operating Fund, Aviation Operating Fund, and certain other City funds or agencies. See Table 27 below, where the aggregate of such funds are referred to as "All City Funds Total Contribution." In addition to such City (employer) contribution, the other principal additions to the Municipal Pension Fund are (i) member (employee) contributions, (ii) interest and dividend income, (iii) net appreciation in asset values, and (iv) net realized gains on the sale of investments. See Table 24 below. An additional source of funding in the future is expected to be that portion of the 1% Sales Tax rate increase that is required under Pennsylvania law to be deposited to the Municipal Pension Fund. See "REVENUES OF THE CITY – Sales and Use Tax."

The City of Philadelphia Board of Pensions and Retirement (the "Pension Board") was established by the City Charter to administer "a comprehensive, fair and actuarially sound pension and retirement system covering all officers and employees of the City." The City Charter provides that the Pension Board "shall consist of the Director of Finance, who shall be its chairman, the Managing Director, the City Controller, the City Solicitor, the Personnel Director and four other persons who shall be elected to serve on the Board by the employees in the civil service in such manner as shall be determined by the Board." In addition, there is one non-voting member on the Pension Board, who is appointed by the President of City Council. An Executive Director, together with a staff of 75 personnel, administers the day-to-day activities of the retirement system, providing services to approximately 65,000 members.

The Municipal Pension Plan, the Municipal Pension Fund, and the Pension Board are for convenience sometimes collectively referred to under this caption as the "Municipal Retirement System."

Membership. Total membership in the Municipal Pension Plan decreased by 0.2%, or 64,958 to 64,822 members, from July 1, 2013 to July 1, 2014, including an increase of 1.0% in active members from 26,788 to 27,065 (who were contributing to the Municipal Pension Fund). Of the 64,822 members, 37,757 were retirees, beneficiaries, disabled, and other members (who were withdrawing from, or not contributing to, the Municipal Pension Fund).

Subject to the exceptions otherwise described in this paragraph, employees and officials become vested in the Municipal Pension Plan upon the completion of ten years of service. Employees and appointed officials who hold positions that are exempt from civil service and who are not entitled to be represented by a union, and who were hired before January 13, 1999, may elect accelerated vesting after five years of service in return for payment of a higher employee contribution than if the vesting period were ten years. Such employees and officials hired after January 13, 1999, become vested after five years of service and pay a higher employee contribution than if the vesting period were ten years. Elected officials become vested in the Municipal Pension Plan once they complete service equal to the lesser of two full terms in their elected office or eight years and pay a higher contribution than if the vesting period were ten years. Elected officials pay an additional employee contribution for the full cost of the additional benefits they may receive over those of general municipal employees. Upon retirement, employees and officials may receive up to 100% of their average final compensation depending upon their years of credited service and the plan in which they participate.

All City employees participate in the U.S. Social Security retirement system except for uniformed Police and uniformed Fire employees.

Certain membership information relating to the City's municipal retirement system provided by the Pension Board is set forth in Appendix A to the July 1, 2014 Actuarial Valuation Report (the "2014 Valuation") and includes as of July 1, 2014, among other information, active and non-active member data by plan, age/service distribution for active participants and average salary for all plans, and age and benefit distributions for non-active member data.

Funding Requirements; Funding Standards

City Charter. The City Charter establishes the "actuarially sound" standard quoted above. Case law has interpreted "actuarially sound" as used in the City Charter to require the funding of two components: (i) "normal cost" (as defined below) and (ii) interest on the UAL. (*Dumbrowski v. City of Philadelphia*, 431 Pa. 199, 245 A.2d 238 (1968)).

Pennsylvania Law. The Municipal Pension Plan Funding Standard and Recovery Act (Pa. P.L. 1005, No. 205 (1984)) ("Act 205"), applies to all municipal pension plans in Pennsylvania, "[n]otwithstanding any provision of law, municipal ordinance, municipal resolution, municipal charter, pension plan agreement or pension plan contract to the contrary . . . ." Act 205 provides that the annual financial requirements of the Municipal Pension Plan are: (i) the normal cost, (ii) administrative expense requirements, and (iii) an amortization contribution requirement. In addition, Act 205 requires that the MMO be payable to the Municipal Pension Fund from City revenues, and that the City shall provide for the full amount of the MMO in its annual budget. The MMO is defined as "the financial requirements of the pension plan reduced by . . . the amount of any member contributions anticipated as receivable for the following year." Act 205 further provides that the City has a "duty to fund its municipal pension plan," and the failure to provide for the MMO in its budget, or to pay the full amount of the MMO, may be remedied by the institution of legal proceedings for mandamus.

In accordance with Pennsylvania law and Act 205, the City uses the entry age normal actuarial funding method, whereby "normal cost" (associated with active employees only) is the present value of the benefits that the City expects to become payable in the future distributed evenly as a percent of expected payroll from the age of first entry into the plan to the expected age at retirement. The City's share of such normal cost (to which the City adds the Plan's administrative expenses) is reduced by member contributions. The term "level" means that the contribution rate for the normal cost, expressed as a percentage of active member payroll, is expected to remain relatively level over time.

The City has budgeted and paid at least the full MMO amount since such requirement was established, and more specifically, prior to Fiscal Year 2005 the City had been contributing to the Municipal Pension Plan the greater amount as calculated pursuant to the City Funding Policy which was implemented before Act 205 was effective, as described below. Payment of the MMO is a condition for receipt of the Commonwealth contribution to the Municipal Pension Fund. See Table 27 below.

Act 205 was amended in 2009 by Pa. P.L. 396, No. 44 ("Act 44") to authorize the City to "fresh start" the amortization of the UAL by a level annual dollar amount over 30 years ending June 30, 2039. In addition, Act 44 authorized the City to defer, and the City did defer, \$150 million of the MMO otherwise payable in Fiscal Year 2010, and \$80 million of the MMO otherwise payable in Fiscal Year 2011, subject to repayment of the deferred amounts by June 30, 2014. The City repaid the aggregate deferred amount of \$230 million, together with interest at the then-assumed interest rate of 8.25%, in Fiscal Year 2013. See Table 28 below.

GASB 27; Annual Required Contribution; City Funding Policy. Governmental Accounting Standards Board ("GASB") Statement No. 27, "Accounting for Pensions by State and Local Governmental Employers" ("GASB 27"), applies to the City for Fiscal Years beginning prior to July 1, 2014. For the Fiscal Year beginning July 1, 2014, GASB Statement No. 68 ("GASB 68"), which amends GASB 27 in several significant respects, applies. GASB 27 defines an "annual required contribution" ("ARC") as that amount sufficient to pay (i) the normal cost and (ii) the amortization of UAL, and provides that the maximum acceptable amortization period is 30 years (for the initial 10 years of implementation, 1996-2006, a 40 year amortization period was permitted). GASB 27 does not establish funding requirements for the City but rather is an accounting and financial reporting standard. GASB 68 will not require the calculation of an ARC but will require the City to include as a liability on its balance sheet the City's "net pension liability," as defined by GASB 68. The City has been funding the Municipal Pension Fund since Fiscal Year 2003 based on the MMO, including the deferral permitted by Act 44. See Table 28 below.

The City, prior to Fiscal Year 2005, had been funding the Municipal Pension Fund in accordance with what the City referred to as the "City Funding Policy." That reference was used and continues to be used in the Actuarial Reports. The City's financial statements have reflected as the ARC for GASB 27 purposes the amounts required under the City Funding Policy. Because the City has been using the City Funding Policy amounts as the ARC for financial reporting purposes under GASB 27, while funding at the lower MMO amounts, the aggregate differences have resulted in a Net Pension Obligation ("NPO") being reported. See

Note IV.1 to the City's audited Financial Statements for the Fiscal Year ended June 30, 2014, which sets forth the City's ARC for such year. The City could have used the MMO as the ARC for financial reporting purposes under GASB 27. Had the City done so, the MMO amounts paid would have equaled or exceeded the ARC, and thus no NPO would have resulted. Under the City Funding Policy, the UAL as of July 1, 1985 was to be amortized over 34 years ending June 30, 2019, with payments increasing at 3.3% per year, the assumed payroll growth. Other changes in the actuarial liability were amortized in level-dollar payments over various periods as prescribed in Act 205. In 1999, the City issued pension funding bonds, the proceeds of which were deposited directly into the Municipal Pension Fund to pay down its UAL. For GASB 27 purposes, these funds were treated as additional contributions. See "– Annual Contributions – Pension Bonds" below.

UAL and its Calculation

According to the 2014 Valuation, the funded ratio (the valuation of assets available for benefits to total actuarial liability) of the Municipal Pension Fund as of July 1, 2014 was 45.8% and the Municipal Pension Fund had an unfunded actuarial liability ("UAL") of $5.706 billion. The UAL is the difference between total actuarial liability ($10.521 billion as of July 1, 2014) and the actuarial value of assets ($4.815 billion as of July 1, 2014).

Key Actuarial Assumptions. In accordance with Act 205, the actuarial assumptions must be, in the judgment of both Cheiron (the independent consulting actuary for the Municipal Pension Fund) and the City, "the best available estimate of future occurrences in the case of each assumption." The assumed investment return rate used in the 2014 Valuation was 7.80% a year (which includes an inflation assumption of 2.75%), net of administrative expenses, compounded annually. For the prior actuarial valuation, the assumed investment return rate was 7.85%. See Table 22 for the assumed rates of return for Fiscal Years 2005 to 2014.

Other key actuarial assumptions in the 2014 Valuation include the following: (i) total annual payroll growth of 3.30%, (ii) annual administrative expenses assumed to increase 3.30% per year, (iii) to recognize the expense of the benefits payable under the Pension Adjustment Fund, actuarial liabilities were increased by 0.54%, based on the statistical average expected value of the benefits, (iv) a vested employee who terminates will elect a pension deferred to service retirement age so long as their age plus years of service at termination are greater than or equal to 55 (45 for police and fire employees), (v) for municipal and elected members, 70% of all disabilities are ordinary and 30% are service-connected, and (vi) for police and fire members, 50% of all disabilities are ordinary and 50% are service-connected.

"Smoothing Methodology". The Municipal Retirement System uses an actuarial value of assets to calculate its annual pension contribution, using an asset smoothing method to dampen the volatility in asset values that could occur because of fluctuations in market conditions. The Municipal Retirement System used a five-year smoothing prior to Fiscal Year 2009, and beginning with Fiscal Year 2009 began employing a ten-year smoothing. Using the ten-year smoothing methodology, investment returns in excess or below the assumed rate are prospectively distributed in equal amounts over a ten-year period, subject to the requirement that the actuarial value of assets will be adjusted, if necessary, to ensure that the actuarial value of assets will never be less than 80% of the market value of the assets, nor greater than 120% of the market value of the assets. The actuarial value of assets as of July 1, 2014, was approximately 99% of the market value of the assets.

Actuarial Valuations. The Pension Board engages an independent consulting actuary (currently Cheiron) to prepare annually an actuarial valuation report. Act 205, as amended by Act 44, establishes certain parameters for the actuarial valuation report, including: (i) use of the entry age normal actuarial cost method, (ii) that the report shall contain (a) actuarial exhibits, financial exhibits, and demographic exhibits, (b) an exhibit of normal costs expressed as a percentage of the future covered payroll of the active membership in the Municipal Pension Plan, and (c) an exhibit of the actuarial liability of the Municipal Pension Plan, and (iii) that changes in the actuarial liability be amortized in level-dollar payments as follows: (1) actuarial gains and losses be amortized over 20 years beginning July 1, 2009 (prior to July 1, 2009, gains and losses were amortized over 15 years); (2) assumption changes be amortized over 15 years beginning July 1, 2010 (prior to July 1, 2010, assumption changes were amortized over 20 years); (3) plan changes for active members be amortized over 10 years; (4) plan changes for inactive members be amortized over one year; and (5) plan changes mandated by the Commonwealth be amortized over 20 years.

Act 205 further requires that an experience study be conducted at least every four years, and cover the five-year period ending as of the end of the plan year preceding the plan year for which the actuarial valuation report is filed. The most recent Experience Study was prepared by Cheiron in March 2014 for the period July 1, 2008 – June 30, 2013. The changes to the actuarial and demographic assumptions that were adopted by the Pension Board in response to such Experience Study have been employed in the 2014 Valuation. The principal revisions included marginal changes in salary growth rates; changes in retirement assumptions (increase for those under the pension plan the City established in 1967; decrease for those under the pension plan the City established in 1987); increase in the expected disability rates for police and fire employees; and changes in mortality assumptions to fully reflect the most recent experience. Details of these assumption changes and the experience of the Municipal Pension Plan can be found in the *City of Philadelphia Municipal Retirement System Experience Study Results and Recommendations For the period covering July 1, 2008 – June 30, 2013,* available at the Investor Information section of the City's website.

Pension Adjustment Fund

Pursuant to § 22-311 of the Philadelphia Code, the City directed the Pension Board to establish a Pension Adjustment Fund ("PAF") on July 1, 1999, and further directed the Pension Board to determine, effective June 30, 2000 and each Fiscal Year thereafter, whether there are "excess earnings" as defined available to be credited to the PAF. The Pension Board's determination is to be based upon the actuary's certification using the "adjusted market value of assets valuation method" as defined in § 22-311. Although the portion of the assets attributed to the PAF is not segregated from the assets of the Municipal Pension Fund, the Philadelphia Code provides that the "purpose of the Pension Adjustment Fund is for the distribution of benefits as determined by the Board for retirees, beneficiaries or survivors [and] [t]he Board shall make timely, regular and sufficient distributions from the Pension Adjustment Fund in order to maximize the benefits of retirees, beneficiaries or survivors." Distributions are to be made "without delay" no later than six months after the end of each Fiscal Year. The PAF was established, in part, because the Municipal Retirement System does not provide annual cost-of-living increases to retirees or beneficiaries. At the time the PAF was established, distributions from the PAF were subject to the restriction that the actuarial funded ratio using the "adjusted market value of assets" be not less than such ratio as of July 1, 1999 (76.7%). That restriction was deleted in 2007 by an ordinance adopted by City Council; the Mayor vetoed such ordinance, and City Council overrode such veto.

The amount to be credited to the PAF is 50% of the "excess earnings" that are between one percent (1%) and six percent (6%) above the actuarial assumed investment rate. Earnings in excess of six percent (6%) of the actuarial assumed investment rate remain in the Municipal Pension Fund. Although the Pension Board utilizes a ten-year smoothing methodology, as explained above, for the actuarial valuation of assets for funding and determination of the MMO, § 22-311 provides for a five-year smoothing to determine the amount to be credited to the PAF. The actuary determined that for the Fiscal Year ended June 30, 2014, there were "excess earnings" as defined to be credited to the PAF of approximately $61.2 million available for transfer and distribution. The Pension Board transfers to the PAF the full amount calculated by the actuary as being available in any year for transfer within six months of the Pension Board designating the amount to be transferred.

Transfers to the PAF and the resultant additional distributions to retirees result in removing assets from the Municipal Pension Plan. To account for the possibility of such transfers, and as an alternative to adjusting the assumed investment return rate to reflect such possibility, the actuary applies a load of 0.54% to the calculated actuarial liability as part of the funding requirement and MMO. Such calculation was utilized for the first time in the 2013 Valuation.

The market value of assets as used under this caption, "PENSION SYSTEM," represents the value of the assets if they were liquidated on the valuation date and this value includes the PAF (except as otherwise indicated in certain tables), although the PAF is not available for funding purposes. The actuarial value of assets does not include the PAF.

Rates of Return; Asset Values; Changes in Plan Net Position

Rates of Return. The following table sets forth for the Fiscal Years 2005-2014 the market value of assets internal rate of return and actuarial value of assets internal rate of return experienced by the Municipal Pension Fund, and the assumed rate of return. The 5-year and 10-year annual average returns as of June 30, 2014, were 12.01% and 7.38%, respectively, on a market value basis.

Table 22
Municipal Pension Fund
Annual Rates of Return

Year Ending June 30,	Market Value	Actuarial Value[1]	Assumed Rate of Return
2005	9.9%	1.8%	8.75%
2006	11.3	6.1	8.75
2007	17.0	10.7	8.75
2008	-4.5	10.1	8.75
2009	-19.9	-9.3	8.75
2010	13.8	12.9	8.25
2011	19.4	9.9	8.15
2012	0.2	2.4	8.10
2013	10.9	5.1	7.95
2014	15.7	4.8	7.85

Source: 2014 Valuation for Market and Actuarial Value annual rates of return; annual Actuarial Valuation Reports prepared by Mercer Human Resources Consulting for Fiscal Years 2005-2006 and Cheiron for Fiscal Years 2007-2014 for Assumed Rates of Return.

(1) Net of PAF. See "Pension Adjustment Fund" above. The actuarial values for 2005-2008 reflect a five-year smoothing; for 2009-2014, a ten-year smoothing.

Asset Values. The following table sets forth as of the July 1 actuarial valuation date for the years 2005-2014 the actuarial and market values of assets in the Municipal Pension Fund and the actuarial value as a percentage of market value.

Table 23
Actuarial Value of Assets vs. Market Value of Net Assets
(Dollar Amounts in Millions of USD)

Actuarial Valuation Date (July 1)	Actuarial Value of Assets[1]	Market Value of Net Assets[1]	Actuarial Value as a Percentage of Market Value
2005	$4,159.5	$4,100.6	101.4%
2006	4,168.5	4,315.6	96.6
2007	4,421.7	4,850.9	91.2
2008	4,623.6	4,383.5	105.5
2009	4,042.1	3,368.4	120.0
2010[2]	4,380.9	3,650.7	120.0
2011[2]	4,719.1	4,259.2	110.8
2012[2]	4,716.8	4,151.8	113.6
2013	4,799.3	4,444.1	108.0
2014	4,814.9	4,854.3	99.2

Source: 2014 Valuation for Actuarial Value of Assets; 2005-2014 Actuarial Reports for Market Value of Net Assets.

(1) For purposes of this table, the Market Value of Net Assets excludes the PAF, which as of June 30, 2014 equaled $62,439,223. The Actuarial Value of Assets excludes that portion of the Municipal Pension Fund that is allocated to the PAF. The actuarial values for 2005-2008 reflect a five-year smoothing; for 2009-2014, a ten-year smoothing.

(2) The July 1, 2010 actuarial and market values of assets include the $150 million deferred contribution from Fiscal Year 2010, and the July 1, 2011 and July 1, 2012 actuarial and market values of assets include the total deferred contribution of $230 million. See Table 28 below.

Changes in Plan Net Position. The following table sets forth for the Fiscal Years 2010-2014, the additions, including employee (member) contributions, City contributions (including contributions from the Commonwealth), investment income and miscellaneous income, and deductions, including benefit payments and administration expenses, for the Municipal Pension Fund. Debt service payments on pension funding bonds (as described below at "Annual Contributions – Pension Bonds") are made from the City's General Fund and not made from the Municipal Pension Fund, and therefore are not included in Table 24. In those years in which the investment income is less than anticipated, the Municipal Pension Fund may experience negative changes (total deductions greater than total additions), which, as the table reflects, did occur in Fiscal Year 2012. Furthermore, if unrealized gains are excluded from Table 24, resulting in a comparison of cash actually received against actual cash outlays, it results in a negative cash flow in each year, which is typical of a mature retirement system.

Contributions from the Commonwealth are provided pursuant to the provisions of Act 205. Any such contributions are required to be used to defray the cost of the City's pension system. The amounts contributed by the Commonwealth for each of the last ten Fiscal Years are set forth in Table 27 below.

Employee (member) contribution amounts reflect contribution rates as a percent of pay, which vary from 5.00% to 6.00% for police and fire employees, and from 1.95% to 3.75% for municipal employees. However, future member contribution rates for nearly all municipal employees increased by 0.5% of pay on January 1, 2015 and are scheduled to increase by an additional 0.5% of pay commencing January 1, 2016.

Table 24
Changes in Net Position of the Municipal Pension Fund
Fiscal Years 2010-2014
(Amounts in Thousands of USD)

	2010	2011	2012	2013	2014
Beginning Net Assets (Market Value)[1]	$3,375,767	$3,501,602	$4,030,216	$3,922,817	$4,445,224
Additions					
- Member Contributions	51,570	52,706	49,979	49,614	53,722
- City Contributions[2,3]	312,556	470,155	556,031	781,823	553,179
- Investment Income[4]	455,793	701,225	13,297	442,667	677,380
- Miscellaneous Income[5]	(1,368)	(385)	1,224	3,134	4,089
Total	$818,551	$1,223,701	620,531	$1,277,238	$1,288,370
Deductions					
- Benefits and Refunds	(684,642)	(687,034)	(712,684)	(746,490)	(808,597)
- Administration	(8,074)	(8,053)	(15,246)[6]	(8,341)	(8,292)
Total	$ (692,716)	$ (695,087)	$ (727,930)	$ (754,831)	($816,889)
Ending Net Assets (Market Value)[7]	$3,501,602	$4,030,216	$ 3,922,817	$4,445,224	$4,916,705

Source: Municipal Pension Fund's audited financial statements.

(1) Includes the PAF, which is not available for funding purposes.
(2) City Contributions include pension contributions from the Commonwealth. See Table 27 below.
(3) City Contributions are the actual cash outlays for Fiscal Year 2010 and Fiscal Year 2011, which do not include deferred amounts of $150 million and $80 million, respectively.
(4) Investment income is shown net of fees and expenses, and includes interest and dividend income, net appreciation in fair value of investments, and net gains realized upon the sale of investments.
(5) Miscellaneous income includes securities lending and other miscellaneous revenues.
(6) The $15,246 is the number in the Fund's 2012 audited financial statements. However, it was subsequently determined that certain investment expenses had been misclassified as administration expenses. If those investment expenses were not included, the administration deduction for Fiscal Year 2012 would have been $8,482,639.
(7) For Fiscal Year 2010, does not include the $150 million contribution receivable and for Fiscal Years 2011 and 2012 does not include the $230 million total contribution receivable, which was paid back and is included in Fiscal Year 2013.

Funded Status of the Municipal Pension Fund

The following two tables set forth as of the July 1 actuarial valuation date for the years 2005-2014, the asset value, the actuarial liability, the UAL, the funded ratio, covered payroll and UAL, as a percentage of covered payroll for the Municipal Pension Fund on actuarial and market value bases, respectively.

Table 25
Schedule of Funding Progress (Actuarial Value)
(Dollar Amounts in Millions of USD)

Actuarial Valuation Date (July 1)	Actuarial Value of Assets[1] (a)	Actuarial Liability (b)	UAL (Actuarial Value) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAL as a % of Covered Payroll [(b-a)/c]
2005	$4,159.5	$7,851.5	$3,692.0	53.0%	$1,270.7	290.5%
2006	4,168.5	8,083.7	3,915.2	51.6	1,319.4	296.7
2007	4,421.7	8,197.2	3,775.5	53.9	1,351.8	279.3
2008	4,623.6	8,402.2	3,778.7	55.0	1,456.5	259.4
2009	4,042.1	8,975.0	4,932.9	45.0	1,463.3	337.1
2010	4,380.9	9,317.0	4,936.1	47.0	1,421.2	347.3
2011	4,719.1[2]	9,487.5	4,768.4	49.7	1,371.3	347.7
2012	4,716.8[2]	9,799.9	5,083.1	48.1	1,372.2	370.4
2013	4,799.3	10,126.2	5,326.9	47.4	1,429.7	372.6
2014	4,814.9	10,521.8	5,706.9	45.8	1,495.4	381.6

Source: 2014 Valuation.

(1) The July 1, 2010 Actuarial Value of Assets includes the $150 million deferred contribution from Fiscal Year 2010 and each of the July 1, 2011 and July 1, 2012 Actuarial Value of Assets includes the total deferred contribution of $230 million.
(2) Reflects the assumed rate of return on deferred contributions at the time of the deferral.

Table 26
Schedule of Funding Progress (Market Value)
(Dollar Amounts in Millions of USD)

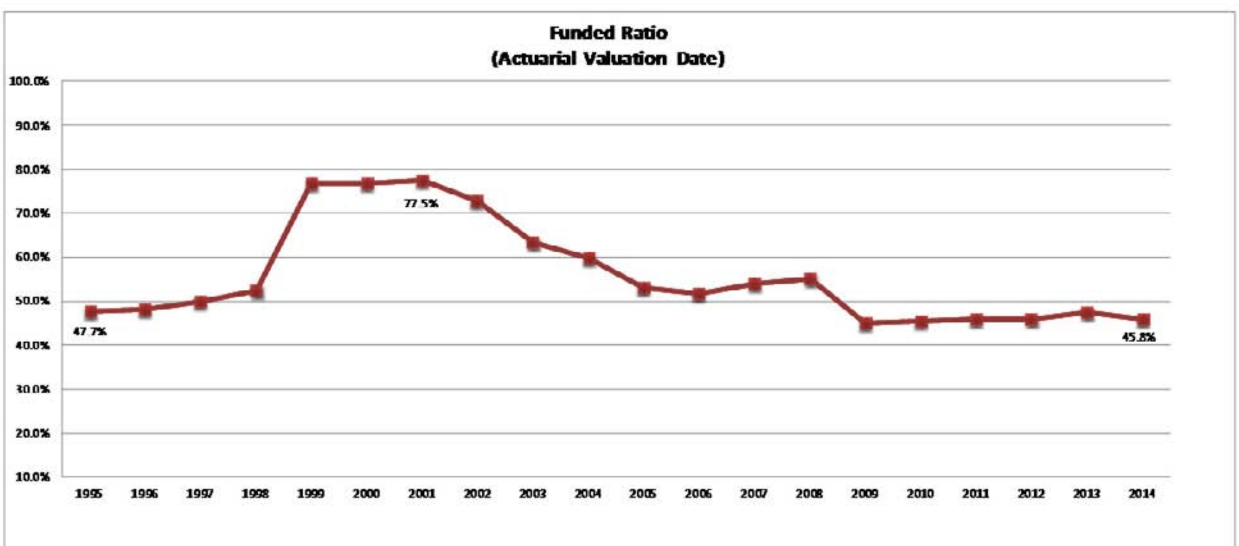
Actuarial Valuation Date (July 1)	Market Value of Net Assets[1] (a)	Actuarial Liability (b)	UAL (Market Value) (b-a)	Funded Ratio (Market Value) (a/b)	Covered Payroll (c)	UAL as a % of Covered Payroll (Market Value) [(b-a)/c]
2005	$4,100.6	$7,851.5	$3,750.9	52.2%	$1,270.7	295.2%
2006	4,315.6	8,083.7	3,768.1	53.4	1,319.4	285.6
2007	4,850.9	8,197.2	3,346.3	59.2	1,351.8	247.5
2008	4,383.5	8,402.2	4,018.7	52.2	1,456.5	275.9
2009	3,368.4	8,975.0	5,606.6	37.5	1,463.3	383.2
2010	3,650.7	9,317.0	5,666.3	39.2	1,421.2	398.7
2011	4,259.2	9,487.5	5,228.3	44.9	1,371.3	381.3
2012	4,151.8	9,799.9	5,648.1	42.4	1,372.2	411.6
2013	4,444.1	10,126.2	5,682.1	43.9	1,429.7	397.4
2014	4,854.3[2]	10,521.8	5,667.6	46.1	1,495.4	379.0

Source: 2005-2014 Actuarial Valuation Reports.

(1) The July 1, 2010 Market Value of Net Assets includes the $150 million deferred contribution from Fiscal Year 2010 and each of the July 1, 2011 and July 1, 2012 Market Value of Net Assets includes the total deferred contribution of $230 million.

(2) For purposes of this table, the Market Value of Net Assets excludes the PAF, which as of June 30, 2014 equaled $62,439,223.

The following chart reflects the funded ratios, using the actuarial value of assets, for the period 1995 – 2014.



Annual Contributions

Table 27 shows the components of the City's annual pension contributions from City funds for the Fiscal Years 2005-2014.

Table 27
All City Funds Total Contribution to Municipal Pension Fund
(Amounts in Millions of USD)

Fiscal Year	General Fund Contribution[1]	Commonwealth Contribution	City Interfund Transfers[2]	All City Funds Total Contribution
2005	$224.2	$49.8	$35.0	$309.0
2006	231.2	57.3	43.3	331.8
2007	317.5	57.7	57.1	432.3
2008	305.5	59.6	61.8	426.9
2009	332.1	59.6	63.7	455.4
2010	204.0[3]	59.2	49.3	312.6
2011	343.4[3]	61.8	65.0	470.2
2012	376.9	95.0	84.1	556.0
2013	626.3[4]	65.7	89.8	781.8
2014	399.0	69.6	84.6	553.2

Source: 2005-2014 Actuarial Valuation Reports and the City.

(1) General Fund Contribution represents contributions to the Municipal Pension Fund from the City's General Fund, Grants Revenue Fund, Acute Care Hospital Assessment Fund, and General Capital Improvement Fund.

(2) City Interfund Transfers represent contributions to the Municipal Pension Fund from the City's Water Operating Fund, Airport Operating Fund, Special Gasoline Tax Fund, Community Development Block Grant Fund, and Municipal Pension Fund, as well as contributions from quasi-governmental agencies.

(3) Reflects the actual cash outlays for Fiscal Year 2010 and Fiscal Year 2011, which do not include the deferred contributions authorized pursuant to Act 44. See "– Funding Requirements; Funding Standards – Pennsylvania Law" above for a discussion of pension contribution deferrals authorized pursuant to Act 44.

(4) Includes repayment of deferred contributions of $230.0 million authorized pursuant to Act 44 and $58.0 million of aggregate interest due over the entire deferral period.

Table 28 below sets forth for the City's Fiscal Years 2005-2014, information related to the City's annual pension contributions including, among other information, the MMO and the percentages of the MMO contributed.

Table 28
Annual City Contribution Status for the Municipal Pension Fund
(Dollar Amounts in Millions of USD)

Fiscal Year	MMO	All City Funds Total Contribution[1]	MMO (Deferred) Makeup Payments	% of MMO Contributed
2005	$294.0	$309.0		105.1%
2006	306.9	331.8		108.1
2007	400.3	432.3		108.0
2008	412.4	426.9		103.5
2009	438.5	455.4		103.9
2010	447.4	312.6	$(150.0)	100.0[2]
2011	511.0	470.2	(80.0)	100.0[2]
2012	507.0	556.0		109.7
2013	492.0	781.8[3]	230.0	158.9
2014	523.4	553.2		105.7

Source: 2005-2014 Actuarial Valuation Reports and the City.

(1) See Table 27 above.
(2) Act 205 directs the actuary, in performing the actuarial valuations, to disregard deferrals, and therefore 100% is reflected in this column.
(3) Includes repayment of deferred contributions of $230.0 million authorized pursuant to Act 44 and $58.0 million of aggregate interest due over the entire deferral period.

The following table shows the annual City contribution to the Municipal Pension Fund as a percentage of the covered employee payroll.

Table 29
Annual City Contribution as % of Covered Employee Payroll
(Dollar Amounts in Thousands of USD)

Fiscal Year	Annual City Contribution	Fiscal Year Covered Employee Payroll	ACC as % of Payroll
2005	$299,266[1]	$1,270,700	23.55%
2006	331,765	1,319,400	25.15
2007	432,267	1,351,826	31.98
2008	426,934	1,461,640	29.21
2009	455,389	1,462,451	31.14
2010	312,556	1,422,987	21.96
2011	470,155	1,410,207	33.34
2012	556,031	1,387,086	40.06
2013	781,823	1,423,417	54.93
2014	553,179	1,556,660	35.54

Source: Municipal Pension Fund Financial Statements, June 30, 2014.

(1) There is a minor inconsistency for Fiscal Year 2005 between the audited financial statements of the Municipal Pension Fund and the City's internal records, which as reflected in Tables 27 and 28, show an Annual City Contribution of approximately $309 million.

Pension Bonds. Pension funding bonds ("Pension Bonds") were issued in Fiscal Year 1999, at the request of the City, by PAID, a public instrumentality of the Commonwealth of Pennsylvania. Debt service on the Pension Bonds is payable pursuant to a Service Agreement between the City and PAID. The Service Agreement provides that the City is obligated to pay a service fee from its current revenues and the City covenanted in the agreement to include the annual amount in its operating budget and to make appropriations in such amounts as are required. If the City's revenues are insufficient to pay the full service fee in any Fiscal Year as the same becomes due and payable, the City has covenanted to include amounts not so paid in its operating budget for the ensuing Fiscal Year.

The 1999 Pension Bonds were issued in the principal amount of $1.3 billion, and the net proceeds were used, together with other funds of the City, to make a contribution in Fiscal Year 1999 to the Municipal Pension Fund in the amount of approximately $1.5 billion.

In October 2012, PAID, at the request of the City, issued Pension Bonds in the principal amount of $231.2 million, the proceeds of which were used principally to make the $230 million repayment of deferred contributions to the Municipal Pension Fund reflected in Table 28 above. These bonds had maturities of April 1, 2013 and 2014, and have been repaid.

In December 2012, PAID, at the request of the City, issued Pension Bonds in the approximate principal amount of $300 million, the proceeds of which were used to current refund a portion of the 1999 Pension Bonds. The refunding generated savings of approximately $22.7 million, which the City deposited into the Municipal Pension Fund.

Projections of Funded Status

Cautionary Note. The information under this subheading, "Projections of Funded Status," was prepared by Cheiron. The table below shows a five-year projection of MMO payments, Actuarial Value of Assets, Actuarial Liability, and Funded Ratio. The charts below show projections through 2034 of funded ratios and MMO contributions. All projections, whether for five years or for twenty years, are subject to actual experience deviating from the underlying assumptions and methods, and that is particularly the case for the charts below for the periods beyond the projections in the five-year table. **Projections and actuarial assessments are "forward looking" statements and are based upon assumptions which may not be fully realized in the future and are subject to change, including changes based upon the future experience of the City's Municipal Pension Fund and Municipal Pension Plan.**

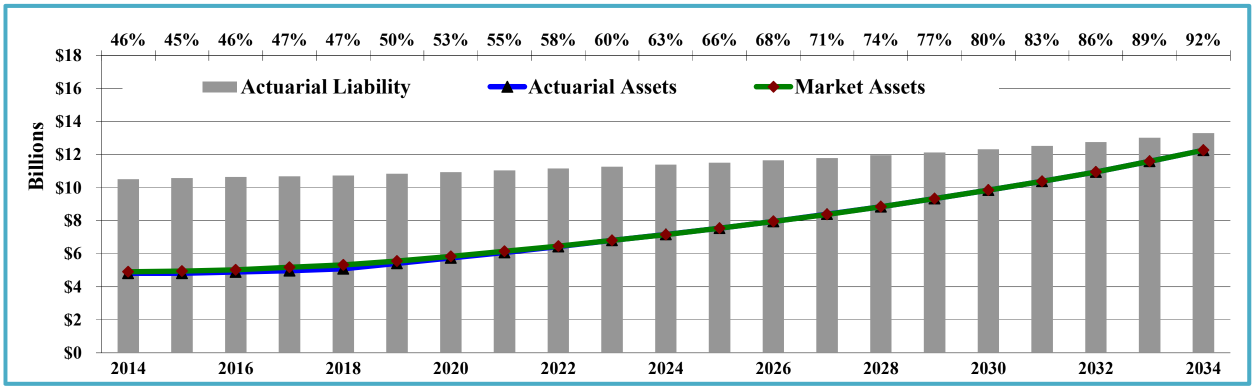
The projections are on the basis that all assumptions in the 2014 Valuation are exactly realized and the City makes all future MMO payments on schedule as required by Pennsylvania law, and must be understood in the context of the assumptions, methods and benefits in effect as described in the 2014 Valuation. Included among such assumptions are: (i) the rates of return for the Municipal Pension Fund over the projection period will equal 7.80% annually, (ii) MMO contributions will be made each year, and (iii) the provisions of Act 205 as amended by Act 44 will remain in force during the projection period. See the 2014 Valuation for a further discussion of the assumptions and methodologies used by the Actuary in preparing the 2014 Valuation and the following projections. In addition, the table and charts below reflect estimates of sales tax revenues that will be deposited by the City into the Municipal Pension Fund, which were provided by the City to Cheiron. Cheiron has not analyzed and makes no representation regarding the validity of the sales tax revenue assumptions and estimates provided by the City. See "REVENUES OF THE CITY – Sales and Use Tax."

Five-Year Projection.

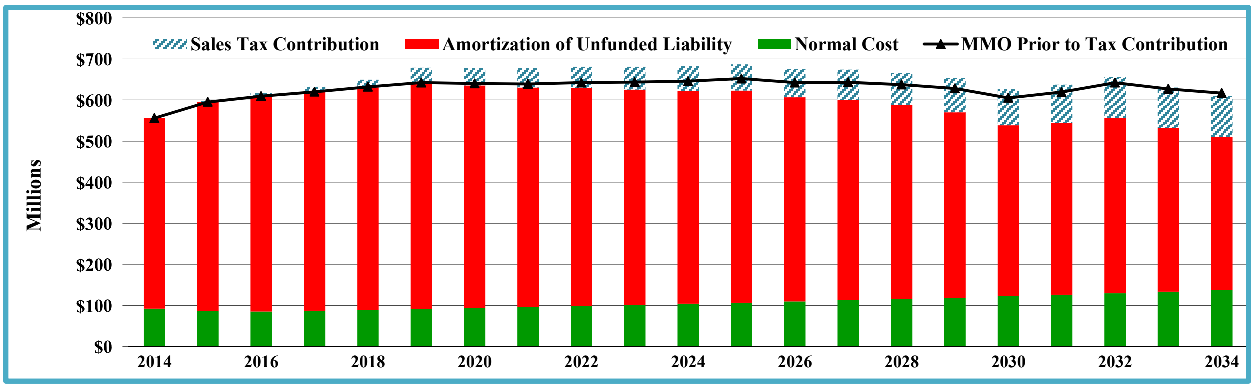
Fiscal Year End	MMO	Sales Tax Contribution	Actuarial Value of Assets	Actuarial Liability	UAL	Funded Ratio
2015	$ 556.0	$ 0.0	$ 4,814.9	$ 10,521.8	$ 5,706.9	45.8%
2016	595.0	2.8	4,815.5	10,584.8	5,769.3	45.5%
2017	609.4	7.8	4,900.0	10,640.2	5,740.2	46.1%
2018	619.5	13.2	4,976.2	10,689.7	5,713.5	46.6%
2019	630.9	18.6	5,085.4	10,733.2	5,647.7	47.4%
2020	639.9	38.9	5,410.4	10,836.9	5,426.5	49.9%

Twenty-Year Projections.

Funded Ratio Chart:



MMO Contribution Chart:



OTHER POST-EMPLOYMENT BENEFITS

The City self-administers a single employer, defined benefit plan for post-employment benefits other than pension benefits ("OPEB"), and funds such plan on a pay-as-you-go basis. The City's OPEB plan provides for those persons who retire from the City and are participants in the Municipal Pension Plan: (i) post-employment healthcare benefits for a period of five years following the date of retirement and (ii) lifetime life insurance coverage ($7,500 for firefighters; $6,000 for all other employees). In general, employees eligible for OPEB are those who terminate their employment after ten years of continuous service to immediately become pensioned under the Municipal Pension Plan.

To provide health care coverage, the City pays a negotiated monthly premium for retirees covered by the union contract for AFSCME DC 33 and is self-insured or moving to self-insurance for all other eligible retirees. Eligible union represented employees receive five years of coverage through their union's health fund. The City's funding obligation for such benefits is the same as for active employees. Certain union represented employees may defer their coverage until a later date. For some groups, the amount that the City pays for their health care is limited to the amount that the City would have paid at the date of their retirement, but for police and fire retirees, the City pays the cost of five years of coverage when the employee receives the benefits.

The annual payments made by the City for OPEB for the last five Fiscal Years are shown in Table 30 below.

Table 30
Annual OPEB Payment
(Amounts in Millions of USD)

Fiscal Year ended June 30,	Annual OPEB Payment
2010	$71,693
2011	65,533
2012	76,344
2013	57,096
2014	67,100

For financial reporting purposes, although the City funds OPEB on a pay-as-you-go basis, it is required to include in its financial statements (in accordance with GASB Statement No. 45) a calculation similar to that performed to calculate its pension liability. Pursuant to GASB 45, an annual required contribution is calculated which, if paid on an ongoing basis, is projected to cover normal costs each year and to amortize any unfunded actuarial liability over a period not to exceed 30 years. As of July 1, 2013, the date of the most recent actuarial valuation, the UAL for the City's OPEB was $1.7 billion, the covered annual payroll was $1.4 billion, and the ratio of UAL to the covered payroll was 120.2%. See Note IV.3 to the City's audited Financial Statements for the Fiscal Year ended June 30, 2014.

PGW PENSION PLAN

General

PGW consists of all the real and personal property owned by the City and used for the acquisition, manufacture, storage, processing, and distribution of gas within the City, and all property, books, and records employed and maintained in connection with the operation, maintenance, and administration of PGW. The City Charter provides for a Gas Commission (the "Gas Commission") to be constituted and appointed in accordance with the provisions of contracts between the City and the operator of PGW as may from time to time be in effect, or, in the absence of a contract, as may be provided by ordinance. The Gas Commission consists of the City Controller, two members appointed by City Council and two members appointed by the Mayor.

PGW is operated by PFMC, pursuant to an agreement between the City and PFMC dated December 29, 1972, as amended, authorized by ordinances of City Council (the "Management Agreement"). Under the Management Agreement, various aspects of PFMC's management of PGW are subject to review and approval by the Gas Commission. The PUC has the regulatory responsibility for PGW with regard to rates, safety, and customer service.

The City sponsors the Philadelphia Gas Works Pension Plan (the "PGW Pension Plan"), a single employer defined benefit plan, to provide pension benefits for all of PGW's employees and other eligible class employees of PFMC and the Gas Commission. As plan sponsor, the City, through its General Fund, could be responsible for plan liabilities if the PGW Pension Plan does not satisfy its payment obligations to PGW retirees. At September 1, 2014, the PGW Pension Plan membership total was 3,734, comprised of (i) 2,343 retirees and beneficiaries currently receiving benefits and terminated employees entitled to benefits but not yet receiving them and (ii) 1,391 participants, of which 1,140 were vested and 251 were nonvested.

PGW Pension Plan

The PGW Pension Plan provides retirement benefits as well as death and disability benefits. Retirement benefits vest after five years of credited service. Retirement payments for vested employees commence (i) at age 65 and five years of credited service, (ii) age 55 and 15 years of credited service, or (iii) without regard to age, after 30 years of credited service. For covered employees hired prior to May 21, 2011 (union employees) or prior to December 21, 2011 (non-union employees), PGW pays the entire cost of the PGW Pension Plan. Union employees hired on or after May 21, 2011 and non-union employees hired on or after December 21, 2011 have the option to participate in the PGW Pension Plan and contribute 6% of applicable wages, or participate in a plan established in compliance with Section 401(a) of the Internal Revenue Code (deferred compensation plan) and have PGW contribute 5.5% of applicable wages.

PGW is required by statute to contribute the amounts necessary to fund the PGW Pension Plan. The PGW Pension Plan is being funded with contributions by PGW to the Sinking Fund Commission of the City. Benefit and contribution provisions are established by City ordinance and may be amended only as allowed by City ordinance. The pension payments are treated as an operating expense of PGW and are included as a component of PGW's base rate. As such, the payment amounts are subject to the approval of the PUC. To date, the PUC has approved the amounts requested that are allocable to pension payments.

Pension Costs and Funding

PGW pays an annual amount that is projected to be sufficient to cover its normal cost and an amortization over 20 years of the PGW Pension Plan's UAL. The following chart shows the normal cost, the amortization payment, and the resulting annual required contribution (being the amount also paid) for the last five PGW Fiscal Years.

Table 31
PGW Pension Payments
(Dollar Amounts in Thousands of USD)

Fiscal Year ended August 31,	Normal Cost	Amortization Payment	Annual Required Contribution (amount paid)
2010	$8,292	$16,341	$24,633
2011	8,125	7,300	15,425
2012	8,171	15,801	23,972
2013	8,782	14,832	23,614
2014	8,533	15,988	24,521

Although PGW has paid its annual required contribution each year, the actuarial value of assets for the PGW Pension Plan is less than the actuarial accrued liability, as shown in the next table.

Table 32
Schedule of Pension Funding Progress
(Dollar Amounts in Thousands of USD)

Actuarial valuation date (September 1)	Actuarial value of assets	Actuarial liability	Unfunded actuarial liability	Funded ratio
2010	$381,975	$533,630	$151,655	71.58%
2011	421,949	572,190	150,241	73.74
2012	437,780	585,632	147,852	74.75
2013	462,691	623,612	160,921	74.20
2014	514,944	643,988	129,044	79.96

The current significant actuarial assumptions for the PGW Pension Plan are (i) investment return rate of 7.95% compounded annually, (ii) salary increases assumed to reach 4.5% per year; and (iii) retirements that are assumed to occur prior to age 62, at a rate of 10.0% at ages 55 to 61 and 100% at age 62.

Additional Information

The City issues a publicly available financial report that includes financial statements and required supplementary information for the PGW Pension Plan. The report is not incorporated into this Official Statement by reference. The report may be obtained by writing to the Office of the Director of Finance of the City.

Further information on the PGW Pension Plan, including with respect to its membership, plan description, funding policy, actuarial assumptions and funded status is contained in the Fiscal Year 2014 CAFR.

PGW OTHER POST-EMPLOYMENT BENEFITS

PGW provides post-employment healthcare and life insurance benefits to its participating retirees and their beneficiaries and dependents. The City, through its General Fund, could be responsible for costs associated with post-employment healthcare and life insurance benefits if PGW fails to satisfy its post-employment benefit obligations.

PGW pays the full cost of medical, basic dental, and prescription coverage for employees who retired prior to December 1, 2001. Employees who retire after December 1, 2001 are provided a choice of three plans at PGW's expense and can elect to pay toward a more expensive plan. Union employees hired prior to May 21, 2011 and non-union employees hired prior to December 21, 2011 who retire from active service to immediately begin receiving pension benefits are entitled to receive lifetime post-retirement medical, prescription, and dental benefits for themselves and, depending on their retirement plan elections, their dependents. Employees hired on or after those dates are entitled to receive only five years of post-retirement benefits. Currently, PGW provides for the cost of healthcare and life insurance benefits for retirees and their beneficiaries on a pay-as-you-go-basis.

As part of a July 29, 2010 rate case settlement (the "Rate Settlement"), which provided for the establishment of an irrevocable trust for the deposit of funds derived through a rider from all customer classes to fund OPEB liabilities, PGW established the trust in July 2010, and began funding the trust in accordance with the Rate Settlement in September 2010. The Rate Settlement provides that PGW shall deposit $15.0 million annually for an initial five-year period towards the ARC, and an additional $3.5 million annually, which represents a 30-year amortization of the OPEB liability at August 31, 2010. These deposits will be funded primarily through increased rates of $16.0 million granted in the Rate Settlement. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal costs each year and amortize any unfunded actuarial liabilities (or funding excesses) over a period of 30 years.

The following tables provide the detail of the PGW OPEB payments for the last five PGW Fiscal Years, and the funding progress.

Table 33
PGW OPEB Payments
(Amounts in Millions of USD)

Fiscal Year ended August 31,	Healthcare	Life Insurance	OPEB Trust	Total
2010	$20.6	$1.1	$0.0	$21.7
2011	21.8	1.4	18.5	41.7
2012	24.5	1.5	18.5	44.5
2013	22.2	1.5	18.5	42.2
2014	24.3	1.6	18.5	44.4

Table 34
Schedule of OPEB Funding Progress
(Dollar Amounts in Thousands of USD)

Actuarial valuation date (August 31)	Actuarial value of assets	Actuarial liability	Unfunded actuarial liability	Funded ratio
2011	$17,886	$485,722	$467,836	3.68%
2012	38,860	443,982	405,122	8.75
2013	61,796	436,527	374,731	14.16
2014	90,838	450,289	359,451	20.17

Further information on PGW's annual OPEB expense, net OPEB obligation and the funded status of the OPEB benefits related to PGW is contained in the Fiscal Year 2014 CAFR.

CITY CASH MANAGEMENT AND INVESTMENT POLICIES

General Fund Cash Flow

Due to the fact that the receipt of revenues into the General Fund generally lag behind expenditures from the General Fund during each Fiscal Year, the City issues notes in anticipation of General Fund revenues and makes payments from the Consolidated Cash Account (described below) to finance its on-going operations. The City has issued, or PICA has issued on behalf of the City, tax and revenue anticipation notes in each Fiscal Year since Fiscal Year 1972. Each issue was repaid when due, prior to the end of the Fiscal Year. The City issued $130 million of tax and revenue anticipation notes on November 25, 2014, which mature on June 30, 2015. The City expects to issue $175 million of tax and revenue anticipation notes in Fiscal Year 2016.

The timing imbalance referred to above results from a number of factors, principally the following: (i) Real Estate Taxes, BIRT, and certain other taxes are not due until the latter part of the Fiscal Year; and (ii) the City experiences lags in reimbursement from other governmental entities for expenditures initially made by the City in connection with programs funded by other governments.

The repayment of the tax and revenue anticipation notes is funded through cash available in the General Fund.

Consolidated Cash

The Act of the General Assembly of June 25, 1919 (Pa. P.L. 581, No. 274, Art. XVII, § 6) authorizes the City to make temporary inter-fund loans between certain operating and capital funds. The City maintains a Consolidated Cash Account for the purpose of pooling the cash and investments of all City funds, except those which, for legal or contractual reasons, cannot be commingled (e.g., the Municipal Pension Fund, sinking funds, sinking fund reserves, funds of PGW, the Aviation Fund, and certain other restricted purpose funds). A separate accounting is maintained to record the equity of each member fund that participates in the Consolidated Cash Account. The City manages the Consolidated Cash Account pursuant to the procedures described below.

To the extent that any member fund temporarily experiences the equivalent of a cash deficiency, an advance is made from the Consolidated Cash Account, in an amount necessary to result in a zero balance in the cash equivalent account of the borrowing fund. All subsequent net receipts of a member fund that has negative equity are applied in repayment of the advance.

All advances are made within the budgetary constraints of the borrowing funds. Within the General Fund, this system of inter-fund advances has historically resulted in the temporary use of tax revenues or other operating revenues for capital purposes and the temporary use of capital funds for operating purposes. With the movement of the reimbursable component of DHS activities from the General Fund to the Grants Revenue Fund, a similar system of advances has resulted in the use of tax revenues or other operating revenues in the General Fund to make expenditures from the Grants Revenue Fund, which advances may be outstanding for multiple Fiscal Years, but which are expected to be reimbursed by the Commonwealth.

Procedures governing the City's cash management operations require the General Fund-related operating fund to borrow initially from the General Fund-related capital fund, and only to the extent there is a deficiency in such fund may the General Fund-related operating fund borrow money from any other funds in the Consolidated Cash Account.

Investment Practices

Cash balances in each of the City's funds are managed to maintain daily liquidity to pay expenses, and to make investments that preserve principal while striving to obtain the maximum rate of return. In accordance with the Home Rule Charter, the City Treasurer is the City official responsible for managing cash collected into the City Treasury. The available cash balances in excess of daily expenses are placed in demand accounts, swept into money market mutual funds, or used to make investments directed by professional investment managers. These investments are held in segregated trust accounts at a separate financial institution. Cash balances related to revenue bonds for water and sewer and the airport are directly deposited and held separately in trust. A fiscal agent manages these cash balances per the related bond documents and the investment practice is guided by administrative direction of the City Treasurer per the Investment Committee and the Investment Policy (as described below). In addition, certain operating cash deposits (such as Community Behavioral Health, Special Gas/County Liquid and "911" surcharge) of the City are restricted by purpose and required to be segregated into accounts in compliance with federal or Commonwealth reporting.

Investment guidelines for the City are embodied in section 19-202 of the Philadelphia Code. In furtherance of these guidelines, as well as Commonwealth and federal legislative guidelines, the Director of Finance adopted a written Investment Policy (the "Policy") that went into effect in August 1994 and was most recently revised in September 2014. The Policy supplements other legal requirements and establishes guiding principles for the overall administration and effective management of all of the City's monetary funds (except the Municipal Pension Fund, the PGW Retirement Reserve Fund, the PGW OPEB Trust and the PGW Workers' Compensation Reserve Fund).

The Policy delineates the authorized investments as authorized by the Philadelphia Code and the funds to which the Policy applies. The authorized investments include U.S. government securities, U.S. treasuries, U.S. agencies, repurchase agreements, commercial paper, corporate bonds, money market mutual funds, obligations of the Commonwealth, collateralized banker's acceptances and certificates of deposit, and collateralized mortgage obligations and pass-through securities directly issued by a U.S. agency or instrumentality, all of investment grade rating or better and with maturity limitations.

U.S. government treasury and agency securities carry no limitation as to the percent of the total portfolio. Repurchase agreements, money market mutual funds, commercial paper, and corporate bonds are limited to investment of no more than 25% of the total portfolio. Obligations of the Commonwealth and collateralized banker's acceptances and certificates of deposit are limited to no more than 15% of the total portfolio. Collateralized mortgage obligations and pass-through securities directly issued by a U.S. agency or instrumentality are limited to no more than 5% of the total portfolio.

U.S. government securities carry no limitation as to the percent of the total portfolio per issuer. U.S. agency securities are limited to no more than 33% of the total portfolio per issuer. Repurchase agreements and money market mutual funds are limited to no more than 10% of the total portfolio per issuer. Commercial paper, corporate bonds, obligations of the Commonwealth, collateralized banker's acceptances and certificates of deposit, and collateralized mortgage obligations and pass-through securities directly issued by a U.S. agency or instrumentality are limited to no more than 3% of the total portfolio per issuer.

The Policy provides for an ad hoc Investment Committee consisting of the Director of Finance, the City Treasurer and one representative each from the Water Department, the Division of Aviation, and PGW. The Investment Committee meets quarterly with each of the investment managers to review each manager's performance to date and to plan for the next quarter. Investment managers are given any changes in investment instructions at these meetings. The Investment Committee approves all modifications to the Policy. The Investment Committee may from time to time review and revise the Policy and does from time to time approve temporary waivers of the restrictions on assets based on cash management needs and recommendations of investment managers.

The Policy expressly forbids the use of any derivative investment product as well as investments in any security whose yield or market value does not follow the normal swings in interest rates. Examples of these types of securities include, but are not limited to: structured notes, floating rate (excluding U.S. Treasury and U.S. agency floating rate securities) or inverse floating rate instruments, securities that could result in zero interest accrual if held to maturity, and mortgage derived interest and principal only strips. The City currently makes no investments in derivatives.

DEBT OF THE CITY

General

Section 12 of Article IX of the Constitution of the Commonwealth provides that the authorized debt of the City "may be increased in such amount that the total debt of [the] City shall not exceed 13.5% of the average of the annual assessed valuations of the taxable realty therein, during the ten years immediately preceding the year in which such increase is made, but [the] City shall not increase its indebtedness to an amount exceeding 3.0% upon such average assessed valuation of realty, without the consent of the electors thereof at a public election held in such manner as shall be provided by law." The Supreme Court of Pennsylvania has held that bond authorizations once approved by the voters need not be reduced as a result of a subsequent decline in the average assessed value of City property.

The Constitution of the Commonwealth further provides that there shall be excluded from the computation of debt for purposes of the Constitutional debt limit, debt (herein called "self-supporting debt") incurred for revenue-producing capital improvements that may reasonably be expected to yield revenue in excess of operating expenses sufficient to pay interest and sinking fund charges thereon. In the case of general obligation debt, the amount of such self-supporting debt to be so excluded must be determined by the Court of Common Pleas of Philadelphia County upon petition by the City. Self-supporting debt is general obligation debt of the City, with the only distinction from tax-supported debt being that it is not used in the calculation of the Constitutional debt limit. Self-supporting debt has no lien on any particular revenues.

For purposes of the following discussion, the approximately $138 million of general obligation debt approved by the voters of the City on January 15, 2015 has been included. Using the methodology described above, as of January 15, 2015, the Constitutional debt limitation for tax-supported general obligation debt was approximately $3,011,158,000. The total amount of authorized debt applicable to the debt limit was $1,751,044,000, including $724,949,000 of authorized but unissued debt, leaving a legal debt margin of $1,260,114,000. The calculation of the legal debt margin is as follows:

Table 35
General Obligation Bonded Debt
January 15, 2015
(Amounts in Thousands of USD)

Authorized, issued and outstanding	$1,379,700
Authorized and unissued	724,949
Total	$2,104,649
Less: Self-supporting debt	(353,605)
Less: Serial bonds maturing within a year	0
Total amount of authorized debt applicable to debt limit	1,751,044
Legal debt limit	3,011,158
Legal debt margin	$1,260,114

As a result of the implementation of the City's AVI, the assessed value of taxable real estate within the City has increased substantially. See "REVENUES OF THE CITY – Real Property Taxes Assessment and Collection." The $3.011 billion Constitutional debt limit calculation includes one year of property values certified under the City's AVI program, and nine years of property values under the City's former property valuation process. Assuming no increase or decrease in property values used to calculate the Constitutional debt limit in Table 35, the Constitutional debt limit is estimated to be $14.473 billion by 2024.

The City is also empowered by statute to issue revenue bonds and, as of February 28, 2015, had outstanding $1,779,781,000 aggregate principal amount of Water and Wastewater Revenue Bonds ("Water Bonds"), $1,008,775,000 aggregate principal amount of Gas Works Revenue Bonds, and $1,256,265,000 aggregate principal amount of Airport Revenue Bonds. As of February 28, 2015, the principal amount of PICA bonds outstanding was $363,640,000. In addition, the City has enacted an ordinance authorizing the issuance of and intends to issue in Fiscal Year 2015 approximately $300 million aggregate principal amount of Water Bonds. The City has enacted an ordinance authorizing the issuance of approximately $120 million and $350 million aggregate principal amount in commercial paper for PGW and the Division of Aviation, respectively.

Short-Term Debt

The City issued $130 million of Tax and Revenue Anticipation Notes on November 25, 2014, which mature on June 30, 2015. See "CITY CASH MANAGEMENT AND INVESTMENT POLICIES – General Fund Cash Flow."

Long-Term Debt

The table on the following page presents a synopsis of the bonded debt of the City and its component units as of the date indicated. Of the total balance of City general obligation bonds issued and outstanding as of February 28, 2015, approximately 23% is scheduled to mature within five Fiscal Years and approximately 49% is scheduled to mature within ten Fiscal Years. When PICA's outstanding bonds are included with the City general obligation bonds, approximately 60% is scheduled to mature within ten Fiscal Years.

Table 36
Bonded Debt -- City of Philadelphia and Component Units
as of February 28, 2015
(Amounts in Thousands of USD)[(1), (2)]

General Obligation and PICA bonds		
General Obligation Bonds		$1,379,700
PICA		363,640
Subtotal General Obligation and PICA bonds		1,743,340
Other Long-Term Debt-Related Obligations[(3)]		
Philadelphia Municipal Authority		
Municipal Services Building capital appreciation bonds	$ 7,337	
Criminal Justice Center	68,365	
Juvenile Justice Center	93,700	
Public Safety Campus	65,155	
Fleet Management Equipment Lease	14,850	
Energy Conservation	11,965	261,372
Philadelphia Authority for Industrial Development		
Pension capital appreciation bonds	$688,866	
Pension fixed rate bonds	761,655	
Stadiums	289,900	
Library	7,185	
Cultural and Commercial Corridor	108,085	
One Parkway	37,010	
Philadelphia School District	57,515	1,950,216
Parking Authority		13,020
Redevelopment Authority		212,465
Subtotal		$4,180,413
Revenue bonds		
Water Fund		1,779,781
Aviation Fund		1,256,265
Gas Works		1,008,775
Subtotal: Revenue bonds		$4,044,821
Grand total		$8,225,234

(1) Unaudited.
(2) For tables setting forth a ten-year historical summary of tax-supported debt of the City and the School District and the debt service requirements to maturity of the City's outstanding bonded indebtedness as of June 30, 2014, see the Fiscal Year 2014 CAFR.
(3) The principal amount outstanding relating to the PAID 1999 Pension Obligation Bonds, Series B (capital appreciation bonds) and the PMA Municipal Services Building Rental Bonds, Series 1990C (capital appreciation bonds) are reflected as the accreted value thereon as of February 28, 2015.

Table 37
City of Philadelphia
Annual Debt Service on City-Related Long-Term Debt
(as of February 28, 2015)
(Amounts in Millions of USD)[1]

Fiscal Year	General Obligation Bonds[2] Principal	Interest[4]	Total	Other Long-Term Obligations[3] Principal	Interest[4]	Total	Total Principal	Interest	Total
2016	$59.18	$68.37	$127.54	$101.86	$143.03	$244.88	$161.03	$211.40	$372.43
2017	62.09	65.36	127.45	102.02	142.67	244.69	164.10	208.03	372.14
2018	65.10	62.14	127.24	108.88	141.78	250.66	173.97	203.92	377.89
2019	68.36	58.77	127.13	74.51	140.93	215.44	142.87	199.70	342.57
2020	70.33	55.32	125.65	65.47	140.75	206.23	135.80	196.07	331.88
2021	63.36	52.06	115.41	80.71	125.60	206.31	144.07	177.65	321.72
2022	66.19	48.88	115.06	78.54	127.78	206.32	144.73	176.66	321.39
2023	70.55	45.40	115.95	115.99	90.33	206.32	186.53	135.74	322.27
2024	74.10	41.68	115.77	116.03	90.30	206.33	190.12	131.98	322.11
2025	77.74	37.79	115.53	120.58	85.76	206.34	198.31	123.56	321.87
2026	74.09	33.96	108.05	136.29	69.23	205.52	210.38	103.19	313.57
2027	77.65	30.11	107.76	162.04	46.10	208.14	239.69	76.22	315.90
2028	81.96	26.20	108.15	167.32	36.72	204.04	249.28	62.92	312.20
2029	55.53	22.94	78.47	279.65	19.63	299.28	335.17	42.58	377.75
2030	71.45	19.87	91.31	55.95	9.72	65.66	127.39	29.59	156.98
2031	75.15	16.27	91.42	58.57	7.11	65.68	133.72	23.38	157.10
2032	79.02	12.47	91.49	16.03	4.89	20.92	95.05	17.37	112.42
2033	43.22	9.37	52.59	7.40	4.29	11.69	50.61	13.67	64.28
2034	30.41	7.40	37.80	7.81	3.88	11.69	38.22	11.28	49.49
2035	15.55	6.15	21.69	8.26	3.43	11.69	23.80	9.58	33.38
2036	16.42	5.27	21.69	8.73	2.96	11.69	25.15	8.23	33.38
2037	17.33	4.36	21.69	9.23	2.46	11.69	26.56	6.82	33.38
2038	18.31	3.38	21.69	9.76	1.93	11.69	28.07	5.31	33.37
2039	19.37	2.32	21.69	10.33	1.37	11.69	29.70	3.69	33.38
2040	8.52	1.50	10.02	3.31	0.77	4.08	11.83	2.26	14.09
2041	9.10	0.93	10.02	3.45	0.62	4.07	12.55	1.55	14.10
2042	9.71	0.32	10.02	3.60	0.48	4.07	13.30	0.79	14.09
2043	0.00	0.00	0.00	3.75	0.33	4.08	3.75	0.33	4.08
2044	0.00	0.00	0.00	3.91	0.17	4.08	3.91	0.17	4.08
TOTAL	**$1,379.70**	**$738.59**	**$2,118.29**	**$1,919.93**	**$1,445.03**	**$3,364.96**	**$3,299.63**	**$2,183.62**	**$5,483.25**

(1) Does not include letter of credit fees.
(2) Does not include PICA Bonds.
(3) Includes PAID, PMA, PPA, and PRA bonds. Annual payment for certain items in this category are included in Table 36.
(4) Assumes interest rate to be fixed swap rate on hedged variable rate bonds plus any fixed spread. Net of capitalized interest on the PAID 2012 Service Agreement Revenue Refunding Bonds.

Other Long-Term Debt Related Obligations

The City has entered into other contracts and leases to support the issuance of debt by public authorities related to the City pursuant to which the City is required to budget and appropriate tax or other general revenues to satisfy such obligations, as shown on Table 36. The City budgets all other long-term debt-related obligations as a single budget item with the exception of PPA, which has a budget of $1,335,875 for Fiscal Year 2015.

The Hospitals Authority and the State Public School Building Authority have issued bonds on behalf of the Community College of Philadelphia ("CCP"). Under the Community College Act (Pa. P.L. 103, No. 31 (1985)), each community college must have a local sponsor, which for CCP is the City. As the local sponsor, the City is obligated to pay up to 50% of the annual capital expenses of CCP, which includes debt service. The remaining 50% is paid by the Commonwealth. Additionally, the City annually appropriates funds for a portion of CCP's operating costs (less tuition and less the Commonwealth's payment). The amount paid by the City in Fiscal Year 2014 was $26.4 million. The budgeted amount and current estimate for Fiscal Year 2015 is $26.9 million.

PICA Bonds

PICA has issued 11 series of bonds at the request of the City. PICA no longer has authority under the PICA Act to issue bonds for new money purposes, but may refund bonds previously issued. As of February 28, 2015, two series of bonds remain outstanding: (i) Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 2009, in the outstanding aggregate principal amount of $220,135,000 and having a final stated maturity date of June 15, 2023, and (ii) Special Tax Revenue Refunding Bonds (City of Philadelphia Funding Program), Series of 2010, in the outstanding aggregate principal amount of $143,505,000 and having a final stated maturity date of June 15, 2022. The proceeds of the bonds issued by PICA were used to (a) make grants to the City to fund its General Fund deficits, to fund the costs of certain City capital projects, to provide other financial assistance to the City to enhance operational productivity, and to defease certain City general obligation bonds, (b) refund other PICA bonds and (c) pay costs of issuance.

The PICA Act authorizes the City to impose a tax for the sole and exclusive purposes of PICA. In connection with the adoption of the Fiscal Year 1992 budget and the execution of the PICA Agreement, the City reduced the wage, earnings, and net profits taxes on City residents by 1.5% and enacted a new tax of 1.5% on wages, earnings and net profits of City residents (the "PICA Tax"). See "THE GOVERNMENT OF THE CITY OF PHILADELPHIA – Local Government Agencies – *Non-Mayoral-Appointed or Nominated Agencies* – PICA." The PICA Tax, collected by the City's Department of Revenue, as agent of the State Treasurer, is deposited in the Pennsylvania Intergovernmental Cooperation Authority Tax Fund (the "PICA Tax Fund") of which the State Treasurer is custodian. The PICA Tax Fund is not subject to appropriation by City Council or the General Assembly.

The PICA Act authorizes PICA to pledge the PICA Tax to secure its bonds and prohibits the Commonwealth and the City from repealing the PICA Tax or reducing its rate while any PICA bonds are outstanding. PICA bonds are payable from PICA revenues, including the PICA Tax, pledged to secure PICA's bonds, the Bond Payment Account (as described below) and any debt service reserve fund established for such bonds and have no claim on any revenues of the Commonwealth or the City.

The PICA Act establishes a "Bond Payment Account" for PICA as a trust fund for the benefit of PICA bondholders and authorizes the creation of a debt service reserve fund for bonds issued by PICA. The State Treasurer is required to pay the proceeds of the PICA Tax held in the PICA Tax Fund directly to the Bond Payment Account. The proceeds of the PICA Tax in excess of amounts required for (i) debt service, (ii) replenishment of any debt service reserve fund for bonds issued by PICA, and (iii) certain PICA operating expenses, are required to be deposited in a trust fund established exclusively to benefit the City and designated the "City Account." Amounts in the City Account are required to be remitted to the City not less often than monthly, unless PICA certifies the City's non-compliance with the then-current five-year financial plan.

The total amount of PICA Tax remitted by the State Treasurer to PICA (which is net of the costs of the State Treasurer in collecting the PICA Tax), PICA annual debt service and investment expenses, and net PICA tax revenue remitted to the City for each of the Fiscal Years 2011 through 2014 and the budgeted amount and current estimate for Fiscal Year 2015 are set forth below. The Fiscal Year 2014 unaudited figures and the current estimates for Fiscal Year 2015 are from the Quarterly City Manager's Report for the period ending December 31, 2014.

Table 38
Summary of PICA Tax Remitted by the State Treasurer to PICA and Net Taxes Remitted by PICA to the City
(Amounts in Millions of USD)

Fiscal Year	PICA Tax	PICA Annual Debt Service and Investment Expenses	Net taxes remitted to the City
2011 (Actual)	358.7	64.9	293.8
2012 (Actual)	357.5	62.3	295.2
2013 (Actual)	376.5	62.5	314.0
2014 (Unaudited)	384.5	65.8	318.7
2015 (Budget)	403.7	65.7	338.0
2015 (Current Estimate)	402.7	65.7	337.0

OTHER FINANCING RELATED MATTERS

Swap Information

The City has entered into various swaps related to its outstanding General Fund-supported bonds as detailed in the table on the following page:

Table 39
Summary of Swap Information
for General Fund-Supported Bonds
as of February 27, 2015

City Entity	City GO	City Lease PAID	City Lease PAID	City Lease PAID	City Lease PAID	City Lease PAID
Related Bond Series	2009B[1]	2007A (Stadium)[2]	2007B-2,3 (Stadium)[3],[5]	2014A (Stadium)[3]	2007B-2,3 (Stadium)[3],[6]	2014A (Stadium)[3]
Initial Notional Amount	$313,505,000	$298,485,000	$217,275,000	$87,961,255	$72,400,000	$29,313,745
Current Notional Amount	$100,000,000	$193,520,000	$87,758,745	$87,961,255	$29,246,255	$29,313,745
Termination Date	8/1/2031	10/1/2030	10/1/2030	10/1/2030	10/1/2030	10/1/2030
Product	Fixed Payer Swap	Basis Swap	Fixed Payer Swap	Fixed Payer Swap	Fixed Payer Swap	Fixed Payer Swap
Rate Paid by Dealer	SIFMA	67% 1-month LIBOR + 0.20% plus fixed annuity	SIFMA	70% 1-month LIBOR	SIFMA	70% 1- month LIBOR
Rate Paid by City Entity	3.829%	SIFMA	3.9713%	3.62%	3.9713%	3.632%
Dealer	Royal Bank of Canada	Merrill Lynch Capital Services, Inc.	JPMorgan Chase Bank, N.A.	JPMorgan Chase Bank, N.A.	Merrill Lynch Capital Services, Inc.	Merrill Lynch Capital Services, Inc.
Fair Value[4]	($23,744,865)	($3,221,208)	($19,982,050)	($19,439,520)	($6,659,595)	($6,512,791)
Additional Termination Events	For Dealer: Rating change below BBB- or Baa3 For City: Rating change below BBB- or Baa3 upon insurer event (includes insurer being rated below A- or A3)	For Dealer: Rating change below BBB- or Baa3 For PAID: Rating change below BBB- or Baa3 upon insurer event.	For Dealer: Rating change below BBB- or Baa3 For PAID: Rating change below BBB- or Baa3 upon insurer event (includes insurer being rated below A- or A3)	For Dealer: Rating change below BBB- or Baa3 For PAID: Rating change below BBB- or Baa3 upon insurer event (includes insurer being rated below A- or A3)	For Dealer: Rating change below BBB- or Baa3 For PAID: Rating change below BBB- or Baa3 upon insurer event (includes insurer being rated below A- or A3)	For Dealer: Rating change below BBB- or Baa3 For PAID: Rating change below BBB- or Baa3 upon insurer event (includes insurer being rated below A- or A3)

(1) On July 28, 2009, the City terminated a portion of the swap in the amount of $213,505,000 in conjunction with the refunding of its Series 2007B bonds with the Series 2009A fixed rate bonds and the Series 2009B variable rate bonds. The City made a termination payment of $15,450,000.

(2) PAID received annual fixed payments of $1,216,500 from July 1, 2004 through July 1, 2013. As the result of an amendment on July 14, 2006, $104,965,000 of the total notional amount was restructured as a constant maturity swap (the rate received by PAID on that portion was converted from a percentage of 1-month LIBOR to a percentage of the 5-year LIBOR swap rate from October 1, 2006 to October 1, 2020). The constant maturity swap was terminated in December 2009. The City received a termination payment of $3,049,000.

(3) On May 13, 2014, PAID converted a portion of the 2007B SIFMA Swap to a LIBOR-based swap in conjunction with the refunding of its Series 2007B bonds with the Series 2014A bonds. Under the conversion, PAID pays a fixed rate of 3.62% and 3.632% to JPMorgan and Merrill Lynch, respectively, and receives a floating rate of 70% of 1-month LIBOR.

(4) Fair values are as of February 27, 2015, and are shown from the City's perspective and include accrued interest.

(5) On July 21, 2014, PAID terminated a portion of the swap in the amount of $41,555,000 in conjunction with the refunding of its Series 2007B bonds with the Series 2014B fixed rate bonds. PAID made a termination payment of $4,171,000 to JPMorgan.

(6) On July 21, 2014, PAID terminated a portion of the swap in the amount of $13,840,000 in conjunction with the refunding of its Series 2007B bonds with the Series 2014B fixed rate bonds. PAID made a termination payment of $1,391,800 to MLCS.

While the City is party to several interest rate swap agreements, for which there is General Fund exposure and on which the swaps currently have a negative mark against the City, the City has no obligation to post collateral on these swaps while the City's underlying ratings are investment grade.

For more information related to certain swaps entered into in connection with revenue bonds issued for PGW, the Water Department, and the Division of Aviation, see the Fiscal Year 2014 CAFR. In addition, PICA has entered into swaps, which are detailed in the Fiscal Year 2014 CAFR.

Swap Policy

The City has adopted a swap policy for the use of swaps, caps, floors, collars and other derivative financial products (collectively, "swaps") in conjunction with the City's debt management. The swap program managed by the City includes swaps related to general obligation debt, tax-supported service contract debt issued by related authorities, debt of the Water Department, Division of Aviation, and debt of PGW. Swaps related to debt of the PICA, the School District, and the PPA are managed by those governmental entities, respectively.

The Director of Finance has overall responsibility for entering into swaps. Day-to-day management of swaps is the responsibility of the City Treasurer, and the Executive Director of the Sinking Fund Commission is responsible for making swap payments. The Office of the City Treasurer and the City Solicitor's Office coordinate their activities to ensure that all swaps that are entered into are in compliance with applicable federal, state, and local laws.

The swap policy addresses the circumstances when swaps can be used, the risks that need to be evaluated prior to entering into swaps and on an ongoing basis after swaps have been executed, the guidelines to be employed when swaps are used, and how swap counterparties will be chosen. The swap policy is used in conjunction with the City's Debt Management Policy, reviewed annually, and updated as needed.

Under the swap policy, permitted uses of swaps include: (i) managing the City's exposure to floating interest rates through interest rate swaps, caps, floors and collars; (ii) locking in fixed rates in current markets for use at a later date through the use of forward starting swaps and rate locks; (iii) reducing the cost of fixed or floating rate debt through swaps and related products to create "synthetic" fixed or floating rate debt; and (iv) managing the City's credit exposure to financial institutions and other entities through the use of offsetting swaps.

Since swaps can create exposure to the creditworthiness of financial institutions that serve as the City's counterparties on swap transactions, the City has established standards for swap counterparties. As a general rule, the City enters into transactions with counterparties whose obligations are rated in the double-A rated category or better from two nationally recognized rating agencies. If counterparty's credit rating is downgraded below the double-A rating category, the swap policy requires that the City's exposure be collateralized. If a counterparty's credit is downgraded below the A category, even with collateralization, the swap policy requires a provision in the swap permitting the City to exercise a right to terminate the transaction prior to its scheduled termination date.

Letter of Credit Agreements

The City has entered into various letter of credit agreements related to its General Fund-supported bonds as detailed in the table below. Under the terms of such letter of credit agreements, following a purchase of the applicable bonds, the City may be required to amortize such bonds more quickly than as originally scheduled at issuance.

Table 40
Summary of Letter of Credit Agreements for General Fund-Supported Bonds as of February 28, 2015

Variable Rate Bond Series	Amount Outstanding	Bond Maturity Date	Provider	Expiration Date	Rating Thresholds [1]
General Obligation Bonds, Series 2009B	$100,000,000	August 1, 2031	Bank of New York Mellon	March 7, 2016	The long-term rating assigned by any one of the rating agencies to any unenhanced long-term parity debt of the City is (i) withdrawn or suspended for credit-related reasons or (ii) reduced below investment grade.
PAID Multi-Modal Lease Revenue Refunding Bonds, Series 2007B-2	72,400,000	October 1, 2030	TD Bank	May 29, 2019	The long-term ratings assigned by at least two of the rating agencies to any unenhanced general obligation bonds of the City is (i) withdrawn or suspended for credit-related reasons, or (ii) reduced below investment grade.
PAID Multi-Modal Lease Revenue Refunding Bonds, Series 2007B-3	44,605,000	October 1, 2030	PNC Bank	May 23, 2017	The long-term ratings assigned by at least two of the rating agencies to any unenhanced general obligation bonds of the City is (i) withdrawn or suspended for credit-related reasons, or (ii) reduced below investment grade.

(1) The occurrence of a Rating Threshold event would result in an event of default under the reimbursement agreement with the related bank.

Recent and Upcoming Financings

Recent Financings. The following is a list of financings that the City has entered into since January 1, 2014:

- In November 2014, the City issued $130,000,000 of tax and revenue anticipation notes, which mature on June 30, 2015.

- In October 2014, the City, through PAID, issued $57,515,000 in City Service Agreement Bonds for the benefit of the School District and to refund the $27,275,000 in City Service Agreement Bonds that were issued for the benefit of the School District in June 2014.

- In August 2014, the City, together with PGW, authorized its $150,000,000 Gas Works Revenue Notes, CP Series G and its $120,000,000 Gas Works Revenue Capital Project Commercial Paper Notes, which are each secured by a dual-purpose letter of credit for up to $120,000,000.

- In July 2014, the City, through PAID, issued $56,655,000 of Lease Revenue Refunding Bonds, the proceeds of which were used to refund bonds previously issued to finance a portion of the costs of stadiums used by the Phillies and the Eagles.

- In the second quarter of 2014, the City, through PAID, refunded the Series 2007B-1 bonds with direct purchase floating rate notes, indexed to a percentage of 1-month LIBOR, and concurrently re-indexed associated portions of the related swaps to the same LIBOR index.

- In April 2014, the City, through PMA, issued City Service Agreement Bonds in the aggregate principal amount of $65,155,000.

- In February 2014, the City issued General Obligation Refunding Bonds in the amount of $154,275,000.

- In January 2014, the City, together with the Water Department, issued $123,170,000 in Water Bonds.

Upcoming Financings. The following is a list of planned financings for bonds and notes that the City expects to issue in calendar year 2015:

- The City, together with the Water Department, expects to issue Water Bonds to finance capital projects and refund certain outstanding series of such bonds.

- The City, through PRA, expects to issue City Service Agreement Bonds to refund certain outstanding series of such bonds.

- The City, together with PGW, expects to issues its Gas Works Revenue Bonds to refund certain outstanding series of such bonds.

- The City expects to issue General Obligation Bonds to refund certain outstanding series of such bonds and finance certain capital projects.

- The City, through PAID, expects to issue City Service Agreement Bonds to refund certain outstanding series of such bonds.

- The City, together with the Division of Aviation, expects to issue Airport Revenue Bonds to refund certain outstanding series of such bonds

- The City expects to issue $175 million of its tax and revenue anticipation notes to finance certain cash flow needs of the City.

- The City, through PMA, expects to issue City Service Agreement Bonds to finance certain capital projects.

CITY CAPITAL IMPROVEMENT PROGRAM

The City's amended Capital Improvement Program for Fiscal Years 2015-2020, approved by City Council on October 30, 2014 and signed by the Mayor on November 12, 2014, contemplates a total budget of $9,409,806,000, of which $2,611,250,000 is to be provided from federal, Commonwealth, and other sources and the remainder through City funding. The Proposed Capital Improvement Program for Fiscal Years 2016-2021, submitted to City Council on March 5, 2015 and included as part of the Proposed Twenty-Fourth Five-Year Plan, contemplates a total budget of $8,962,447,000. In the Proposed Capital Improvement Program, $3,574,338,000 is expected to be provided from federal, Commonwealth, and other sources and the remainder through City funding. The table on the following page shows the amounts budgeted each year from various sources of funds for capital projects in the Proposed Capital Improvement Program.

Table 41
Proposed Capital Improvement Program for Fiscal Years 2016-2021
(Amounts in Thousands of USD)

	2016	2017	2018	2019	2020	2021	2016-2021
City Funds – Tax Supported							
Carried-Forward Loans	$326,185	$0	$0	$0	$0	$0	**$326,185**
Operating Revenue	24,764	4,014	2,514	2,514	2,514	2,514	**38,834**
New Loans	169,563	142,331	134,592	130,675	127,011	127,201	**831,373**
Pre-financed Loans	9,599	0	0	0	0	0	**9,599**
PICA Pre-financed Loans	7,507	0	0	0	0	0	**7,507**
Tax Supported Subtotal	$537,618	$146,345	$137,106	$133,189	$129,525	$129,715	**$1,213,498**
City Funds – Self Sustaining							
Self-Sustaining Carried-Forward Loans	$811,167	$0	$0	$0	$0	$0	**$811,167**
Self-Sustaining Operating Revenue	150,276	79,297	86,295	81,579	86,502	95,485	**579,434**
Self-Sustaining New Loans	501,750	465,811	449,493	454,736	456,444	440,776	**2,769,010**
Self-Sustaining Subtotal	$1,463,193	$545,108	$535,788	$536,315	542,946	536,261	**$4,159,611**
Other City Funds							
Revolving Funds	$15,000	$0	$0	$0	$0	$0	**$15,000**
Other Than City Funds							
Carried-Forward Other Government	$2,714	$0	$0	$0	$0	$0	**$2,714**
Other Governments Off Budget	2,253	2,429	1,746	1,744	1,684	1,573	**11,429**
Other Governments	7,000	0	0	0	0	0	**7,000**
Carried-Forward State	100,523	0	0	0	0	0	**100,523**
State Off Budget	181,842	207,356	213,810	214,097	214,122	211,865	**1,243,092**
State	35,850	36,126	41,210	43,046	41,259	40,861	**238,352**
Carried-Forward Private	114,046	0	0	0	0	0	**114,046**
Private	183,008	146,978	146,671	151,561	166,688	164,113	**959,019**
Carried-Forward Federal	154,189	0	0	0	0	0	**154,189**
Federal Off Budget	74,565	60,394	47,722	25,382	14,449	0	**222,512**
Federal	110,450	79,749	82,633	77,215	89,618	81,797	**521,462**
Other than City Funds Subtotal	$966,440	$533,032	$533,792	$513,045	$527,820	$500,209	**$3,574,338**
TOTAL – ALL FUNDS	**$2,982,251**	**$1,224,485**	**$1,206,686**	**$1,182,549**	**$1,200,291**	**$1,166,185**	**$8,962,447**

LITIGATION

Generally, judgments and settlements on claims against the City are payable from the General Fund, except for claims against the Water Department, the Division of Aviation, and PGW, which are paid out of their respective funds or revenues and only secondarily out of the General Fund.

The Act of October 5, 1980, P.L. 693, No. 142, known as the "Political Subdivision Tort Claims Act," (the "Tort Claims Act") establishes a $500,000 aggregate limitation on damages for injury to a person or property arising from the same cause of action or transaction or occurrence or series of causes of action, transactions or occurrences with respect to governmental units in the Commonwealth such as the City. The constitutionality of that aggregate limitation on damages has been previously upheld by the Pennsylvania appellate courts, including in the recent decision of the Supreme Court of Pennsylvania in *Zauflik v. Pennsbury School District*, 104 A.3d 1096 (2014). Under Pennsylvania Rule of Civil Procedure 238, delay damages are not subject to the $500,000 limitation. The limit on damages is inapplicable to any suit against the City that does not arise under state tort law, such as claims made against the City under federal civil rights laws.

On February 19, 2014, legislation was introduced in the General Assembly that would increase the $500,000 limitation described in the preceding paragraph. Such legislation would increase the damages limitation to $10 million and has been referred to the Committee on Judiciary. As of the date of this Official Statement, there has been no further action on this legislation in the General Assembly.

General Fund

The following table presents the City's aggregate losses from settlements and judgments paid out of the General Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015.

Table 42
Aggregate Losses – General and Special Litigation Claims (General Fund)
Fiscal Years 2011-2013 (Actual) and 2014-2015 (Current Estimate)
(Amounts in Millions of USD)

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Current Estimate 2015
Aggregate Losses	$33.6	$32.6	$30.3	$41.0	$39.7

Source: The City's adopted budgets for Fiscal Years 2012-2015.

Based on the Proposed Twenty-Fourth Five-Year Plan, the current estimate of settlements and judgments from the General Fund for Fiscal Years 2016-2020 is $38.0 million for each such Fiscal Year.

In budgeting for settlements and judgments in the annual Operating Budget and projecting settlements and judgments for each five-year plan, the City bases its estimates on past experience and on an analysis of estimated potential liabilities and the timing of outcomes, to the extent a proceeding is sufficiently advanced to permit a projection of the timing of a result. General and special litigation claims are budgeted separately from back-pay awards and similar settlements relating to labor disputes. Usually, some of the costs arising from labor litigation are reported as part of current payroll expenses. For Fiscal Year 2013, payments from the General Fund for claims arising from employee disputes totaled $1,147,697 of which $359,280 was paid from the Indemnities account and $788,417 from the operating budgets of the affected departments. For Fiscal Year 2014, payments from the General Fund for these claims totaled $542,904 of which $522,404 was paid from the Indemnities account, and $20,500 from the operating budgets of the affected departments.

In addition to routine litigation incidental to performance of the City's governmental functions and litigation arising in the ordinary course relating to contract and tort claims and alleged violations of law, certain special litigation matters are currently being litigated and/or appealed and adverse final outcomes of such litigation could have a substantial or long-term adverse effect on the General Fund. These proceedings involve: (i) environmental-related actions and proceedings in which it has been or may be alleged that the City is liable for damages, including but not limited to property damage and bodily injury, or that the City should pay fines or penalties or the costs of response or remediation, because of the alleged generation, transport, or disposal of toxic or otherwise hazardous substances by the City, or the alleged disposal of such substances on or to City-owned property; (ii) contract disputes and other commercial litigation; and (iii) union arbitrations and other employment-related litigation. The ultimate outcome and fiscal impact, if any, on the General Fund of the claims and proceedings described in this paragraph are not currently predictable.

Water Fund

Various claims have been asserted against the Water Department and in some cases lawsuits have been instituted. Many of these Water Department claims have been reduced to judgment or otherwise settled in a manner requiring payment by the Water Department. The following table presents the Water Department's aggregate losses from settlements and judgments paid out of the Water Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015. The Water Fund is the first source of payment for any of the claims against the Water Department.

Table 43
Aggregate Losses – General and Special Litigation Claims (Water Fund)
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)
(Amounts in Millions of USD)

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Current Estimate 2015
Aggregate Losses	$5.4	$3.1	$5.1	$6.1	$6.5

Source: The City's adopted budgets for Fiscal Years 2012-2015.

Aviation Fund

Various claims have been asserted against the Division of Aviation and in some cases lawsuits have been instituted. Many of these Division of Aviation claims have been reduced to judgment or otherwise settled in a manner requiring payment by the Division of Aviation. The following table presents the Division of Aviation's aggregate losses from settlements and judgments paid out of the Aviation Fund for Fiscal Years 2011-2014 and the current estimate for Fiscal Year 2015. The Aviation Fund is the first source of payment for any of the claims against the Division of Aviation.

Table 44
Aggregate Losses – General and Special Litigation Claims (Aviation Fund)
Fiscal Years 2011-2014 (Actual) and 2015 (Current Estimate)

	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Current Estimate 2015
Aggregate Losses	$1.7 million	$1.3 million	$1.4 million	$665,527	$2.5 million

Source: The City's adopted budgets for Fiscal Years 2012-2015.

PGW

Various claims have been asserted against PGW and in some cases lawsuits have been instituted. Many of these PGW claims have been reduced to judgment or otherwise settled in a manner requiring payment by PGW. The following table presents PGW's settlements and judgments paid out of PGW revenues, with accompanying reserve information, in PGW Fiscal Years 2010 through 2014. PGW revenues are the first source of payment for any of the claims against PGW. PGW currently estimates approximately $4.7 million in settlements and judgments for PGW Fiscal Year 2015.

Table 45
Claims and Settlement Activity (PGW)
PGW Fiscal Years 2010-2014
(Amounts in Thousands of USD)[(1)]

Fiscal Year (ending August 31)	Beginning of Year Reserve	Current Year Claims and Adjustments	Claims Settled	End of Year Reserve	Current Liability Amount
2010	$11,881	$1,237	$(3,252)	$9,866	$5,380
2011	9,866	4,299	(3,468)	10,697	4,141
2012	10,697	3,725	(3,320)	11,102	7,664
2013	11,102	2,616	(3,307)	10,411	4,925
2014	10,411	2,498	(2,965)	9,944	4,728

(1) Source: PGW's audited financial statements.

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APPENDIX V

CITY OF PHILADELPHIA SOCIOECONOMIC INFORMATION

The City is not responsible, directly or indirectly, for payments on Water and Waste Water Revenue Bonds, which are secured solely by Project Revenues. This Appendix V is included for purposes of providing general socioeconomic information regarding the City.

TABLE OF CONTENTS

INTRODUCTION

The City of Philadelphia (the "City" or "Philadelphia") is the fifth-largest city in the nation, and is at the center of the United States' sixth largest metropolitan statistical area. The Philadelphia MSA (further described below) includes the fifth largest retail sales market in the nation, as well as a diverse network of business suppliers and complementary industries. Some of the City's top priorities include attracting and retaining knowledge workers, increasing educational attainment among Philadelphians, attracting development, and promoting Philadelphia as a desirable location for business.

According to the 2010 U.S. Census, the City increased its population by 0.6 percent in the ten years from 2000 to 2010 to 1.526 million residents, ending six decades of population decline. Although the increase was modest, it was an indicator of more recent growth and development in Philadelphia. From 2010 to 2013, the City increased its population by 1.8 percent to 1.553 million residents, which exceeded the rate of population growth projected by the Philadelphia City Planning Commission in its 2011 comprehensive plan.

Although facing challenges such as underfunded pension liabilities, high rates of poverty, and the School District of Philadelphia's (the "School District") ongoing fiscal crisis, the City benefits from its strategic geographical location, relative affordability, cultural and recreational amenities, and its growing strength in key industries.

Geography

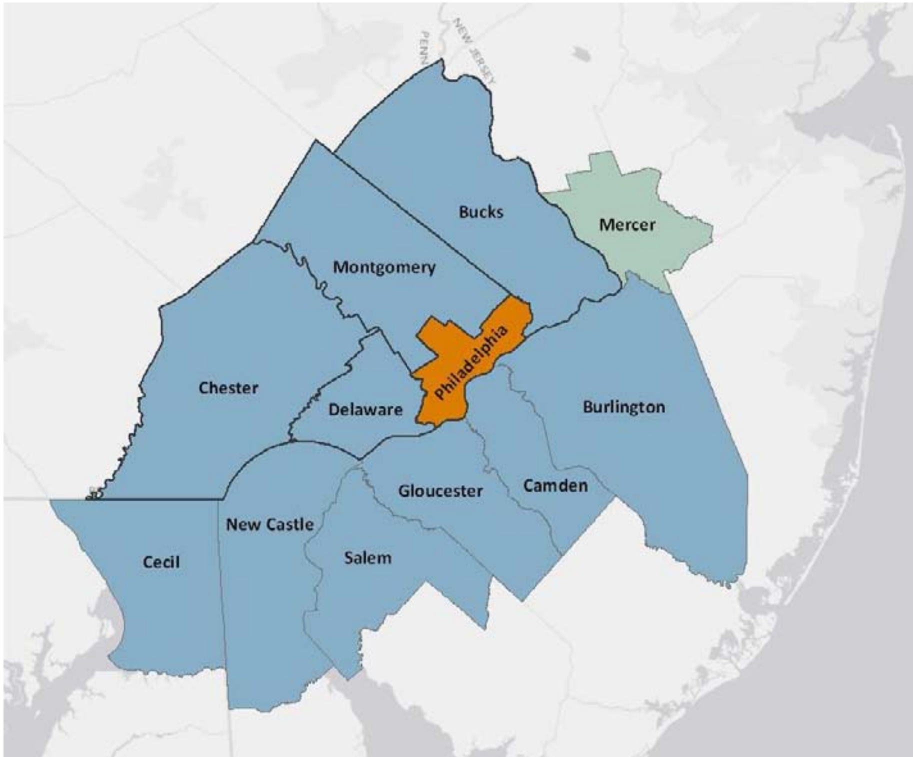
The City has an area of approximately 134 square miles, and is located along the southeastern border of the Commonwealth of Pennsylvania (the "Commonwealth"), at the confluence of the Delaware and Schuylkill Rivers. The City, highlighted in orange in Figure 1, lies at the geographical and economic center of the MSA and PMSA (described below). Philadelphia is the largest city in the Commonwealth, coterminous with the County of Philadelphia.

Philadelphia Metropolitan Statistical Area (the "MSA"), highlighted in blue in Figure 1, is the eleven-county area named the Philadelphia-Camden-Wilmington metropolitan statistical area, representing an area of approximately 5,118 square miles with approximately 6,034,678 residents.[1]

Philadelphia Primary Metropolitan Statistical Area (the "PMSA"), outlined in grey in Figure 1, is a five-county area that is within the MSA that lies in the Commonwealth and is sometimes called the Philadelphia Metropolitan Division. The counties of Bucks, Chester, Delaware, and Montgomery are referred to as the Suburban PMSA herein.

[1] Due to its close proximity and impact on the region's economy, Mercer County, New Jersey, highlighted in green in Figure 1, is included in the MSA by many regional agencies, although it is not included in the area defined by the U.S. Office of Management and Budget.

Figure 1
Map of Philadelphia Region, including the MSA, PMSA, and Mercer County, NJ



Source: 2009 TIGER County Shapefiles

Strategic Location

Philadelphia is at the center of the second largest MSA on the East Coast, and is served by a robust transportation infrastructure, including the Philadelphia International Airport, Amtrak's Northeast Corridor service, major interstate highway access, regional train service provided by Southeastern Pennsylvania Transportation Authority ("SEPTA") and New Jersey's PATCO (as defined herein), and the Port of Philadelphia. The City is within a day's drive of 50 percent of the nation's population and accessible to regional and international markets, due to the transportation infrastructure centered in the City. Philadelphia's central location along the East Coast, an hour from New York City and less than two hours from Washington, D.C. by high-speed rail, also allows for convenient access to these significant economic centers.

Essential to Philadelphia's strategic location is the region's access to public transit. The U.S. Census reports that 26.1 percent of Philadelphians used public transit to commute to work in 2013. SEPTA's regional rail service had record ridership in Fiscal Year 2014, and SEPTA public transit modes collectively had an average annual aggregate ridership increase of 1.9 percent over the last seven years.

Challenges

As evidenced by the City's development and population growth, Philadelphia has made progress transforming itself into a vibrant, attractive city over the past two decades. However, challenges still exist. At 26.3 percent, Philadelphia has the highest poverty rate of the nation's ten largest cities. The School District has experienced persistent budget deficits. The growth in charter school enrollment and state funding issues have exacerbated budget issues and resulted in spending cuts and the closure of 23 district schools in June 2013.

While Philadelphia's cultural amenities and quality of life attract millennials, generally defined as those born between 1980 and 2000, and now comprising the largest demographic group in the City, reports such as "Millennials in Philadelphia, A Promising but Fragile Boom," published by the Pew Charitable Trusts in 2014 (the "2014 Pew Report"), suggest that Philadelphia will struggle to retain these recent transplants unless it can alleviate these challenges. Although 59 percent of millennials said they would recommend the City to a friend as a place to live, only 36 percent of millennials surveyed said they would recommend Philadelphia as a place to raise children, and 56 percent responded they would not recommend the City as a place to raise children.

POPULATION AND DEMOGRAPHICS

Philadelphia is the nation's fifth largest city, with 1.553 million residents, based on 2013 U.S. Census estimates. The City's population gain from 2000 to 2010, while modest, was its first in 60 years. In the three years following the 2010 U.S. Census, the City's population grew by an additional 1.8 percent, adding an additional 27,159 residents, according to 2013 U.S. Census estimates.

From 2006 to 2012, the share of the population represented by citizens age 20 to 34 grew from 20 percent to 26 percent, becoming the largest share of Philadelphia's population. Of the 30 largest cities in the country, Philadelphia had the largest percentage point increase of millennials as a share of overall population from 2006 to 2012, according to the 2014 Pew Report referred to above. This demographic tends to be better educated than the City's and the nation's adult population as a whole. In 2013, 39.8 percent of 25- to 34-year-olds in Philadelphia held a bachelor's degree or higher, while only 32.9 percent of 25 to 34-year-olds in the United States were college graduates. The City's many universities and diverse employment opportunities are likely draws for residents in the 20 to 34 age group. In addition to an increase in the millennial population, the City's immigrant population also grew significantly, with the City's Asian population increasing 126.6 percent and the Hispanic or Latino population growing by 110.3 percent from 1990 to 2010[2].

Table 1
Population
City, MSA, Pennsylvania & Nation

	1990	2000	2010	2013	Percent Change 2000-2010	Percent Change 2010-2013
Philadelphia	**1,585,577**	**1,517,550**	**1,526,006**	**1,553,165**	**0.60%**	**1.77%**
Philadelphia-Camden-Wilmington MSA	5,437,468	5,687,147	5,965,343	6,034,678	4.89%	1.16%
Pennsylvania	11,881,643	12,281,054	12,702,379	12,773,801	3.40%	0.56%
United States	248,709,873	281,421,906	308,745,538	316,128,839	9.70%	2.39%

Source: U.S. Census Bureau, American Community Survey 2013, Census 2010, Census 2000, Census 1990.

Nearly 27 percent of Philadelphia's population is school aged and, in 2013, Philadelphia exceeded most selected peer cities in its share of students who are enrolled in an undergraduate, graduate or professional education program. Among the selected peer cities listed in Table 2, four of the six cities with the largest share of students in higher education were located in the Northeast region. Among these cities, while Boston had the highest percentage of its population enrolled in higher education, Philadelphia had 35,543 more students enrolled in higher education than Boston. Philadelphia had the sixth highest percentage of its population enrolled in higher education and the fifth largest university student population.

[2] Source: Pew Charitable Trusts Philadelphia Research Initiative 2011 report, "A City Transformed: the Racial and Ethnic Changes in Philadelphia Over the Last 20 Years."

Table 2
2013 Total Number of Students, as a Percent of Total Population of Selected Cities, Ranked by Total Number of Students Enrolled in Higher Education

City	Total Number of Students Enrolled in Higher Education	Total Number of Students Enrolled in School (all years)	Percent of All Students Enrolled in Higher Education	Percent of Total Population enrolled in Higher Education
Los Angeles, CA	349,769	1,033,797	33.83%	9.44%
Chicago, IL	237,382	718,978	33.02%	9.12%
Houston, TX	154,833	579,104	26.74%	7.50%
San Diego, CA	148,101	375,049	39.49%	11.51%
Philadelphia, PA	**147,779**	**413,283**	**35.76%**	**9.96%**
San Antonio, TX	115,793	402,022	28.80%	8.74%
Boston, MA	112,236	196,283	57.18%	18.19%
Phoenix, AZ	100,507	408,279	24.62%	7.07%
Washington, DC	75,213	160,155	46.96%	12.34%
Baltimore, MD	61,380	163,015	37.65%	10.28%
Milwaukee, WI	58,244	186,848	31.17%	10.19%
Detroit, MI	55,297	198,829	27.81%	8.27%
Memphis, TN	52,001	178,653	29.10%	12.56%
Cleveland, OH	30,009	102,704	29.22%	7.99%
United States	23,718,337	82,819,691	28.64%	7.85%

Source: 2013 American Community Survey, 3-Year Estimates

ECONOMIC BASE AND EMPLOYMENT

The Philadelphia Economy

The City's economy is composed of diverse industries, with virtually all classes of industrial and commercial businesses represented. The City is a major regional business and personal services center with strengths in insurance, law, finance, health, education, utilities, and the arts. As of 2011, approximately 174,000 residents of Philadelphia's four suburban counties (Bucks, Chester, Delaware, and Montgomery), and an additional 121,000 residents of counties outside the five-county region, worked within the City. The City also provides a destination for entertainment, arts, dining and sports for residents of the suburban counties, as well as for those residents of the counties comprising the MSA plus Mercer County, New Jersey.

The cost of living in the City is relatively moderate compared to other major metropolitan areas. The City, as one of the country's education centers, offers the business community a large, diverse, and industrious labor pool.

Key Industries

Table 3 provides location quotients for Philadelphia's most concentrated industry sectors. Location quotients quantify how concentrated a particular industry is in a region as compared to a base reference area, usually the nation. A location quotient greater than 1.00 indicates an industry with a greater share of the local area employment than is the case in the reference area.

As shown in Table 3, compared to the nation, Philadelphia County has higher concentrations in eight sectors: educational services; health care and social assistance; management of companies and enterprises; finance and insurance; professional and technical services; arts, entertainment, and recreation; transportation and warehousing; and other services[3]. Of these eight sectors, the City has a higher concentration of employment than the Commonwealth in six sectors: educational services; health care and social assistance; finance and insurance; professional and technical services; arts, entertainment and recreation; and other services.

Table 3
Ratio of Philadelphia County and Pennsylvania Industry Concentrations Compared to the United States

Industry	Philadelphia County to the US	Pennsylvania to the US
Educational Services	4.26	1.50
Health Care and Social Assistance	1.72	1.21
Management of Companies and Enterprises	1.28	1.47
Finance and Insurance	1.17	1.04
Professional and Technical Services	1.16	0.92
Arts, Entertainment, and Recreation	1.17	1.04
Transportation and Warehousing	1.08	1.15
Other Services	1.09	1.05

Source: Bureau of Labor Statistics: 2013 Location Quotient, Quarterly Census of Employment and Wages Data. Industry Location Quotients are calculated by comparing the industry's share of regional employment with its share of national employment.

The concentration of educational services not only provides stable support to the local economy, but also generates a steady and educated workforce, fueling the City's professional services and healthcare industries. The City is capitalizing on the region's assets to become a leader in research generated by life sciences and educational institutions. Several sites now foster life science incubator facilities, including the Navy Yard, the University City Science Center, University of Pennsylvania, Children's Hospital of Philadelphia, Jefferson Hospital, and Drexel University.

Employment

Table 4 shows non-farm payroll employment in the City over the last decade by industry sectors. In the past 10 years, the highest levels of growth have occurred in Professional and Business Services, Education and Health Services, and Leisure and Hospitality. These sectors provide stability to the City's overall economy. Government remains the second largest sector by number of employees. See "EXPENDITURES OF THE CITY – Personal Services (Personnel)" in APPENDIX IV to this Official Statement.

[3] The Bureau of Labor Statistics ("BLS") defines the "Other Services" (except Public Administration) sector as establishments engaged in providing services not specifically provided for elsewhere in the BLS classification system, such as equipment and machinery repairing, promoting or administering religious activities, grantmaking, advocacy, providing drycleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services.

Table 4
Philadelphia Non-Farm Payroll Employment[1]
(Amounts in Thousands)

Sector	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014*	Percent Change 2004-2014	Average Annual Percent Change
Construction & Mining	11.4	12.0	12.4	11.9	12.1	10.1	10.0	10.0	10.2	10.4	11.0	-3.5%	-0.4%
Manufacturing	32.6	31.2	29.9	28.5	27.8	25.7	24.7	23.7	22.9	21.8	21.4	-34.4%	-4.1%
Trade, Transportation, & Utilities	90.9	90.0	88.5	87.8	87.6	85.9	86.6	87.4	88.9	89.5	90.9	0.0%	0.0%
Information	13.6	13.2	12.8	12.6	12.5	12.6	12.2	12.0	12.0	11.5	11.5	-15.4%	-1.7%
Financial Activities	49.0	48.2	47.7	47.1	46.5	44.9	42.6	41.6	41.0	41.1	41.7	-14.9%	-1.6%
Professional & Business Services	80.3	82.4	84.2	85.8	85.3	80.1	81.6	83.0	84.1	86.4	88.3	10.0%	1.0%
Education & Health Services	180.1	182.5	187.7	192.4	196.7	199.2	202.3	206.4	208.1	209.3	212.6	18.0%	1.7%
Leisure & Hospitality	54.6	56.6	58.0	58.0	57.9	56.9	58.4	60.6	63.2	64.8	67.1	22.9%	2.1%
Other Services	28.5	28.5	28.2	28.0	27.8	26.6	26.5	26.4	26.8	27.1	27.4	-3.9%	-0.4%
Private Sector Total	**541.0**	**544.6**	**549.4**	**552.1**	**554.2**	**542.0**	**544.9**	**551.1**	**557.2**	**561.9**	**571.9**	**5.7%**	**0.6%**
Government	116.9	115.7	113.2	110.6	109.2	110.4	112.1	109.0	105.3	103.5	102.2	-12.6%	-1.3%
Total	**657.9**	**660.3**	**662.5**	**662.7**	**663.3**	**652.6**	**657.1**	**660.0**	**662.3**	**665.4**	**674.2**	**2.5%**	**0.2%**

Source: Bureau of Labor Statistics, 2014.
[1] Includes persons employed within the City, without regard to residency.
* 2014 average estimates are calculated using preliminary numbers for December 2014 and are subject to change.

Table 5
Philadelphia Change in Share of Employment Sectors(1)
(Amounts in Thousands)

Sector	Share of Total Employment 2004	Share of Total Employment 2014*	Percent Change 2004 – 2014
Construction & Mining	1.7%	1.6%	-5.8%
Manufacturing	5.0%	3.2%	-35.9%
Trade, Transportation, & Utilities	13.8%	13.5%	-2.4%
Information	2.1%	1.7%	-17.5%
Financial Activities	7.5%	6.2%	-17.0%
Professional & Business Services	12.2%	13.1%	7.3%
Education & Health Services	27.4%	31.5%	15.2%
Leisure & Hospitality	8.3%	10.0%	19.9%
Other Services	4.3%	4.1%	-6.2%
Private Sector Total	**82.2%**	**84.8%**	3.2%
Government	17.8%	15.2%	-14.7%
Total	**100.00%**	**100.0%**	

Source: Bureau of Labor Statistics, 2014.
(1) Includes persons employed within the City, without regard to residency.
*2014 average estimates are calculated using preliminary numbers for December 2014 and are subject to change.

In 2014, the Education and Health Services, Professional and Business Services, Financial Activities, and Leisure and Hospitality sectors collectively represented 60.5 percent of total employment in the City for the year, and 76.6 percent of total private sector wages for the second quarter. Philadelphia has recovered 25,000 private sector jobs since the peak of the recession in 2009.

Unemployment

Throughout the 1990s and as late as 2009, Philadelphia narrowed the gap between its unemployment levels and the national unemployment levels. The effects of the recession on unemployment endured longer in Philadelphia than in many other parts of the country; however, Mayor Nutter has made lowering unemployment a top priority in his second term. To that end, the City has created a Jobs Commission, which in January 2013 released a strategic plan to lower unemployment.

Employment gains in the latter part of 2013 and in 2014 have resulted in a decline in Philadelphia's unemployment rate. According to preliminary data from the Bureau of Labor Statistics, Philadelphia's unemployment rate dropped to 6.2 percent in December 2014, a decline of 2.1 percentage points in 12 months, and is comparable to the City's pre-recession annual unemployment rates of 6.2 percent in 2006 and 6.0 percent in 2007.

Table 6 below shows unemployment information for Philadelphia, the MSA, the Commonwealth and the United States.

Table 6
Unemployment Rate in Selected Geographical Areas
(Annual Average 2004-2014)

Geographical Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014*	Change in Rate 2004-2014
United States	5.5%	5.1%	4.6%	4.6%	5.8%	9.3%	9.6%	8.9%	8.1%	7.4%	6.2%	**0.7%**
Pennsylvania	5.4%	5.0%	4.5%	4.4%	5.3%	7.9%	8.5%	8.0%	7.9%	7.4%	5.6%	**0.2%**
Philadelphia-Camden-Wilmington MSA	5.1%	4.7%	4.5%	4.3%	5.4%	8.2%	8.9%	8.6%	8.5%	7.8%	6.1%	**1.0%**
Philadelphia	**7.3%**	**6.7%**	**6.2%**	**6.0%**	**7.1%**	**9.6%**	**10.8%**	**10.9%**	**10.8%**	**10.0%**	**7.6%**	**0.3%**

Source: Local Area Unemployment Statistics, Bureau of Labor Statistics
* 2014 average estimates are calculated using preliminary numbers for December 2014 and are subject to change.

Principal Private Sector Employers in the City

Table 7 lists Philadelphia's 15 largest private sector employers, by wage tax revenue. Five are hospitals and providers of other medical services, four are renowned universities, and three are in the finance and insurance industry. Other sectors represented include food services, bio-tech, and broadcasting/cable.

Two of the City's largest employers, Aramark Corporation and Comcast Corporation are also Fortune 500 companies. Although not among the largest employers, other Fortune 500 companies with a presence in Philadelphia are Crown Holdings Inc., Cigna Corporation, and Sunoco Inc. A number of Fortune 1000 companies are also headquartered within the City, including FMC Corporation, Urban Outfitters Inc., and Radian Group Inc.

Table 7
Principal Private Sector Employers by Wage Tax Revenue
Ranked by Employment in Philadelphia*

Employer	Sector	Employees within Philadelphia
University of Pennsylvania	Education	25,287
University of Pennsylvania Health System	Health	15,290
Children's Hospital of Philadelphia	Health	10,294
Temple University Hospital, Inc.	Health	8,804
Temple University	Education	8,204
Thomas Jefferson University Hospitals	Health	7,860
Aramark Corporation	Food Service	6,347
Drexel University	Education	6,096
Albert Einstein Medical	Health	5,752
Thomas Jefferson University	Education	4,243
Independence Blue Cross	Insurance	3,505
PNC Bank N.A.	Finance	2,981
Ace Insurance Company	Insurance	1,568
GlaxoSmithKline LLC	Bio-tech	1,376
Comcast Corporation†	Broadcasting/Cable	
Total		**107,607**

Source: City of Philadelphia Department of Commerce
*As of June 2014
†Employment Data unavailable

Hospitals and Medical Centers

The City is a center for health, education, research and science facilities with the nation's largest concentration of healthcare resources within a 100-mile radius. There are presently more than 30 hospitals, five medical schools, two dental schools, two pharmacy schools, as well as schools of optometry, podiatry and veterinary medicine, and the Philadelphia Center for Health Care Sciences in West Philadelphia, located in the City. The City is one of the largest health care and health care education centers in the world, and a number of the nation's largest pharmaceutical companies are located in the Philadelphia area.

Major research facilities are also located in the City, including those located at its universities, its medical schools, The Wistar Institute, the Fox Chase Cancer Center, and the University City Science Center. In 2013, the Children's Hospital of Philadelphia completed the construction of a $400 million biomedical research facility located within the Philadelphia Center for Health Care Sciences in West Philadelphia. Philadelphia is home to two of the nation's 41 National Cancer Institute-designated Comprehensive Cancer Centers (the Abramson Cancer Center at the University of Pennsylvania and Fox Chase Cancer Center, which is part of the Temple University Health System). Additionally, Philadelphia is also home to two NCI-designated Cancer Centers (Kimmel Cancer Center and the Wistar Institute Cancer Center).

Table 8 lists the number of licensed and staffed beds in each of the major hospitals and medical centers in the City, as of June 2013, and does not reflect any mergers, consolidations or closures that have occurred since that date.

Table 8
Hospitals and Medical Centers as of June 2013

Institution Name	Total Licensed Beds	Total Staffed Beds
Aria Health[1]	480	480
Belmont Center for Comprehensive Treatment	147	147
Chestnut Hill Hospital	130	67
Einstein Medical Center-Philadelphia	772	445
Fox Chase Cancer Center	98	97
Hahnemann University Hospital	496	496
Hospital of the University of Pennsylvania	789	789
Jeanes Hospital	176	156
Kensington Hospital	45	45
Magee Rehabilitation Hospital	96	96
Mercy Philadelphia Hospital	178	157
Nazareth Hospital	203	173
Penn Presbyterian Medical Center	305	305
Pennsylvania Hospital	496	402
Roxborough Memorial Hospital	141	141
St. Joseph's Hospital[2]	197	182
St. Christopher's Hospital for Children	189	189
Shriners Hospitals for Children - Philadelphia	53	39
Temple University Hospital[3]	728	728
The Children's Hospital of Philadelphia	521	493
Thomas Jefferson University Hospital[4]	969	945

Source: PA Department of Health, Report 1A-1B, 2013.
[1]Aria Health System includes data for all three divisions - Frankford, Torresdale and Bucks County.
[2]St. Joseph's Hospital includes data for Girard Medical Center/Continuing Care Hospital of Philadelphia.
[3]Temple University Hospital includes data for Episcopal Hospital.
[4]Thomas Jefferson University Hospital includes data for the Methodist Hospital Division.

Children's Hospital of Philadelphia Expansion. Top ranked Children's Hospital of Philadelphia ("CHOP") is one of the largest and oldest children's hospitals in the world. Since 2002, CHOP has invested over $2.6 billion in its expansion in Philadelphia. The $500 million Ruth and Tristram Colket, Jr. Translational Research Building opened in 2010. CHOP recently approved an additional $2.7 billion expansion in Philadelphia through 2017. The $500 million, 700,000 square foot Buerger Center for Advanced Pediatric Care is currently under construction and is scheduled to open in 2015. Future projects include phase one of a nine-acre, 1.5 million square foot medical research campus along the east banks of the Schuylkill River, which is expected to be completed by the end of 2016.

The Wistar Institute. The Wistar Institute was founded in 1892 and was the nation's first independent biomedical research facility. The Institute recently completed construction of a $100 million expansion and renovation project that will significantly increase its ability to carry out its mission as an international leader in basic biomedical research and make advancements in the fields of genetics, cancer biology, translational research, immunology and virology.

Educational Institutions

The MSA plus Mercer County, New Jersey, has the second largest concentration of undergraduate and graduate students on the East Coast, with 101 degree granting institutions of higher education and a total enrollment of over 300,000 students, of which approximately 147,779 live within the geographic boundaries of the City. Included among these institutions are the University of Pennsylvania, Temple University, Drexel University, St. Joseph's University, and LaSalle University. Within a short drive from the City are such schools as Villanova University, Bryn Mawr College, Haverford College, Swarthmore College, Lincoln University, and the Camden Campus of Rutgers University.

University of Pennsylvania. The campus of the University of Pennsylvania ("Penn"), an Ivy League institution, sits in West Philadelphia across the Schuylkill River from downtown Philadelphia. More than 24,000 undergraduate, graduate and professional full-time students attend the university. Penn and its health system are the largest private sector employers in Philadelphia, employing over 40,577 combined staff and with a total university budget of $7.25 billion for Fiscal Year 2015. In 2011, Penn completed a $400 million medical research building, the Smilow Center for Translational Research. The Krishna P. Singh Center for Nanotechnology, an $88 million nanotechnology research facility, opened in October 2013.

In February 2014, Penn unveiled a master plan for a 23-acre Innovation and Research Park called Pennovation Works. In October 2014, Penn announced a $26 million project to redevelop an existing building within the complex to include 52,000 square feet of wet lab and incubator space that will house all of Penn's technology transfer facilities. The master planning process includes redevelopment plans for the entire acreage; however, Penn has been leasing various buildings with an innovation center end-use in mind since 2012, including leases with technology companies stemming from innovations developed at Penn.

Drexel University. Founded in 1891 as the Drexel Institute of Science, Art and Industry, Drexel University ("Drexel") occupies a 74-acre main campus in University City. Drexel's student body has grown considerably in the past two decades, from 4,500 in 1996 to approximately 26,000 students in 2015, resulting in expansion of both curriculum and campus. In September 2011, Drexel opened the doors to its new $69 million science building, the Constantine N. Papadakis Integrated Sciences Building. Drexel recently completed construction of a $92 million facility for its LeBow School of Business and a new mixed use residential and retail project on Chestnut Street. Design is also complete for a $44 million renovation of a 161,000 square foot building housing the College of Media Arts and Design. Most recently, Drexel has drafted a plan to develop more than 12 acres of underutilized land near Philadelphia's 30th Street Station into a transit-oriented live/learn/work neighborhood, called the Innovation Neighborhood. To facilitate redevelopment, Drexel expects to award master development rights for this area in May 2015.

Temple University. Temple University ("Temple") has undergone a significant transformation over the past three decades from a university with a mostly commuter-based enrollment to one in which on- and near-campus housing is now in high demand. To meet the increasingly residential nature of its student population, Temple has invested heavily in the renovation of its various existing student housing inventory as well as, most recently, the development of a new state-of-the art residence facility, Morgan Hall, which opened in summer 2013 and houses approximately 1,275 students. Temple has also actively partnered with private developers in the expansion of on-campus housing alternatives for students. Currently, an estimated 12,000 of Temple's 37,619 students live on or around the Temple campus. The university's Board of Trustees approved a master plan, "Visualize Temple," in December 2014, and the university has already begun $1.2 billion of investment. Planned upgrades include improved green space, a student recreation facility, and academic buildings such as a library and a new science research lab. Temple also purchased the vacant William Penn High School property on North Broad Street, and received permission from the Planning Commission in February 2015 to tear down the high school building and construct a new facility.

Median and Average Household Income

Table 9 shows median family income, which includes related people living together, and median household income, which includes unrelated individuals living together, for Philadelphia, the MSA, the Commonwealth and the United States. Table 10 shows the average household income for the same areas, which is based on a more comprehensive measure of total income. Over the period 2005-2013, median family income for Philadelphia increased by 10.4 percent, while average household income increased by 39.6 percent over the period 2005-2014 as a result of an influx of higher income households.

Table 9
Median Family Income* for Selected Geographical Areas, 2005-2013
(Dollar Amounts in Thousands)

Year	Philadelphia	Philadelphia-Camden-Wilmington MSA	Pennsylvania	United States	Philadelphia as a percentage of the US
2005	$40.5	$67.8	$55.9	$55.8	72.60%
2006	$43.0	$70.8	$58.1	$58.5	73.56%
2007	$44.1	$73.5	$60.2	$60.4	73.10%
2008	$46.4	$77.0	$63.1	$63.2	73.35%
2009	$45.8	$76.8	$62.8	$62.4	73.48%
2010	$45.1	$76.7	$63.0	$62.1	72.69%
2011	$45.0	$78.1	$64.3	$62.7	71.80%
2012	$44.6	$77.8	$65.1	$63.1	70.71%
2013	$44.7	$78.5	$66.1	$63.8	70.15%
Change 2005-2013	$4.2	$10.7	$10.2	$8.0	

* Includes related people living together.
Source: American Community Survey, Annual and 3-Year Estimates

Given the high percentage of employers in knowledge-based industries in the City, including higher education, healthcare and other professional services, such as law, accounting and finance, the average household income within the City is higher than the median household income. Also contributing to the lower median household income is the fact that Philadelphia has the fifth largest undergraduate and graduate student population among major U.S. cities. These individuals, numbering approximately 147,800 according to the 2013 American Community Survey, or approximately 10 percent of the City's overall population, generally have very low or no income, as they are either unemployed or working only part-time while they complete their education. The City's large student population has also historically led to an overstatement of the City's percentage of residents living at or below the poverty level.

Table 10
Average Household Income for Selected Geographical Areas, 2005-2014
(Dollar Amounts in Thousands)

Year	Philadelphia	Philadelphia-Camden-Wilmington MSA	Pennsylvania	United States	Philadelphia as a percentage of the US
2005	$78.1	$109.7	$91.1	$93.7	83.35%
2006	$82.3	$117.2	$96.9	$99.5	82.67%
2007	$86.6	$121.3	$101.2	$103.6	83.55%
2008	$93.3	$125.1	$104.0	$106.9	87.29%
2009	$95.1	$123.5	$102.7	$103.8	91.56%
2010	$99.2	$126.1	$105.4	$106.1	93.45%
2011	$103.8	$132.3	$111.0	$111.6	92.97%
2012	$107.1	$137.8	$115.4	$116.2	92.15%
2013	$106.1	$140.5	$117.5	$117.4	90.38%
2014	$109.0	$145.4	$121.9	$121.5	89.72%

Source: iHS Economics

Cost of Living Index

Philadelphia has the second lowest cost of living index among major cities in the Northeast, as shown in Table 11 below. The City markets its relatively low labor costs and cost of living to attract businesses. Additionally, the City's Wage, Earnings, and Net Profits Tax Rates have decreased in Fiscal Years 2014 and 2015, which may further incentivize both business and residents to relocate into the City. See "REVENUES OF THE CITY – Wages, Earnings, and Net Profits Taxes" in APPENDIX IV to this Official Statement.

Table 11
2014 Cost of Living Index* of Cities in the Northeastern U.S.

Metropolitan Area	Cost of Living Index
New York (Manhattan)	221.8
Washington-Arlington-Alexandria	141.2
Boston-Cambridge-Quincy	137.3
Philadelphia-Camden-Wilmington	119.1
Baltimore-Towson	109.2

*Data reflects Q1 2014 – Q3 2014
Source: 2014 ACCRA Cost of Living Index

Housing

For purposes of the information included under this "Housing" subheading, the City engaged an outside consultant, Kevin C. Gillen, Ph.D, who prepared the text and tables below and conducted the analysis related thereto. As a professional in the field of urban and real estate economics, the City has relied on the analysis Mr. Gillen has provided below.

Philadelphia's housing stock is among the oldest of any city in the country, and has suffered from decades of depopulation and abandonment since the late 1940s. Like many U.S. cities, Philadelphia has undergone a significant revitalization in the past 25 years, particularly in and around its downtown core of Center City, which is geographically defined as the approximately four square mile area between Washington and Girard Avenues, and from the Schuylkill to Delaware rivers. Philadelphia's recent population gains are overwhelmingly due to new household growth in the downtown core of Center City and adjacent neighborhoods. These same neighborhoods have undergone significant new construction and investment, leading to increases in the value of Philadelphia's housing stock. Large parts of the rest of the City have not yet benefitted from this real estate price appreciation or revitalization of its housing stock. The following table lists the values of key metrics for the Philadelphia housing market, including their percent changes from one year and five years ago, and the direction of their current trend.

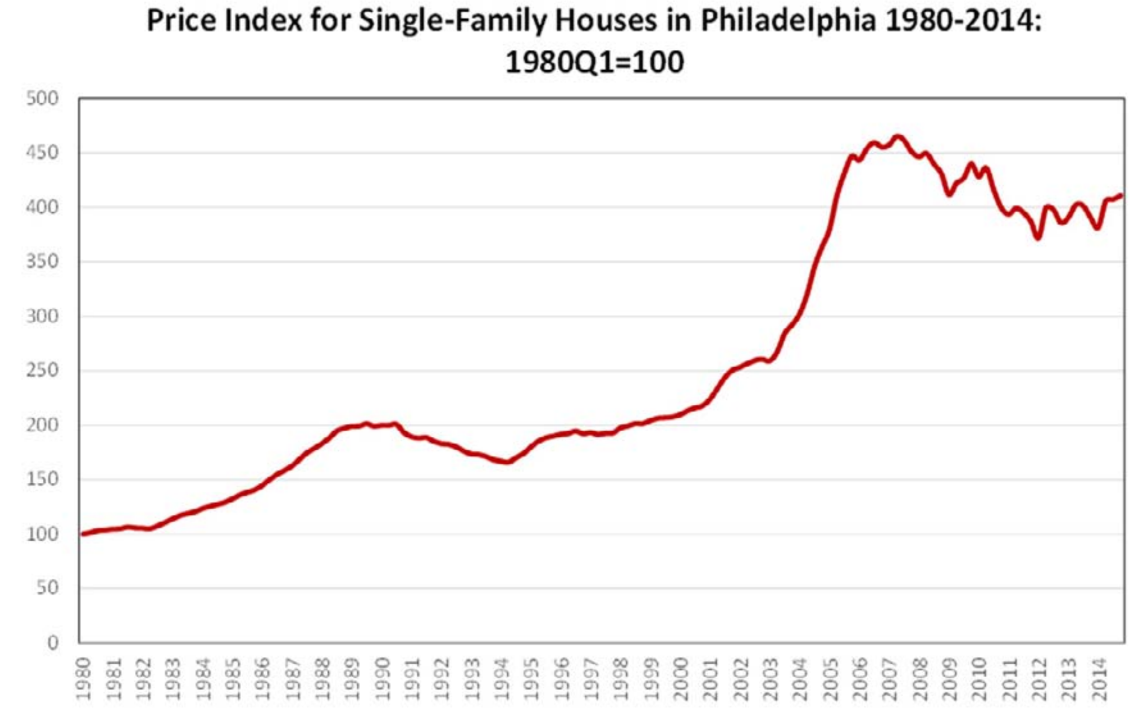
Table 12
Housing Market Metrics

Housing Market Metrics	2014	% Change from 1 Year Ago	% Change from 5 Years Ago	Trend
Total Housing Stock (number of properties)	499,703	0.12%	0.8%	↑
Number of Single-Family Units*	458,632	0.2%	1.3%	↑
Number of Multifamily Units**	94,220	3.0%	3.9%	↑
Median House Price	$125,000	-1.6%	7.5%	↑
Number of House Sales	14,261	6.2%	1.1%	↑
Months' Supply of Inventory	9.5	-18.8%	-37.5%	↓
Avg. Days-on-Market	87	-2.0%	-9.4%	↓
Number of New Units Permitted	3973	41.1%	319.5%	↑
Avg. Housing Rent (Monthly)	$1,194	8.4%	21.5%	↑
Homeownership Rate	52.2%	N/A	-9.7%	↓

* Structures with 1-4 dwelling units.
** Structures with 5 or more dwelling units.

Sources: Philadelphia Recorder of Deeds, Philadelphia Office of Property Assessment, U.S. Census, National Multifamily Housing Council, TREND MLS.

Consistent with national trends, the City's housing market experienced both inflation and deflation over the last ten years as a consequence of the mid-2000s housing boom and subsequent bust. The following chart shows an empirically estimated house price index that displays the trajectory and level of average house prices in Philadelphia on a quality- and seasonally-adjusted basis. The index is computed according to a methodology that is very similar to the methodology used in the computation of the Case-Shiller House Price Indices.

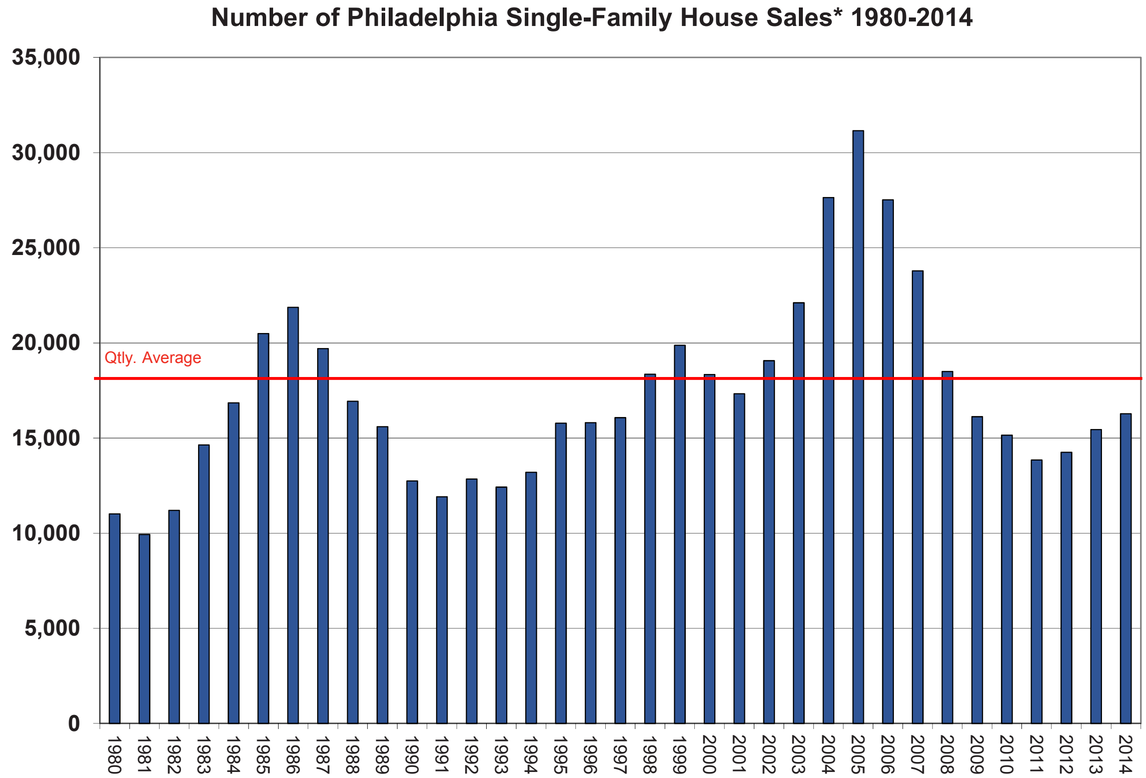


Source: Philadelphia Recorder of Deeds, Computed by Kevin C. Gillen, Ph.D.

The index is normalized to a starting value of 100 in its first period of the first quarter of 1980. The house price index rises steadily through the 1980s to achieve a value of 200 in 1989, indicating that the typical Philadelphia house doubled in value during that period. The index declines during the recession of the early 1990s, and begins to recover in the mid-to-late 1990s. House price appreciation began to proceed at an accelerated rate in the 2000s, with the index obtaining a value of 300 by 2004, thus indicating that Philadelphia house prices in 2004 were three times what their average values were in 1980.

As further indicated by the chart, average house prices rose by 136% during the boom years of the 2000s before peaking in 2007. They declined by 23% since then before hitting bottom in the winter of 2012. They have since recovered only modestly, in an uneven pattern, and are currently 16% below their 2007 peak.

Compared to prices, sales activity has made relatively steadier progress in recovering since the recession. The following chart shows the annual number of single-family house sales in Philadelphia since 1980. The chart depicts only arms-length home sales at market-rate prices.

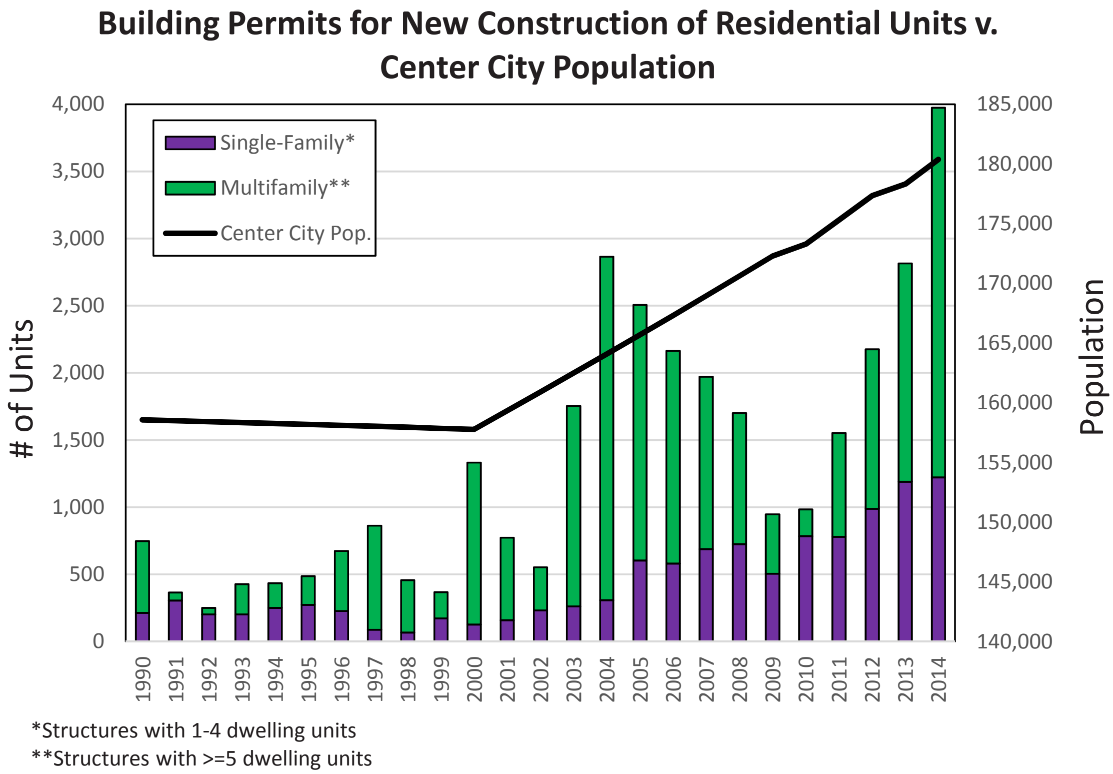


* Structures with 1-4 dwelling units

Source: Philadelphia Recorder of Deeds

Historically, the City has averaged approximately 17,000 transactions of single-family houses per year, but with significant cyclicality around this average. As exhibited in the chart above, sales exhibited increases during the expansionary markets of the mid-1980s and mid-2000s, and decreases during the contractionary markets of the early 1990s and 2008-2011 periods. From a peak of over 31,000 sales in 2005, transactions volume fell nearly 56% to nearly 13,850 sales in 2011. Since then, however, house sales in Philadelphia have steadily grown by 17.5% and are currently trending back to their historic average.

Homebuilding activity in Philadelphia has made significant progress since hitting its recessionary low in 2009. The following chart shows the number of newly constructed units being added to Philadelphia's housing stock, as represented by the number of building permits issued for such units, from 1990 through 2014.



Source: U.S. Census

Between 1990 and 2000, construction of new housing units in Philadelphia was low by both absolute and relative measures, averaging only 400 units per year. Following passage of a ten-year property tax abatement program in 2000, construction began to grow steadily, hitting a peak of nearly 3,000 units in 2004. After declining to 947 units during the recession in 2009, construction activity has recovered steadily, and currently stands well above the boom years of 2003 through 2007. In 2014, permits were issued to approve the construction of nearly 4,000 new housing units in Philadelphia, and the most recent numbers indicate that 2015 is on track to be another robust year.

Under the City's tax abatement program, the value of any new improvements to real estate in Philadelphia is untaxed for the first ten years after the improvements are made. In the case of new construction, this is a substantial tax break to the owner because the entire structure represents an improvement. As such, the owner only pays real estate taxes on the value of the land for the first ten years after a new building is completed.

A key fundamental driver of new housing construction is population and/or household growth, since net additions to the housing stock cannot typically be rationalized without net additions to the population that occupies it. However, the growth in Philadelphia's new construction currently exceeds the rate of the City's overall growth in population. Citywide population growth is significantly increasing in some neighborhoods, while still declining in others. As a consequence, new construction can be rationalized in growing neighborhoods if it is offset by demolitions and depreciations in shrinking neighborhoods.

Because the overwhelming amount of current new construction is in and around the Center City (downtown) neighborhoods of Philadelphia, the above chart also shows total population growth in those same neighborhoods, as represented by the black line.

Office Market and New Development

Philadelphia currently has approximately 40.9 million square feet of office space in the central business district. According to the Cushman and Wakefield Q4 2014 Office Market Beat, the positive trends of lowered vacancy, rising rents, and positive absorption seen in 2014 will continue into 2015. Year-to-date total net absorption in the fourth quarter of 2014 was positive, at 474,420 square feet, according to the same report.

Cushman and Wakefield also reported a continued increase in direct asking rental rates in Philadelphia's central business district, to $27.47 per square foot in the fourth quarter of 2014. The overall vacancy rate for the Philadelphia central business district continued to decline to 11.0 percent in the fourth quarter of 2014, down from 12.3 percent in the fourth quarter of 2013, according to Cushman and Wakefield data. Vacancy rates in suburban markets were 16.2 percent in the fourth quarter, up from 15.8 percent in the fourth quarter of the previous year, making vacancy rates in Philadelphia much lower than their suburban counterparts, even while rents in the Philadelphia central business district were $1.95 per square foot higher in the same quarter of 2014.

Table 13 shows comparative overall office vacancy rates for selected Office Markets. Due to differences in methodology and scale of analysis, Jones Lang LaSalle's national comparison lists Philadelphia's vacancy rate as 10.8 percent for the fourth quarter of 2014, while Cushman and Wakefield's area-specific analysis lists the Philadelphia central business district's vacancy rate as 11 percent for the same time period.

Table 13
Comparative Overall Office Vacancy Rates, Selected Office Markets
Fourth Quarter 2014

Market	Vacancy Rate
New York (Midtown South)	6.90%
New York (Midtown)	9.70%
Boston	10.30%
New York (Downtown)	10.70%
Philadelphia	**10.80%**
Washington DC	12.00%
United States CBD, All Markets	**12.60%**
Chicago	12.80%
Baltimore	13.40%
Houston	13.50%
San Diego	16.40%
San Antonio	16.80%
Cleveland	17.40%
Detroit	17.50%
Los Angeles	18.70%
Phoenix	23.70%

Source: Jones Lang LaSalle, National CBD Data, Fourth Quarter 2014

Two of the City's top corporate tenants, FMC Corporation and Comcast, continue to grow downtown. In May 2014, Brandywine Realty Trust broke ground on the new 49-story, 861,000 square foot FMC Tower at Cira Center South. FMC will lease 253,000 square feet of the new tower, the University of Pennsylvania will lease 100,000 square feet, and leasing activity is occurring to fill the remaining 248,000 square feet of space. Comcast Corporation broke ground in July 2014 on a 59-story, $1.2 billion Comcast Innovation and Technology Center office tower adjacent to its headquarters building in Center City Philadelphia. The new skyscraper will enable Comcast to consolidate employees currently scattered at several sites (in both Philadelphia and the surrounding suburbs) into a single location. The facility will also create a media center in the heart of the City by becoming home to the operations of local broadcast television stations NBC 10/WCAU and Telemundo 62/WWSI and offer space for local technology startups. When completed in 2017, the tower will also serve as the new home to the Four Seasons Hotel, which will occupy the tower's top floors with approximately 200 rooms. The mixed-use tower is expected to be the tallest building in the United States outside of New York and Chicago and will be one of the largest private development projects in the history of Pennsylvania. Ultimately, the project is expected to create 1,500 permanent jobs in Philadelphia.

Retail Market, Food and Dining

Philadelphia continues to establish itself as a retail destination. In January 2015, Philadelphia was named the second of 24 "Best Shopping Cities in the World," by Condé Nast Traveler Magazine. In October 2013, Colliers International reported that the fastest rising retail rents in the nation were on Philadelphia's Walnut Street, with 33.8 percent growth since October 2012. Throughout Philadelphia's central business district, the tenant mix continues to move toward national brands that can support growing rents. Recent additions include Stuart Weitzman, Madewell, Theory, Ulta, Intermix, Nordstrom Rack, Calypso St. Barth, Forever 21, Michael Kors, Banana Republic Factory Store and Suit Supply, the European chain's fifth store in the United States. In October 2014, Japanese retailer Uniqlo opened its first Philadelphia location in Center City, the chain's only standalone store in the United States outside of New York City. Van's Off the Wall, Timberland, and Under Armour are also future central business district retailers.

Plans to revitalize East Market Street continue. Previously, in April 2013, Pennsylvania Real Estate Investment Trust acquired 430,000 square feet of retail and commercial space at 907 Market Street, giving a single entity ownership of The Gallery at Market East, a 130-store retail mall complex. In July 2014, Macerich Co, which owns 55 shopping centers across the nation, acquired a 50 percent interest in The Gallery, and has plans to invest $106.8 million to revitalize the shopping center. Within a block of The Gallery, Marshalls opened a 28,000 square foot store in October 2012, also on East Market Street.

Most recently, in October 2014, New York-based department store Century 21 opened its first store outside of New York City, in a 95,000 square foot space that was previously vacant. In March 2014, NREA Development Services announced a mixed-use redevelopment project, called East Market, also located on East Market Street between 11th and 12th Streets. Once completed in 2016, the project will include 325 apartments, and up to 122,000 square feet of retail space. Future tenants of East Market will include Mom's Organics, a Maryland-based grocery chain. Just one block south of Market Street, Brickstone Co. announced in April 2014 that it would build a mixed-use redevelopment project for the 1100 block of Chestnut Street in April 2014. The project, a mix of new construction and historic preservation, is currently under construction and will include up to 115 apartments and 90,000 square feet of retail space. Future tenants of the project include Target Express.

Philadelphia has experienced a revival in restaurant establishments especially in Center City and in the Greater Center City area, indicating an improved quality of life and vibrancy of those neighborhoods. The Center City District's investment in beautification of the area as well as the City's support in making the area more welcoming to visitors and diners sparked a significant increase in the number of indoor/outdoor dining establishments throughout Center City. In 1995, no sidewalk cafes existed in Center City. By 2013, the same area had 327 sidewalk cafes. Additionally, from 1992 to 2010, the number of fine dining establishments within the Center City District increased 322 percent. Rapid development is also reflected in South Philadelphia, where East Passyunk was named a Top Ten Best Foodie Street in America by Food and Wine Magazine in May 2013.

Preliminary data from the Bureau of Labor Statistics shows that about 49,400 people were employed in retail trades in Philadelphia in 2014, the highest employment number in that industry in over 10 years. Food service and drinking establishments employed about 45,400 people in 2014 according to these preliminary data, representing an average annual growth of 1.2 percent since 2004. The number of private retail establishments and private food services and drinking establishments has also recovered from pre-recession levels; retail trade establishments increased by 213 between 2007 and 2013, and food services and drinking places have increased by 187 in the same time period, according to the Bureau of Labor Statistics' Quarterly Census of Employment Wages.

Table 14 on the following page reflects taxable retail sales for the City from Fiscal Years 2007 to 2013.

Table 14
Taxable Retail Sales 2007-2013
(Amounts in Thousands of USD)

Fiscal Year	Taxable Sales
2007	13,643,582
2008	13,704,958
2009	13,211,446
2010	13,050,202
2011	12,403,442
2012	12,721,337
2013	12,880,000

Source: Figures determined by dividing the City's local sales tax reported by the Pennsylvania Department of Revenue by the applicable local sales tax rate.

Airport System

The Airport System serves residents and visitors from a broad geographic area that includes eleven counties within four states: Pennsylvania, New Jersey, Delaware and Maryland. The Airport System consists of the following:

Philadelphia International Airport ("PHL"). PHL is classified by the Federal Aviation Administration as a large air traffic hub (enplaning 1.0 percent or more of the total passengers enplaned in the U.S.). According to data reported by Airports Council International – North America, PHL was ranked the eighteenth busiest airport in the United States, serving 30.5 million passengers in calendar year 2013 (i.e. total passengers enplaned and deplaned), and was ranked the tenth busiest in the nation based on aircraft operations. PHL consists of approximately 2,394 acres located partly in the southwestern section of the City and partly in the northeastern section of Delaware County, about 7.2 miles from Center City Philadelphia. PHL's runway system consists of parallel Runways 9L-27R and 9R-27L, crosswind Runway 17-35, commuter Runway 8-26, and interconnecting taxiways.

PHL terminal facilities include approximately 3.3 million square feet, consisting of seven terminal units (A-West, A-East, B, C, D, E and F). Terminal facilities principally include ticketing areas, passenger holdrooms, baggage claim areas and approximately 170 food, retail and service establishments. There are certain other buildings and areas located at PHL, consisting of six active cargo facilities, a U.S. Airways aircraft maintenance hangar, and a former United States Postal Service building located at the western end of PHL.

The outside terminal area consists of a 14-story, 400-room hotel, seven rental car facilities, a 150-vehicle cell-phone lot and two employee parking lots with a total of 4,200 spaces. This area also includes five parking garages and surface lots consisting of a total of 18,940 vehicle spaces, operated by Philadelphia Parking Authority.

Northeast Philadelphia Airport ("PNE"). PNE is located on approximately 1,126 acres situated within the City limits, ten miles northeast of Center City Philadelphia. PNE serves as a reliever airport for PHL and provides for general aviation, air taxi, corporate, and occasional military use. PNE currently has no scheduled commercial service. There are presently 85 T-hangars, nine corporate hangars, and six open hangars for general aviation activities. There are approximately 190 general aviation aircraft based at PNE.

Airport Capital Projects. Since 2000, PHL has constructed more than $1 billion of capital improvements, including construction of new terminals, expansion and renovation of existing terminals, and an extension of one runway. PHL has embarked on a Capacity Enhancement Program ("CEP"), which is a complex, long-term multi-billion dollar effort to expand the capacity, improve efficiency, and modernize the facility of the airport in order to maintain Philadelphia's competitive position in the region.

In September 2011, the Federal Aviation Administration issued a Letter of Intent to contribute $466.5 million toward the CEP over the 12-15 year life of the program. In addition to federal funds, the CEP will be financed by Airport Revenue Bonds and a variety of other funding sources, such as user fees and additional grants. PHL is evaluating the complex projects that are part of the CEP and is in discussions with the airlines regarding the phasing and timing of the projects. In January 2013, PHL and US Airways (which has since merged with American Airlines) agreed upon a two-year extension to the Airport-Airline Use and Lease Agreement (the "Airline Agreement") through June 30, 2015. PHL and American Airlines are in the process of negotiating either an extension to the current Airline Agreement or a new Use and Lease Agreement that would take effect on July 1, 2015. Per the Airline Agreement, capital projects in excess of $500,000 can only be undertaken with airline approval. Table 15 provides a complete list of approved capital projects.

Table 15
Capital Projects Approved under the Airline Agreement

Capital Projects	Current Project Amount (millions $)
Airport Maintenance Facilities	10.00
High Speed Exit - K5	9.00
Taxiway K Extension	23.24
Land Acquisition	87.00
International Terminal Gate Expansion - Planning	1.00
Interior Terminal Signage Upgrade	5.00
New Runway 9R-27L Enabling Projects	156.15
On-Airport Facility Relocation	19.65
Environmental Commitment Start-Up	61.95
Eastside AOA Access	3.50
Terminal Modernization Program	237.10
Eastside Taxiways and Runway 9R-27L Extension	118.10
Airport People Mover Study & Initial Design	31.00
Program Management	15.00
Repair/Rehabilitation Projects	67.10
Consolidated Rental Car Facility	312.09
Total	1,156.88

Source: City of Philadelphia, Division of Aviation.

The following are brief descriptions of selected capital projects:

- **Airfield Improvements –** design and construction of a runway extension, new taxiways and aircraft holding bays/aprons to accommodate larger, long-haul aircraft and allow aircraft to queue more efficiently for departure ($118 million budget – currently, part of this project is being designed and part of it is under construction).

- **Automated People Mover –** initial design for an automated people-mover system between concourses that will make it easier for passengers to connect to other flights ($31 million planning and design budget – currently in the planning phase).

- **Terminal Modernization Program –** a redesigned and enhanced Terminal B/C ticketing area, which will include a new, automated baggage handling and screening system and a new, more spacious, centralized passenger security screening checkpoint to provide for greater efficiency and enhanced passenger flow ($237 million budget – currently in the planning phase).

- **Consolidated Rental Car Facility –** replacement of the current rental car facility surface lots with a new, multi-story consolidated rental car facility ($312 million – currently in the planning phase).

- **Renovation and Rehabilitation Projects –** continued renovation and rehabilitation of existing infrastructure to include: security upgrades, roof and window replacements, escalator upgrades, restroom renovations, roadway improvements, concession program enhancements and flight information display system upgrades ($67 million – project components are currently in various phases).

- **Taxiway K Extension –** this project extends Taxiway K from Taxiway Y to Z, and to parallel Taxiway J, thereby increasing the taxi flow between the terminal complex and runways in both east and west flow operations. The project also provides dual queuing for the deicing facility and serves as a perimeter route for Runway 9R-27L departures in order to avoid crossing Runway 9L-27R during west flow operations. The project was substantially complete in October 2014 at an approximate cost of $23 million.

PHL Passenger Traffic and Cargo. The total number of passengers traveling through PHL has increased 16.6 percent from Fiscal Year 2005 through Fiscal Year 2014. The total passenger traffic for PHL is summarized in the Tables 16 and 17 below. Table 16 shows the total number of passengers enplaned and deplaned at PHL from Fiscal Years 2005-2014. Table 17 shows the total annual passenger traffic segmented into domestic and international passengers for the same period. Table 18 summarizes annual cargo transported through PHL, segmented into mail and freight, from Fiscal Year 2005-2014.

Table 16
PHL Enplanements and Deplanements
Fiscal Year 2005-2014

Fiscal Year	Deplaned	Enplaned	Total	Percent Change over Prior Year
2005	15,583,885	15,490,569	31,074,454	-
2006	15,766,462	15,574,997	31,341,459	0.9%
2007	16,033,642	15,851,691	31,885,333	1.7%
2008	16,234,062	16,052,973	32,287,035	1.3%
2009	15,497,428	15,362,743	30,860,171	-4.4%
2010	15,276,158	15,193,741	30,469,899	-1.3%
2011	15,613,887	15,611,583	31,225,470	2.5%
2012	15,268,024	15,344,126	30,612,150	-2.0%
2013	15,143,020	15,215,885	30,358,905	-0.8%
2014	15,223,377	15,316,053	30,539,430	0.6%

Source: City of Philadelphia, Division of Aviation.

Table 17
PHL Domestic and International Passenger Traffic
Fiscal Year 2005-2014

Fiscal Year	Domestic	International	Total	Percent Change over Prior Year
2005	26,951,432	4,123,022	31,074,454	-
2006	27,327,488	4,013,971	31,341,459	0.9%
2007	27,912,154	3,973,179	31,885,333	1.7%
2008	28,135,663	4,151,372	32,287,035	1.3%
2009	26,870,636	3,989,535	30,860,171	-4.4%
2010	26,339,648	4,130,251	30,469,899	-1.3%
2011	26,852,566	4,372,904	31,225,470	2.5%
2012	26,218,341	4,393,809	30,612,150	-2.0%
2013	25,985,009	4,373,896	30,358,905	-0.8%
2014	26,055,259	4,484,171	30,539,430	0.6%

Source: City of Philadelphia, Division of Aviation.

Table 18
PHL Cargo Tonnage
Fiscal Year 2005 - 2014

Fiscal Year	Air Mail Tons	Air Freight Tons	Total	Percent Change over Prior Year
2005	24,447	599,758	624,205	-
2006	22,408	591,815	614,223	-1.6%
2007	18,131	571,452	589,583	-4.0%
2008	22,181	575,640	597,821	1.4%
2009	24,692	475,365	500,057	-16.4%
2010	20,544	440,495	461,039	-7.8%
2011	23,937	449,683	473,620	2.7%
2012	27,151	416,731	443,882	-6.3%
2013	28,285	388,383	416,668	-6.1%
2014	29,545	395,661	425,206	2.0%

Source: City of Philadelphia, Division of Aviation.

Southeastern Pennsylvania Transportation Authority (SEPTA)

SEPTA was established in 1964 for the purpose of planning, acquiring, holding, constructing, improving, maintaining, and operating a comprehensive public transportation system within the City and the local counties, which include Bucks, Chester, Delaware, and Montgomery. SEPTA operates facilities across this five-county area encompassing approximately 2,200 square miles and serving approximately 4.0 million inhabitants. SEPTA operates service 24 hours a day, seven days a week, 365 days a year. SEPTA's Fiscal Year 2015 operating budget totals $1.327 billion. This is supported by $794 million in federal, state, and local subsidies, as well as $533 million of operating revenue.

SEPTA's operations are accounted for in three separate divisions, the percentages following each division representing its approximate share of SEPTA's expense budget: City Transit (67%); Regional Rail Division (23%); and Suburban (10%). The City Transit Division serves the City with a network of 84 subway-elevated, light rail, trackless trolley and bus routes, providing approximately 902,000 unlinked passengers trips per weekday. The Regional Rail Division serves the City and the local counties with a network of 13 commuter rail lines providing approximately 123,000 passenger trips per weekday. The Suburban Division, which includes the Norristown High Speed Line, serves the western and northern suburbs of the City through a series of 46 interurban trolley, streetcar and bus routes providing approximately 67,000 unlinked passenger trips per weekday.

SEPTA ridership has trended upward over the past ten years with exceptions in Fiscal Years 2006, 2010, 2013, and 2014 (see Table 19). In each of Fiscal Years 2010, 2013, and 2014, the decrease in ridership occurred as the result of a one-time event. In Fiscal Year 2010, transit service was shut down for six days as the result of a Transport Worker's Union work stoppage causing a decline in ridership for the year. In Fiscal Year 2013, Hurricane Sandy caused service stoppages that accounted for the decrease of approximately 2 million rides over the previous year. Finally, in Fiscal Year 2014, SEPTA suspended some of its services during 14 days throughout the winter as a result of severely inclement weather. Demand for public transportation has steadily increased over the past decade in the City, and in Fiscal Year 2012, SEPTA experienced its highest ridership in 25 years. This trend is continuing in Fiscal Year 2015, with ridership increasing by approximately two percent in the first seven months (July – January) over the same period in Fiscal Year 2014.

Table 19
Annual SEPTA Ridership by Division

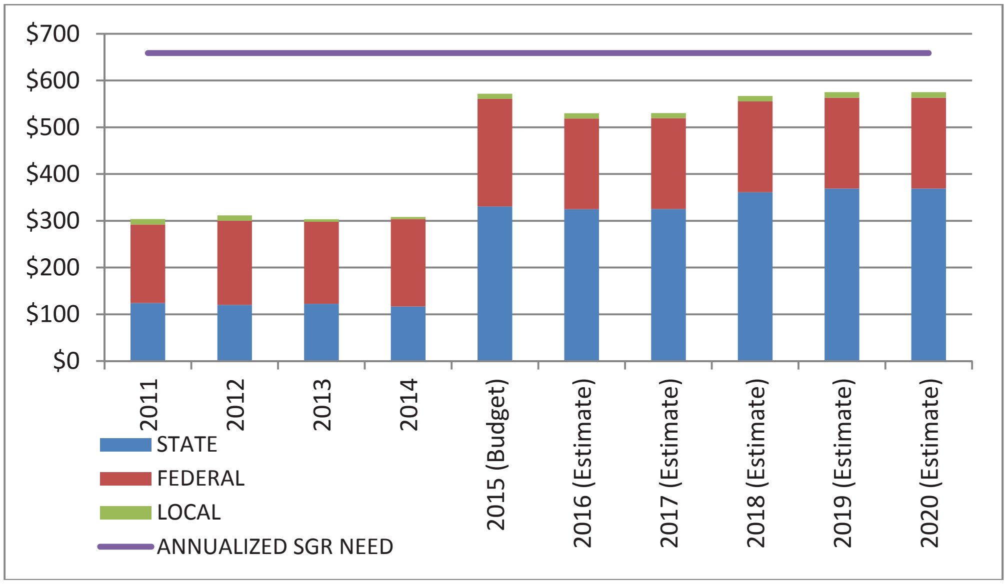
Fiscal Year	City Transit	Regional Rail	Suburban	Total
2005	251,887,150	28,632,676	18,210,677	298,730,503
2006	247,957,108	30,433,631	18,196,551	296,587,290
2007	256,120,000	31,712,000	19,356,000	307,188,000
2008	269,556,000	35,450,000	20,112,000	325,118,000
2009	273,890,000	35,443,000	20,248,000	329,581,000
2010	266,296,000	34,955,000	19,733,000	320,984,000
2011	277,877,000	35,387,000	20,702,000	333,966,000
2012	282,239,000	35,255,000	21,794,000	339,288,000
2013	279,296,000	36,023,000	21,995,000	337,314,000
2014	271,818,000	36,657,000	21,680,000	330,155,000

Source: SEPTA.

Beginning in Fiscal Year 2015, SEPTA's annual capital budget and 12-year capital program have increased significantly. The Fiscal Year 2015 capital budget is $571.8 million, representing an 86 percent increase over the Fiscal Year 2014 budget of $308 million. The Fiscal Year 2015-2026 capital program also increased significantly to $6.8 billion from $3.7 billion in the Fiscal Year 2014-2025 capital program. These increases are largely the result of the passage of Pennsylvania Act 89 in 2013 ("Act 89"), a state transportation funding bill that will result in additional liquid fuels tax payments to the City. By Fiscal Year 2018, the City is estimated to receive an additional $16.5 million in liquid fuels payments over Fiscal Year 2013 levels. Below, Table 20 shows the increase in capital program funding over the previous year, beginning in Fiscal Year 2015.

This increased capital budget will enable SEPTA to address a variety of needs. First, SEPTA will address its State of Good Repair backlog, which has grown as a result of funding shortfalls in previous years. In addition to renovating and upgrading substations, bridges, stations, and aging rail vehicles, SEPTA will also focus on expanding its capacity to serve a growing ridership and enhance accessibility to public transportation. Other projects and expenses supported by the capital program include the New Payment Technology project, expansion of the fleet of hybrid busses, installation of federally-mandated Positive Train Control signal technology, vehicle overhauls, capital leases, and debt service.

Table 20
Capital Program Spending and Budget, 2011 - 2020



Source: SEPTA.

Port of Philadelphia

The Port of Philadelphia (the "Port") is located on the Delaware River within the City limits. Philadelphia's Port facilities are serviced by three Class I railroads (Canadian Pacific Rail, CSX and Norfolk Southern) and provide service to major eastern Canadian points as well as midwestern, southern and southeastern U.S. destinations. Terminal facilities, encompassing four million square feet of warehousing, are located in close proximity to Interstate 95 and Interstate 76. Over 1,600 local general freight trucking companies operate in the MSA, according to Hoover's Inc.

The Philadelphia Regional Port Authority (the "PRPA") is working to increase the Port's competitiveness with increased capacity. The Port is 60 percent complete in deepening the main navigation channel of the Delaware River from 40 to 45 feet, and the next phase of the project is set to begin in the Spring of 2015. Future plans also include the construction of the Southport facility, a container terminal that will be located at the east end of The Navy Yard. Southport will be the first new terminal in Philadelphia in 50 years. In October 2014, the Port announced it is pursuing public-private partnerships to develop the Southport terminal. The first component of the project is projected to begin operating in 2018.

The PRPA reports approximately 5,970,480 metric tons of cargo moved through the Port in 2014, a 17 percent increase over 2013, and a 65 percent increase over 2010. The Port is in the midst of a $120 million expansion project which will ultimately increase cargo capacity for the entire MSA. The Port is the top ranked port for meat importing in the United States, and is among the nation's leaders for fruit, cocoa, forest products and steel imports. In September 2014, the Port welcomed Brazilian company Fibria Celulose S.A., the world's largest producer of bleached eucalyptus wood pulp, which relocated its Northeastern United States distribution center to the Tioga Marine Terminal from Baltimore. The move is expected to create 228 stevedore and terminal jobs and up to 380 total jobs, including rail workers and truckers.

ECONOMIC DEVELOPMENT STRATEGIES AND IMPLEMENTATION

City of Philadelphia Economic Development Mission and Goals

The goal of the City's economic development strategy is to create, maintain, and develop: (1) jobs by fostering an improved business environment; (2) increases in population; and (3) enhanced quality of life within the City—all in order to grow the City's tax base and market competitiveness. Strategic public and private investments, as well as location-based assets, have created a stable economic base and positioned Philadelphia for growth.

Economic Development Infrastructure

The Deputy Mayor for Economic Development and Commerce Director manages a portfolio of City and quasi-public agencies that work together to advance economic development strategies within the City. These agencies serve a variety of functions, including economic development, land use and planning, housing development and historical preservation, each discussed below. Furthermore, the City provides additional programs to businesses and individuals as incentives to relocate and/or develop within the City. These programs include tax incentives such as the City's real estate tax abatement program and access to designated Keystone Opportunity Zones. Finally, the City has found the private sector to be a valuable partner in advancing the overall economic development initiatives within the City, including but not limited to investment in Center City, the Parkway District, the Avenue of the Arts District and the Navy Yard.

The Philadelphia Department of Commerce oversees and implements policies to help both small businesses and major corporations in Philadelphia thrive. The Department of Commerce coordinates activities along neighborhood commercial corridors, with small businesses and entrepreneurs, major real estate development projects, large-scale business attraction and retention efforts, as well as efforts to increase minority-owned business contracting opportunities. The City works closely with economic development partners like the Philadelphia Industrial Development Corporation ("PIDC"), maintaining a relationship that is fully coordinated on business attraction and retention activities and development issues. In collaboration with the Department of Commerce, PIDC plans and implements real estate and financing transactions that attract investment, jobs and tax ratables to the City.

Lending, Land Use and Employer-Based Strategies to Expand Business and Investment. As the City's landholding and financing arm for large commercial and industrial properties well-positioned for industrial redevelopment, PIDC manages public and private resources that are used to leverage even greater investments from a diverse range of governmental, for-profit and non-profit clients throughout Philadelphia. Since its founding in 1958, PIDC has placed more than $11.8 billion of PIDC financing and conveyed more than 3,000 acres of land in commercial and industrial projects. These transactions have leveraged $21.7 billion in total project investment and attracted or retained more than 400,000 jobs.

Through PIDC, the City offers a broad range of financing incentives, including below-market loans, grants, and tax-exempt financing designed to encourage economic growth in Philadelphia. Generally, financing is targeted to capital projects (building acquisition and renovation, new construction, machinery and equipment) that maintain or increase employment levels in Philadelphia where the borrower is not otherwise able to fully fund the project with private-sector debt and equity. PIDC also offers financial assistance for working capital and additional capital programs for construction projects that incorporate sustainability measures. Incentives are capitalized by federal, Commonwealth and local governmental resources, as well as private sector funds, and are available to for-profit and non-profit corporations both small and large.

The City also utilizes several place-based economic development strategies to spur development in Philadelphia. These strategies include: (i) a 10-year real estate tax abatement on all construction, as well as on improvements to existing properties; (ii) Commonwealth-designated Keystone Opportunity Zones in which eligible businesses may be exempt from all Commonwealth and local business taxes until a specified date; (iii) Commonwealth-designated Keystone Innovation Zones in which energy, defense, technology, and life-sciences companies may be eligible for saleable tax credits worth $100,000 annually for the first eight years of operations; (iv) tax increment financing; and (v) commercial corridor revitalization through support of Business Development Districts and reimbursement for certain storefront and interior retail improvements.

Additionally, the City supports business formation and job creation incentives in a variety of ways, including use of a Job Creation Tax Credit which may be applied against the City's Business Income and Receipts Tax liability. The City works with the Philadelphia business community to build internal and external alliances with minority, women and disabled owned business enterprises, and with private industries to help develop and promote these companies. The City also fosters entrepreneurship and small business formation through a dedicated office, the Office of Business Services. With the growth of Philadelphia's immigrant population, the City has actively pursued multilingual business outreach programming.

Land Use and Planning. The Philadelphia City Planning Commission is responsible for the City's land use and strategic planning policies. The Commission maintains the City's comprehensive plan and monitors land use by applying the zoning code to proposed development. After four years of work, a revised zoning code was adopted by City Council in December 2011 and went into effect August 2012. The new, streamlined code is designed to increase efficiency in the development process by expanding what is allowable by right, thus limiting the number of variance requests. When variances are needed, the Zoning Board of Adjustment is the appointed arbiter of those land use requests.

Housing Development. The Office of Housing and Community Development (the "OHCD") manages planning, policy and investment in low income housing through several assistance programs. Most significantly, the OHCD creates and manages implementation of the Consolidated Plan, a federally-mandated plan and budget that must be updated yearly in order to receive federal Community Development Block Grant funding. The Philadelphia Redevelopment Authority (the "PRA") is the public government agency charged with the redevelopment of the City's neighborhoods, and residential housing development in particular. The PRA focuses on planning and developing balanced, mixed-use communities to create thriving, well-served neighborhoods. The PRA manages disposition of City-owned land. Philadelphia Housing Development Corporation focuses on service to Philadelphia's low- and moderate-income households through development of new housing and rehabilitation of existing homes in partnership with community development corporations. The Philadelphia Housing Authority (the "PHA") is funded primarily by the federal government and is the largest landlord in Pennsylvania. PHA develops, acquires, leases and operates affordable housing for City residents with limited incomes. PHA works in partnership with the City and state governments, as well as private investors.

A new institutional partner in housing development is the newly established Philadelphia Land Bank (the "PLB"). The aim of the PLB is to consolidate many of the land acquisition and disposition processes of the City under one umbrella, making it easier for private individuals and organizations to acquire properties that otherwise contribute to neighborhood disinvestment and turn them into assets for the community in which they are located. The PLB can: acquire tax-delinquent properties through tax foreclosure; clear the title to those properties so that new owners are not burdened by old liens; consolidate properties owned by multiple public agencies into single ownership to speed property transfers to new, private owners; and assist in the assemblage and disposition of land for community, nonprofit and for-profit uses.

Historic Preservation. The City is home to historic resources documenting more than three centuries of local, regional, and national history. The Philadelphia Historical Commission is the City's regulatory agency responsible for ensuring the preservation of that collection of historic resources including buildings, structures, sites, objects, interiors, and districts. The Philadelphia Art Commission is the City's charter-mandated design review board for architecture and public art. The City of Philadelphia has one of the largest collections of public art of any major city in the world, with more than 4,500 cataloged pieces.

Key Development Achievements

Over the last two decades the efforts of Philadelphia's economic development agencies and others have spurred significant economic changes throughout the City. In particular, a number of geographic areas have experienced concentrated developments: Philadelphia's Historic District, Avenue of the Arts, North Broad Street, and the Benjamin Franklin Parkway. Many of these developments, such as a significant increase to Philadelphia's hotel room inventory in Center City Philadelphia and expansion of the Pennsylvania Convention Center, are key to the growth of Philadelphia's leisure and hospitality sector.

Notable Districts. Several key areas within the City have been instrumental in the economic development of Philadelphia over the past twenty-five years and the population growth since 2000. Much of the real estate development referenced throughout this APPENDIX V has occurred in these districts.

- **Center City** – a district that has seen a resurgence over the last two decades, Center City is Philadelphia's central business and office region within the City. Center City is the strongest employment center in the City. In addition, the area contains a sizeable residential population and provides ample access to retail, dining, arts and culture, entertainment, and mass transportation services, to both residents and daily commuters. According to the Center City District, one of the City's business improvement districts, 291,251 riders took public transportation into Center City daily in 2014. The professional services and leisure and hospitality sectors play significant roles in the Center City area.

- **Greater Center City** – the areas of greater Center City result from a growing desire for urban living among people who find these areas more affordable than Center City. Like Center City, these areas have experienced increased population, educational attainment, and family income within the last decade. In 2011, 43.3 percent of all jobs in Philadelphia were located in Greater Center City and Center City together.

- **University City** – located west of Center City, University City is a hub for the health care, life sciences, and higher education sectors and accounted for 11 percent of the City's employment in 2011. It includes the campuses of the University of Pennsylvania, Drexel University, University of the Sciences, the University of Pennsylvania Health System, the Children's Hospital of Philadelphia and The Wistar Institute, as well as the University City Science Center, a biomedical incubator.

- **The Navy Yard** – deeded to the City by the U.S. Navy in 2000 as a result of the federal Base Realignment and Closure Act, the 1,000-acre Philadelphia Navy Yard represents a successful transition of a former naval property with a 125-year history as an active military base to a growing hub for business. Largely through the work of PIDC, the City invests in infrastructure at the Navy Yard, providing an urban alternative to suburban office parks and a base for the rejuvenation of the industrial sector. The Navy Yard surpassed 11,500 employees in January 2014, making the Navy Yard a growing employment area with close to 2 percent of the City's jobs.

As of February 2015, Philadelphia had 37 major projects under construction concurrently, representing almost $4.2 billion in combined public and private investment. Most significantly, in summer 2014, Comcast Corporation broke ground on a 59-story, $1.2 billion office tower adjacent to its headquarters building in Center City. Commercial developers are currently most actively engaged in project development, with $1.8 billion invested across 13 projects, the majority of which are concentrated in Center City and the Navy Yard, while an additional $990 million across 11 new residential and mixed use projects are currently under construction across various neighborhoods throughout the City. Projects from higher education and health care institutions in the University City and North Broad neighborhoods represent over $1 billion in investment. Table 21 reflects major real estate developments under construction as of February 2015. From 2013 through the fourth quarter of 2014, 55 projects representing more than a $3 billion investment were completed.

Table 21
Selected Major Development Investments Under Construction
(As of February 2015)

Project Name, by Neighborhood	Project Type	Cost in Millions	Est. Completion Date
Center City		**$1,866.5**	
The Sterling - Redevelopment	Residential	$50.0	Q2 2015
1116-28 Chestnut	Mixed Use	$65.0	Q2 2015
8th and Market Parking Garage	Public	$18.0	Q4 2015
810 Arch Street - Project Home	Residential	$23.5	Q4 2015
Rodin Square, Wholefoods	Commercial	$160.0	Q1 2016
Mormon Temple	Religious	$70.0	Q2 2016
1919 Market	Mixed Use	$100.0	Q2 2016
East Market (formerly Girard Square)	Commercial	$180.0	Q3 2016
Comcast Innovation and Technology Center	Commercial / Hotel	$1,200.0	Q3 2017
University City		**$1,729.2**	
Advanced Care Hospital Pavilion - Penn Presbyterian Medical Center	Health Care	$92.0	Q1 2015
Buerger Center for Advanced Pediatric Care	Health Care	$500.0	Q1 2015
3601 Market - UCSC Apartment Tower	Residential	$110.0	Q2 2015
Lancaster Square	University Residential	$170.0	Q3 2015
New College House at Hill Field	University Residential	$127.0	Q3 2015
3737 Chestnut	Residential	$105.0	Q3 2015
Hub II	Residential	$19.5	Q3 2015
Dornsife Center	University	$15.7	Q4 2015
FMC Tower at Cira Centre South	Mixed Use	$340.0	Q3 2016
4601 Market - Public Safety Services Campus	Public	$250.0	Q2 2018
North Broad		**$18.0**	
Rodeph Shalom Expansion	Religious	$18.0	Q4 2015
Navy Yard*		**$19.4**	
Building 17 - URBN Expansion (Cont.)	Commercial	-	Q2 2015
Commerce 3 (4000 S 26th Street) - EcoSave	Commercial	-	Q2 2015
Central Green (Park)	Public	$9.4	Q2 2015
Center for Building Energy Education & Innovation	Commercial/Education	-	Q2 2015
4701 League Island Blvd	Commercial	-	Q2 2016
Pavilion	Commercial	$10.0	Q2 2017
1200 Intrepid	Commercial	-	Q4 2017
Other Neighborhoods**		**$416.4**	
Belmont Mansion	Non-Profit	$1.4	Q2 2015
Wynnefield Place Senior Apartments	Residential	-	Q3 2015
St. Christopher's Hospital Expansion	Health Care	$92.0	Q4 2015
1700 S. Broad - CHOP Family Care Center	Health Care	$30.0	Q4 2015
Dietz & Watson Facility	Commercial	$50.0	Q4 2015
Philadelphia Mills	Commercial	$40.0	Q4 2015
Broad St Armory	Residential	-	Q2 2016
Park Towne Place - Redevelopment	Residential	$177.0	Q4 2016
University of Pennsylvania Pennovation Works	Commercial	$26.0	Q4 2016
Waterfronts		**$125.0**	
SugarHouse Casino Expansion	Commercial	$125.0	Q2 2015
Total		**$4,174.5**	

Source: Philadelphia Department of Commerce
* Many development costs for Liberty Property Trust buildings at the Philadelphia Navy Yard are confidential, and are not made available for reporting purposes.
** Many development costs are confidential, and are not made available for reporting purposes.

Navy Yard. The Navy Yard is a 1,200 acre mixed-use office, research and industrial park with 11,500 people working on site across 145 companies. The Navy Yard has diverse tenants such as the Aker Philadelphia Shipyard, one of the world's most advanced commercial shipbuilding facilities, the corporate headquarters for retailer Urban Outfitters, a new 205,000 square foot, LEED-certified office building for pharmaceutical company GlaxoSmithKline, and a LEED-Silver certified baking facility for the Tasty Baking Company. More than 6.0 million square feet of space is currently occupied with significant additional capacity available for office, industrial, retail and residential development. In October 2014, restaurateur Marc Vetri opened a 150-seat restaurant, Lo Spiedo, in a 4,700-square-foot former gatehouse.

The Navy Yard is also home to the Consortium for Building Energy Innovation (the "CBEI"), formerly the Energy Efficient Buildings Hub, a consortium of universities, businesses, and economic development groups, working to develop energy efficient building technologies. The CBEI is the recipient of $160 million in Commonwealth and federal funding and part of a U.S. Department of Energy program to create national Energy Innovation Hubs. In 2014, the CBEI relocated to The Center for Building Energy Science (Building 661). The 38,000 square foot building serves as a demonstration laboratory to showcase energy efficiency research. In spring 2015, the CBEI, in collaboration with Pennsylvania State University, plans to open a newly constructed 25,000 square foot educational facility, The Center for Building Energy Education & Innovation.

In February 2013, PIDC released an updated Navy Yard master plan, detailing a comprehensive vision for the Navy Yard. The plan calls for adding over 12 million square feet of new construction and historic renovation supporting office, R&D, industrial and residential development, complemented with commercial retail amenities, open spaces and expanded mass transit. At full build, the Navy Yard will support more than 20,000 employees and over $2 billion in private investment. Seven projects are currently under construction, bringing the Navy Yard closer to its strategic targets. Currently construction projects include: an 80,000 square foot headquarters for Franklin Square Partners, an investment firm; EcoSave, an Australian based energy and water efficiency company, will take 20,000 square feet for their North American headquarters in a new 75,000 square foot flex building; and a new five-acre, $9.4 million park broke ground in summer 2014 and will open in 2015. Current and upcoming construction of these developments is valued over $145 million.

Strategic Business Improvement Districts. Starting in 1990, the City began working with business owners, residents, and non-profit organizations to revitalize commercial corridors through the successful creation of key business improvement districts ("BIDs"). BIDs provide an agreed-upon set of business services and improvements to businesses within an established boundary in exchange for a mandatory annual assessment based on property taxes from commercial and multi-family properties within the district. BIDs are authorized by City Council. Currently, Philadelphia has twelve BIDs/Special Services Districts and two voluntary services districts in neighborhoods throughout the City. Since their inception, these districts have seen population growth, increased property values and lowered vacancy rates, and are some of the most desirable places to live and work in Philadelphia. The Center City District and the University City District are the largest BIDs in the City and have played a pivotal role in the resurgence of their service areas.

The Center City District was founded in 1990. The district encompasses 120 blocks and more than 4,500 individual properties in an area that extends beyond the central business district, roughly from Vine Street to Spruce Street and 30th Street to 4th Street. Center City District provides security, cleaning and promotional services that supplement, but do not replace, basic services provided by the City and the fundamental responsibilities of property owners. Center City District also makes physical improvements to the downtown, installing and maintaining lighting, signs, banners, trees and landscape elements. The type of improvements managed by the Center City District are often credited with the area's increased desirability as a place to live and work, attracting a population with higher educational attainment and higher household income than national averages. At 36.9 percent of the population, Center City has more than twice the national average of residents ages 25-34, according to the 2013 five-year American Community Survey estimates. In 2013, 76.2 percent of Center City residents 25 and older had a bachelor degree or higher, compared to the national average of 28.8 percent. From 2010 to 2013, household income in Center City increased by 14.7 percent from $56,121 to $64,383.

The University City District, founded in 1997, is Philadelphia's second largest BID by area, population, and employment. There are approximately 72,997 jobs in the 2.2 square mile area, with an economy centered on its universities and hospitals. Like the Center City District, the University City District provides security, cleaning and promotional services. The district serves as an economic development entity through assisting both start-up and established businesses with regulatory compliance and in applying for grants, coordinating technical resources with neighborhood commercial corridors, and providing career networking opportunities for its residents. University City District also works with City agencies in planning and implementing improvements for public spaces and transportation infrastructure.

Convention, Hospitality and Tourism Achievements. Chief among Philadelphia's development achievements is the expansion of the City's hospitality sector since 1993. Beyond driving growth in employment, development of amenities and cultural assets improves the tourist experience as well as quality of life for Philadelphia residents. In January 2015, the *New York Times* ranked Philadelphia third on its listing of "52 Best Places to Visit in 2015," the top listing for a location in the United States.

With Philadelphia's historic assets, the City has natural appeal as a tourist destination. The City continues to invest and work to increase development and employment in the leisure and hospitality sector. In 1993, with support from the Commonwealth, the Pennsylvania Convention Center was completed, providing a total of 624,000 square feet of saleable space across its four exhibit halls, ballroom and banquet spaces. In 2011, a $786 million expansion, across 20 acres of central Philadelphia real estate, increased the facility to 2.3 million square feet. It is the largest single public works project in Pennsylvania history. In January 2014, SMG began managing and operating the Convention Center, instituting a number of measures intended to reduce and control show costs and improve customer service. In May 2014, SMG implemented new work rules through a customer service agreement signed by the Convention Center and four of six unions. The Convention Center continues to operate with no plans to replace the two unions which did not sign the agreement. Since the customer service agreement was implemented, five major conventions have booked future meetings, which is expected to bring an estimated $91 million in economic activity to the City.

Over three million hotel room nights were sold in Center City in 2013, a 3.1 percent increase over 2012. Contributing to these sales, the Philadelphia Convention and Visitors Bureau (the "PHLCVB") hosted 453 meetings and conventions in 2013, filling 597,744 hotel room nights across the region, with an estimated economic impact of more than $973 million. The total Convention and Group segment of travelers, which includes smaller conferences and meetings not held in the Convention Center, purchased 35 percent of all hotel rooms booked in Center City in 2013, accounting for 1,010,000 room-nights. In 2014, the Convention Center sold over 484,496 total hotel room nights across the region, having an estimated economic impact of more than $729 million, while the total Convention and Group segment of Philadelphia hotel demand exceeded 1,045,000 hotel nights.

According to the PHLCVB, 2015 and 2016 leisure demand is projected to grow by four percent and two percent respectively, due in part to the City's hosting of high profile events such as the 2015 World Meeting of Families, culminating in a papal visit from Pope Francis, and the 2016 Democratic National Convention.

The number of hotel rooms available in the City in 1993 was 5,613, with annual demand of 1,331,684 hotel rooms, representing 65 percent occupancy. As of March 2014, the City's hotel room inventory was 11,410 rooms, with occupancy in 2013 at 73.8 percent. In October 2013, City Council approved a Tax Increment Financing assistance package for the development of a 755-room hotel, home to both the W and Element brands, which will serve as an anchor to the Convention Center. Additionally, in February 2014, Mayor Nutter announced plans for the adaptive reuse of the City's former Family Division of the Court of Common Pleas building to become a 199-room luxury hotel under the Kimpton name.

Table 22 lists notable hotel developments since 2008, representing $782.4 million dollars in investment.

Table 22
Notable Hotel Developments since 2008, in Millions

Four Points by Sheraton	$14.0 (Estimate)
Le Meridien	61.0 (Estimate)
Kimpton Hotel Palomar	94.0
Homewood Suites University City	43.0
Marriott Courtyard, Navy Yard	31.0
Hotel Monaco by Kimpton	88.0
Hilton Home2 Suites	60.0
Residence Inn by Marriott, Airport	26.0 (Estimate)
W Hotel / Element Hotel (Opening 2017)	280.4
Kimpton Hotel 1801 Vine St (Opening 2017)	85.0
101 N. Broad Hotel (Opening 2016)	-
Four Seasons Hotel in Comcast Tower (Opening 2017)	-
Total	**$782.4 million**

Source: City of Philadelphia Commerce Department and PIDC

Despite a drop during the national recession beginning in 2008, Philadelphia's employment in the leisure and hospitality sector had recovered by 2011, with 60,684 employed in the sector, and exceeded pre-recession levels in 2014 with 65,000 employed. The Bureau of Labor Statistics reports that employment in this sector grew 19 percent from 2004 to 2014, as illustrated in Table 4.

Beyond working to increase convention business, the City and its regional partners work to increase the number of leisure travelers as well. According to a 2013 report by Visit Philadelphia, the region's leisure tourism and marketing corporation, since 1997, the number of overnight leisure hotel stays has grown 80 percent. This can be attributed to a number of factors, notably, an increased supply of hotel rooms and marketing of the region. The City, through Visit Philadelphia, supports domestic marketing efforts.

The City supports international marketing efforts through the PHLCVB. The U.S. Office of Travel and Tourism Industries reported that international visitors to Philadelphia in 2013 numbered more than 673,000, an increase of 13 percent over 2012. Table 23 shows the Greater Philadelphia Region's visitation growth from 1997 to 2013.

Table 23
Greater Philadelphia† Visitation Growth, 1997-2013
(in millions)

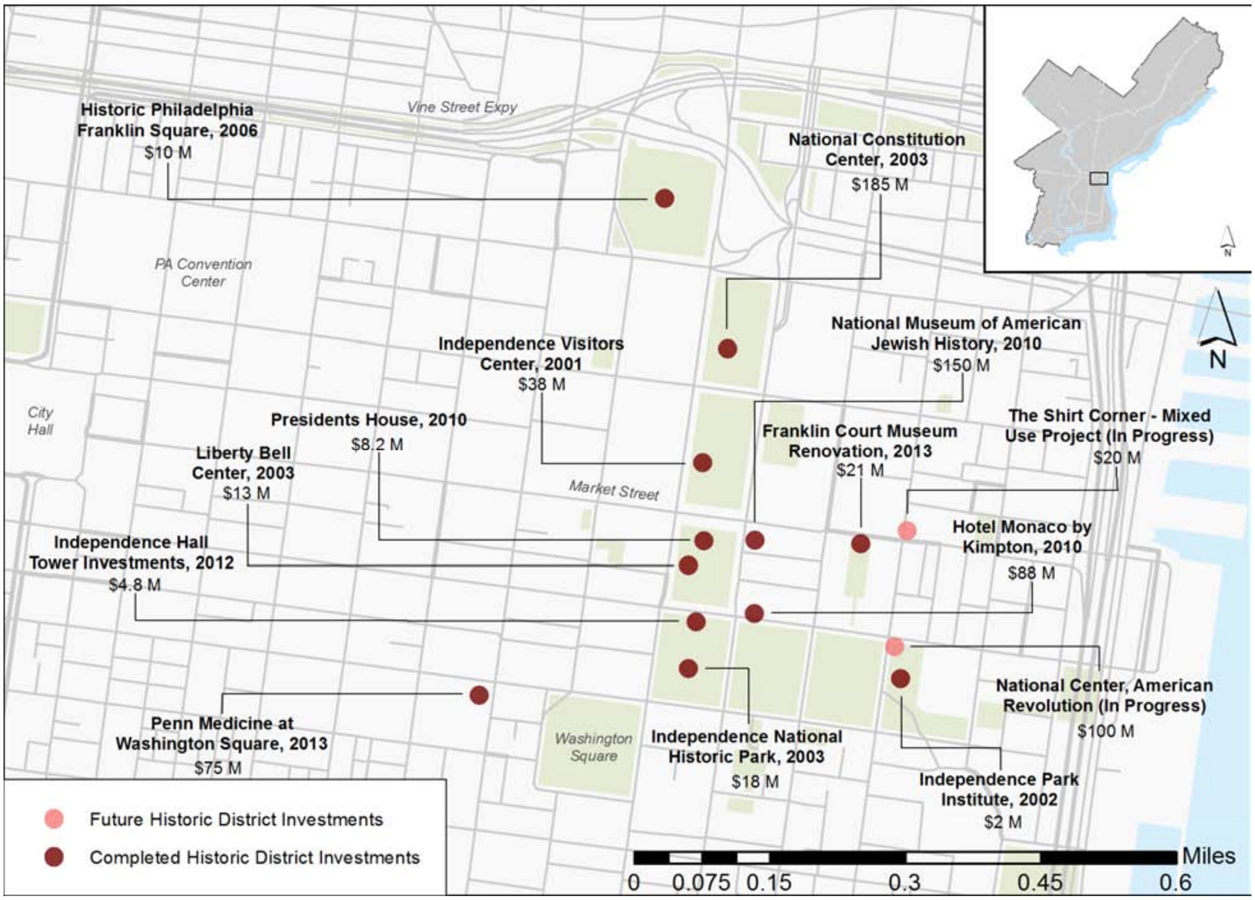
	1997	**2013**	**Net Change**	**Percent Growth**
Total Visitation	26.7	39.0	12.3	46%
Day - Leisure	15.5	20.9	5.4	35%
Overnight - Leisure	7.3	13.4	6.1	84%
Day - Business	2.5	2.6	0.1	4%
Overnight - Business	1.4	2.1	0.7	50%

†Bucks, Chester, Delaware, Montgomery and Philadelphia counties.
Source: Visit Philadelphia, Tourism Economics, Longwoods International.

Crucial to tourism is the City's robust arts and culture sector. The Center City District reports that one-in-three tourists who come to Center City Philadelphia cite museums and cultural events as the primary reason for their visit. In 2011, *Travel + Leisure* magazine ranked Philadelphia as the number one city for arts and culture in the United States. In 2013, major attractions in Center City, including the Liberty Bell Center, Reading Terminal Market, and the Philadelphia Zoo, had over 15.6 million visitors.

Organizations like the Philadelphia Museum of Art, the Kimmel Center, FringeArts, and the more than 400 smaller cultural organizations throughout the City help improve the quality of life for residents and visitors. The Greater Philadelphia Cultural Alliance reported in 2012 that cultural institutions in the PMSA contributed an estimated $1.4 billion in household income in 2011, with $490.3 million in Philadelphia County alone. Part of the wider economic impact generated by this revenue is demonstrated in the over 48,900 creative jobs that the sector supports within Philadelphia.

Figure 2
Map of Select Historic District Development Projects
Representing $733 Million in Selected Completed and Future Investment

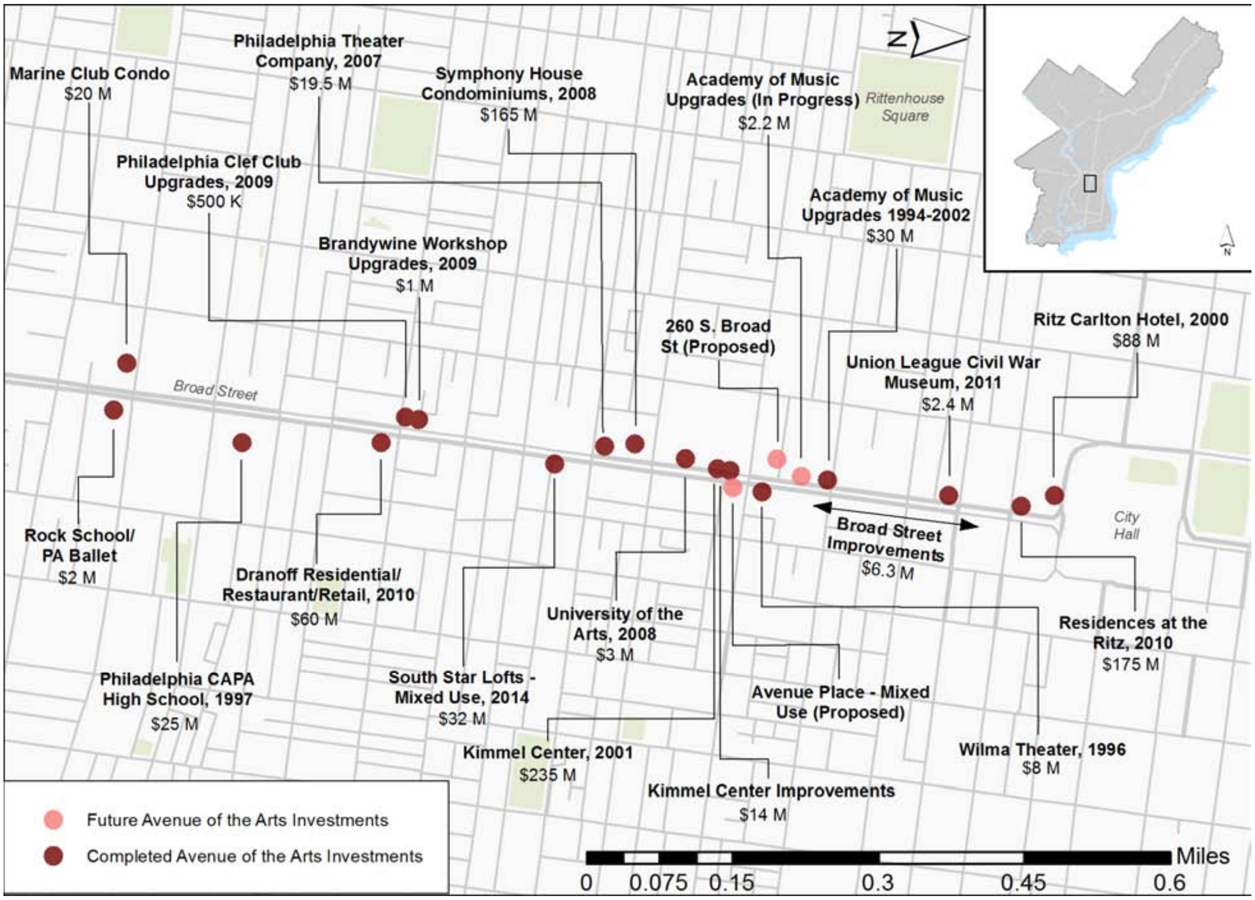


Source: City of Philadelphia Department of Commerce

Historic District Investments. Key to the City's leisure and hospitality growth is the maintenance and investment in the City's extraordinary historic assets. As the birthplace of the country, Philadelphia remains a major tourist destination year-round, particularly the City's Historic District, which includes such national treasures as the Liberty Bell, Independence Hall, Carpenters' Hall, Betsy Ross' house and Elfreth's Alley, the nation's oldest residential street. The City continues to invest in the maintenance and expansion of the Historic District's tourist experience.

Since 2001, $613 million of improvements have been made in Philadelphia's historic district, with an additional $120 million either under construction or planned over the next three years. Figure 2 shows select investments which have complemented the City's notable existing historic assets. Coupled with proposed developments, public and private, this district is expected to remain competitive in the national and international tourism markets for years to come.

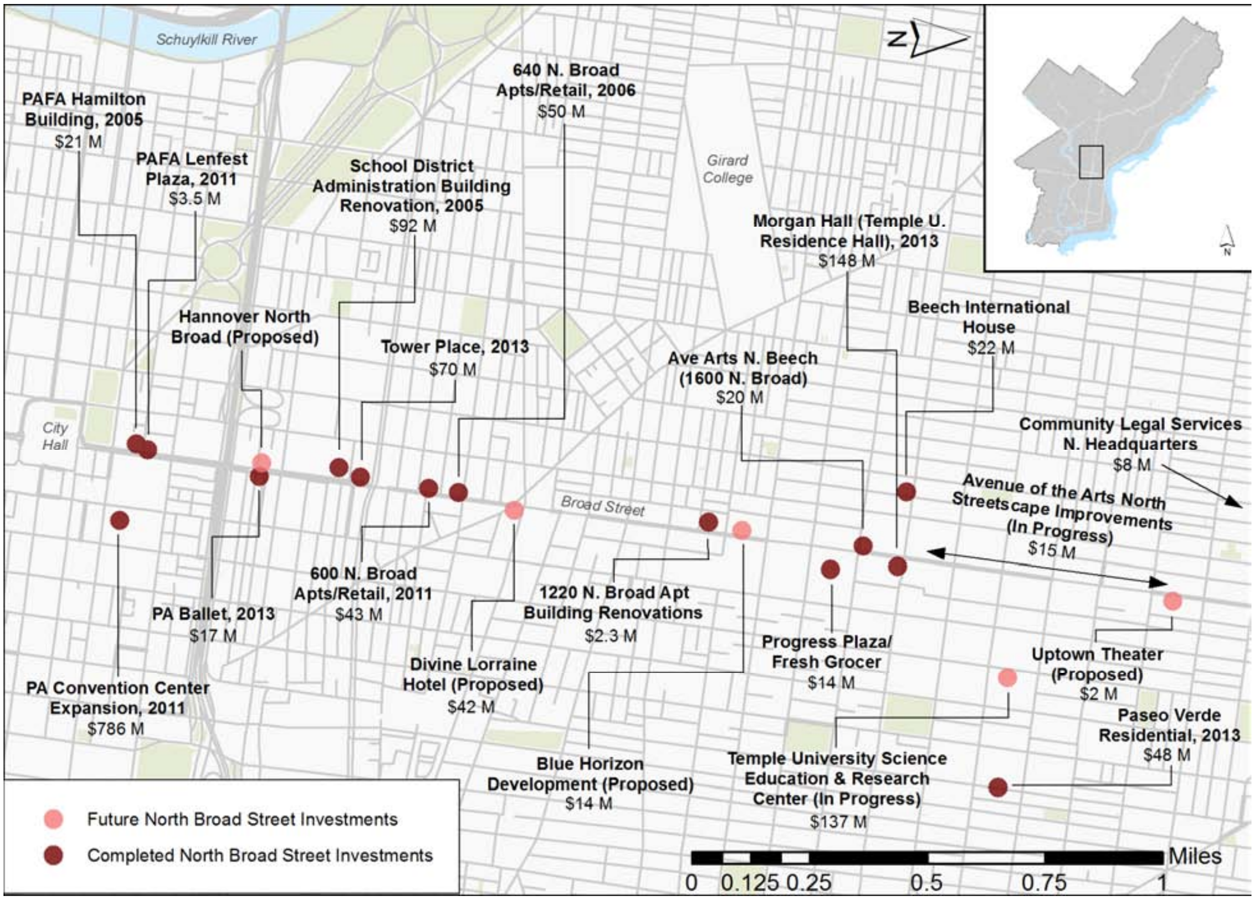
Figure 3
Map of Selected Avenue of the Arts (South Broad Street) Development Projects
Representing $888.9 Million in Selected Completed and Future Investments



Source: City of Philadelphia Department of Commerce

Avenue of the Arts (South Broad Street) Investments. The Avenue of the Arts is located along a mile-long section of South Broad Street between City Hall and Washington Avenue, in the heart of Philadelphia's Center City. Reinventing South Broad Street as the Avenue of the Arts, a world class cultural destination, has been a civic goal in Philadelphia for nearly two decades. Cultural institutions, the William Penn Foundation, local property owners and civic leaders advanced the idea of a performing arts district on South Broad Street anchored by the Academy of Music and modeled after successful performing arts districts around the country. The Avenue of the Arts became a key element of the City's strategy to strengthen Center City as the region's premier cultural destination and an important element in the City's bid to expand its convention and tourism industries. Figure 3 provides an overview of investment to date in this district.

Figure 4
Map of Selected North Broad Street Development Projects
Representing $1.55 Billion in Selected Completed and Future Investments



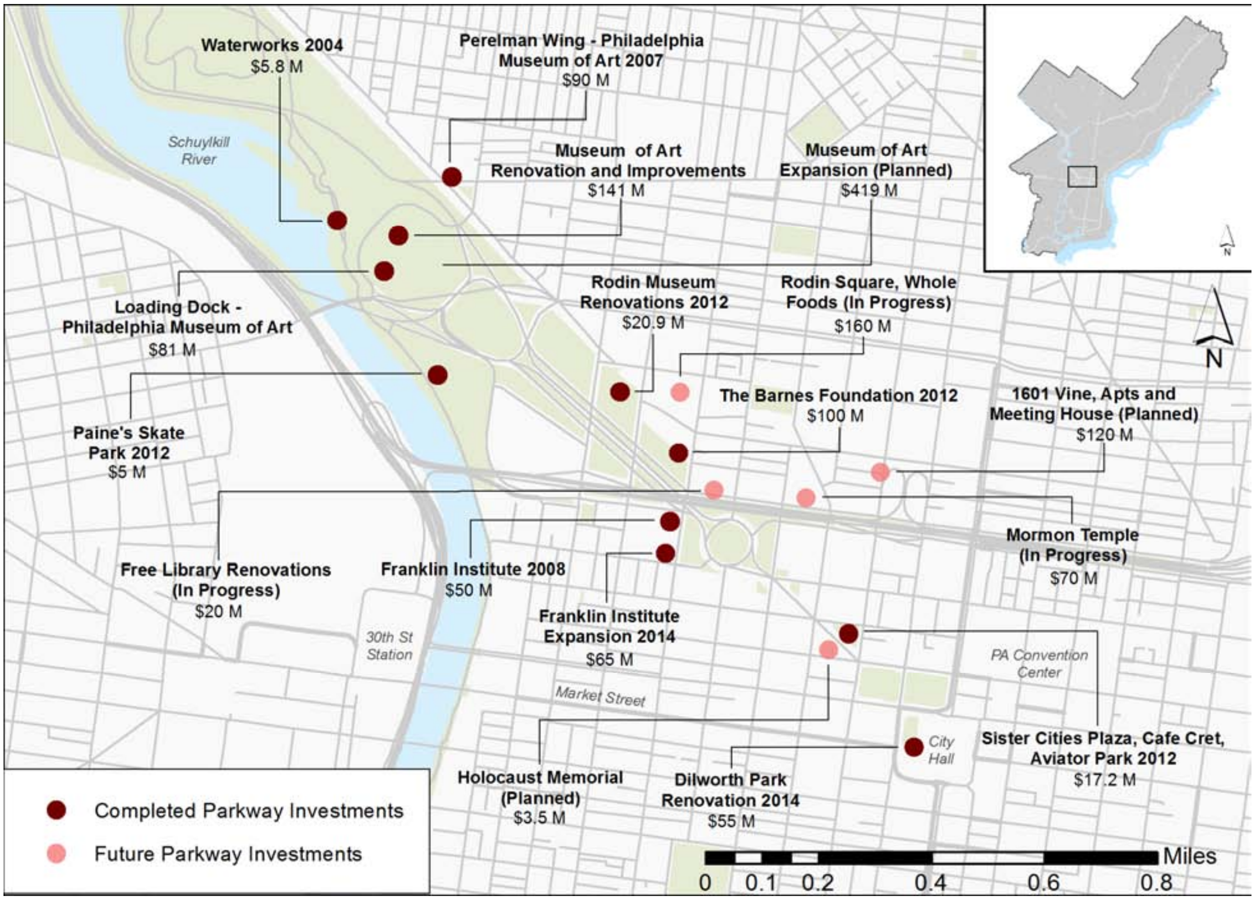
Source: City of Philadelphia Department of Commerce

North Broad Street Investments. The 2011 expansion of the Pennsylvania Convention Center reignited development efforts along the key corridor of North Broad Street. Improvements include Lenfest Plaza, which is adjacent to the Pennsylvania Academy of Fine Arts and across from the Pennsylvania Convention Center expansion's entrance. Lenfest Plaza is also home to Paint Torch, a sculpture by world-renowned American artist Claes Oldenburg.

At Spring Garden Street, the former State office building was redeveloped into 204 rental units and the former headquarters of the Philadelphia Inquirer and Philadelphia Daily News has been sold and is slated for housing and commercial development. Just north of Spring Garden, previously closed commercial businesses have been redeveloped to include 101 new residential lofts, new restaurants and a catering facility. The redevelopment of this block was initiated with the conversion of an empty building into a mixed use development with 250 fully-leased apartments. As discussed on page B-10, Temple University's $1.2 billion capital plans contribute to the revitalization of North Broad Street.

Tying the corridor together is a streetscape enhancement project featuring trees, landscaping and decorative light masts, funded with a mix of federal, state and City funding. Figure 4 shows a map of recent, planned, and proposed projects on the North Broad Street corridor.

Figure 5
Map of Selected Parkway Development Projects
Representing $1.42 Billion in Selected Completed and Future Investments



Source: City of Philadelphia Department of Commerce

Parkway Investments. Complementing the Avenue of the Arts theater district developments, the Philadelphia Parkway is a signature public investment. Conceived as early as 1871, and opened in 1929, the Benjamin Franklin Parkway was originally designed to ease traffic and beautify the City. It runs from the area of City Hall to the Philadelphia Museum of Art and is at the heart of the City's museum district. Today it is central public space and is a principal tourist attraction. Key Parkway features include the Philadelphia Museum of Art, the Rodin Museum, the Franklin Institute, The Barnes Foundation, the Free Library of Philadelphia, the Academy of Natural History, the Swann Memorial Fountain, Sister Cities Park, Cathedral Basilica of Saints Peter and Paul on Logan Square, and numerous pieces of public art.

Opened in May 2012, The Barnes Foundation is a welcome addition to the City's impressive roster of arts facilities, and has had a significant impact on the City's leisure and hospitality industry. In 2013, its first full year of operations, total attendance at The Barnes Foundation was approximately 305,000, and with membership over 25,000, it is ranked among the top institutions of its kind in the country.

Of overnight visitors, arts and culture visitors represent 17 percent, or about 1.36 million, of visitors to Philadelphia annually. According to a 2011 report from Visit Philadelphia, arts and culture visitors spend 54 percent more than the average visitor, stay longer, and are more likely to stay in a hotel.

As detailed in Figure 5, since 2004, the Parkway has undergone additional transformation, improving streetscape and pedestrian access, and adding additional amenities. Improvements include parks, open space and additions to the City's inventory of arts assets.

Waterfront Developments. Taking advantage of the City's geographic assets, the Schuylkill River and the Delaware River, the City is redeveloping its waterfront to accommodate a variety of developments, including mixed-use projects and housing, parks and recreational trails, and hotels. These projects improve quality of life for residents and improve the visitor experience, but also are an impetus for environmental remediation and private development of former industrial property within the City.

- **Delaware River Waterfront Corporation**. The Delaware River has historically been a center of activity, industry, and commerce, bounded at its north and south ends by active port facilities. The City adopted a Master Plan for the Central Delaware in 2011. The Delaware River Waterfront Corporation (the "DRWC"), in partnership with the City, is a nonprofit corporation that works to transform the central Delaware River waterfront into a vibrant destination for recreational, cultural, and commercial activities. Successful park projects include Race Street Pier in 2011 and Washington Avenue Green in 2014. Both parks are adaptive reuse projects built on former pier structures. Another project, Pier 68 is currently under construction, with an anticipated opening in summer 2015. In April 2014, the DRWC published a feasibility study for redevelopment of Penn's Landing, a major public space along the Delaware River waterfront. The Master Plan calls for a combination of public and private investment for the two million square foot development program.

- **Schuylkill River Development Corporation**. Redevelopment along the Schuylkill River is managed by a partnership between the Schuylkill River Development Corporation (the "SRDC"), the Department of Parks & Recreation, and the Department of Commerce. SRDC works with federal, Commonwealth, City and private agencies to coordinate, plan and implement economic, recreational, environmental and cultural improvements, and tourism initiatives on the Schuylkill River. From 1992 to 2014, SRDC has worked with the City to create 1.8 miles of riverfront trails within 17 acres of premiere park space in the heart of the City, and has added amenities to the Schuylkill River Park such as floating docks, fishing piers, composting toilets, and architectural bridge lighting. SRDC continues to work towards meeting its goal of creating and maintaining 10 miles of trail and 70 acres of green space along the tidal Schuylkill River in Philadelphia. The latest Schuylkill Trail extension running from Locust Street to South Street, called the Boardwalk, opened in October 2014 and plans to extend the trail farther south to Christian Street are in final design stages. Since 2005, Philadelphia has benefitted from more than $1 billion in development along the Schuylkill River, with more planned by private developers, universities, and healthcare institutions.

- **Penn Park**. Although not publicly funded, the University of Pennsylvania's Penn Park is a significant piece of infrastructure that strengthens the connection between University City and Center City, improving the resident and visitor experience. It lies along the west bank of the Schuylkill River, and complements the work of the SRDC.

  The University of Pennsylvania opened Penn Park in 2011, increasing the University's green space by 20 percent. The park includes 24 acres of playing fields, open recreational space and pedestrian walkways located between Walnut and South Streets. Formerly parking lots, the park embraces sustainable features, including underground basins that capture rainwater and mitigate storm water overflow into the Schuylkill River. 45,000 cubic yards of soil, 2,200 pilings and more than 500 trees were installed to create canopied hills and picnic areas.

- **SugarHouse Casino**. Legislation enacted by the Pennsylvania General Assembly authorized two stand-alone casino licenses for the City. Philadelphia's first casino, SugarHouse, opened in September 2010. SugarHouse Casino sits on the Delaware River waterfront offering an array of slot machines, table games and dining options. In May 2013, SugarHouse received approval from the Pennsylvania Gaming Control Board to expand its operations, including additional parking and a larger gaming floor. The $155 million expansion, which commenced in July 2014 with completion anticipated by September 2015, is expected to add 500 additional employees to the casino. After a period of significant gains from 2010 through 2012, SugarHouse revenue has leveled off. Until the casino's expansion is complete, current revenue levels are expected to remain relatively unchanged. In 2013, the casino's total revenue was $265,558,237, a decrease of 3.1 percent from 2012, and it employed 1,128 people, up from 1,098 in 2012.

South Philadelphia Sports Complex. Another key element of Philadelphia's hospitality industry is professional sports. Philadelphia is the only city to have a professional hockey, basketball, baseball, and football team playing in a single district within a city, the Sports Complex Special Services District, created by the City in 2000.

The South Philadelphia Sports Complex houses three professional sports facilities: The Wells Fargo Center opened in 1996 and is home to the Philadelphia Flyers (National Hockey League) and Philadelphia 76ers (National Basketball Association); Lincoln Financial Field opened in 2003 and is home to the Philadelphia Eagles (National Football League); and Citizens Bank Park opened in 2004 and is home to the Philadelphia Phillies (Major League Baseball). The Phillies and the Eagles are contractually obligated to play in Philadelphia until 2033 and 2034, respectively.

Average paid home season attendance for the Eagles in Lincoln Financial Field has exceeded 100 percent of actual seating, since its opening in 2003. In the 2009 through 2012 seasons, the Phillies had a paid home season attendance in excess of 100 percent of actual seating at Citizen's Bank Park. In 2010, the Phillies had the second highest attendance of any team in Major League Baseball and in both 2011 and 2012 the Phillies registered the highest home attendance of any team in Major League Baseball. The Phillies attendance rate declined in 2013, but remained in the top ten of Major League Baseball teams. However, 2014 team performance contributed to a significant decline in overall attendance, dropping the Phillies attendance ranking to 16 out of 30 teams.

In March 2012, Xfinity Live! Philadelphia, a 50,000 square foot sports entertainment and dining complex, opened. The privately funded, $60 million venue includes a miniature sports field hosting free concerts and other activities, an outdoor theater accommodating sports games and family films, and a dozen dining and bar establishments. The complex, a Comcast-Spectacor and Cordish-owned company, also hosts the first ever NBC Sports Arena, featuring a 32-foot LED HD television, displaying the NBC Sports Ticker and in-game promotions. The entire complex is open year-round and sustains 276 full-time equivalent jobs.

In November 2014, the Pennsylvania Gaming Control Board awarded the City's remaining casino license to Live! Hotel & Casino, a joint venture between Cordish Cos. and Greenwood Gaming and Entertainment Inc. Once complete in January 2018, the $425 million, 200,000-square-foot casino, will also include a 240-room hotel, 2,000 slots and 125 table games. It will also have a spa and conference center built in and around an existing Holiday Inn at the South Philadelphia Sports Complex.

TRANSPORTATION

The residents of the City and surrounding counties are served by a commuter transportation system operated by SEPTA. This system includes two subway lines, a network of buses and trolleys, and a commuter rail network joining Center City and other areas of the City to PHL and to the surrounding counties. For more information on SEPTA, see "ECONOMIC BASE AND EMPLOYMENT – Southeastern Pennsylvania Transportation Authority (SEPTA)" and APPENDIX IV – "EXPENDITURES OF THE CITY – City Payments to SEPTA."

A high-speed train line runs from southern New Jersey to Center City and is operated by the Port Authority Transit Corporation ("PATCO"), a subsidiary of the Delaware River Port Authority. On the average weekday, PATCO brings approximately 15,000 individuals to Philadelphia.

An important addition to the area's transportation system was the opening of the airport high speed line between Center City and PHL in 1985. The line places PHL less than 25 minutes from the City's central business district and connects directly with the commuter rail network and the Pennsylvania Convention Center. The opening of the commuter rail tunnel in 1984 provided a unified City transportation system linking the commuter rail system, the SEPTA bus, trolley, and subway lines, the high speed line to New Jersey, and the airport high speed line.

New Jersey Transit operates 19 different bus routes and the Atlantic City Train Line, all of which serve to connect Philadelphia and New Jersey. On the average weekday, the New Jersey Transit bus routes bring approximately 2,000 individuals to Philadelphia and the Atlantic City Line brings approximately 700 individuals to Philadelphia.

Amtrak, SEPTA, Norfolk Southern, CSX Transportation, Conrail and the Canadian Pacific provide inter-city commuter and freight rail services connecting the City to other major cities and markets in the United States. According to Amtrak, Philadelphia's 30th Street Station is the third busiest station in the United States. Structural improvements of $30 million were recently completed to the station, and an additional $60 million restoration project is awaiting federal approval.

The City now has one of the most accessible downtown areas in the nation with respect to highway transportation by virtue of Interstate 95 ("I-95"); the Vine Street Expressway (Interstate 676), running east-to-west through the Central Business District between Interstate 76 ("I-76") and I-95; and the "Blue Route" (Interstate 476) in suburban Delaware and Montgomery Counties, which connects the Pennsylvania Turnpike and I-95 and connects to the Schuylkill Expressway (I-76), which runs to Center City Philadelphia. In addition, more than 100 truck lines serve the Philadelphia area.

The City is served within city limits by numerous private buses and shuttles. These buses and shuttles are operated by apartment complexes, universities, and private companies. These buses and shuttles connect Philadelphians to transit hubs, employment, and residences.

Philadelphia is launching its first bike share system, Indego, in the Spring of 2015. The system will launch with 600 bicycles and 60 bicycle kiosks from Temple University to the Navy Yard and from the Delaware River to University City. The system's title sponsor is Independence Blue Cross and it is the first bike share system in the United States to allow for cash payment, in addition to credit card, to access the system. In 2016, Indego plans to increase in size and scope by adding 60 additional bike share kiosks.

KEY CITY-RELATED SERVICES AND BUSINESSES

Water and Wastewater

The water and wastewater systems of the City are owned by the City and operated by the City's Water Department. The water system provides water to the City (134 square mile service area), to Aqua Pennsylvania, Inc., formerly Philadelphia Suburban Water Company, and to the Bucks County Water and Sewer Authority. The City obtains approximately 58 percent of its water from the Delaware River and the balance from the Schuylkill River. The water system serves approximately 483,955 retail customers through 3,172 miles of mains, 3 water treatment plants, 15 pumping stations and provides fire protection through 25,321 fire hydrants. The water treatment plants continue to meet and/or exceed their Safe Drinking Water Act as well as partnership for Safe Water standards.

The wastewater system services a total of 364 square miles of which 134 square miles are within the City and 230 square miles are in suburban areas. The total number of retail customer accounts is approximately 528,938, including approximately 49,993 storm water only accounts. The wastewater and storm water systems contain three water pollution control plants, a biosolids processing facility, 19 pumping stations, and approximately 3,719 miles of sewers. The wastewater treatment plants continue to meet and/or exceed their National Pollutant Discharge Elimination System permit limits.

Solid Waste Disposal

The City is responsible for collecting solid waste, including recycling, from residential households and some commercial establishments. On average, approximately 2,300 tons of solid waste per day are collected by the City. Municipal solid waste is disposed of through a combination of recycling processing facilities, private and City transfer stations within the City limits, and at various landfills operated outside the City limits.

Parks

The City was originally designed by William Penn and Thomas Holme around five urban parks, each of which remains in Center City to this day. The City's parklands total over 10,300 acres, and include Fairmount Park, the world's largest landscaped urban park at 9,200 acres, Pennypack Park, and the Philadelphia Zoo, the country's first zoo. The City also offers its residents and visitors America's most historic square mile, which includes Independence Hall and the Liberty Bell.

Libraries

The Free Library of Philadelphia, the City's public library system, comprises 54 branches and an extensive online resource system.

Streets and Sanitation

The Philadelphia Streets Department (the "Streets Department") and the divisions within it are responsible for the City's large network of streets and roadways. The City's pavement condition is considered to be a "Fair" pavement condition. In order for the City to maintain its pavement in a state of good repair, local streets should be repaved once every 20 years and arterials should be repaved once every 10 years. This requires approximately 131 miles of paving every year. The pavement program has accumulated a backlog of approximately 1,100 miles since 1996. As a result of the new funding under Act 89, the Streets Department has funds to address long standing state of good repair needs without an additional allocation from the General Fund. During Fiscal Years 2014-2017, the Streets Department will invest in critical equipment replacements and begin to implement a strategy to address recurring state of good repair needs. This includes critical equipment replacement, street paving and pothole repair, and replacement of traffic control equipment.

The Streets Department is also responsible for the ongoing collection and disposal of residential trash and recyclables, as well as the construction, cleanliness and maintenance of the street system. The streets system in Philadelphia totals 2,575 miles - 2,180 miles of City streets, 35 miles of Fairmount Park roads and

360 miles of state highways. The Highway Unit and Sanitation Division annually collects and disposes of approximately 600,000 tons of rubbish and 125,000 tons of recycling, completes over 48,000 miles of mechanical street cleaning, clears 1,800 major illegal dump sites, and removes over 155,000 abandoned tires.

Sustainability and Green Initiatives

Mayor Nutter has stated one of his top priorities is to make Philadelphia the greenest and most sustainable city in America. To aid in achieving this goal, the newly created Philadelphia Energy Authority has been tasked with improving energy sustainability and affordability in the City and with educating consumers on their energy choices. The City is investing in and evaluating additional options and investing in green infrastructure to better manage storm water reclamation and reduce pollution of the City's public waters. There has been extensive investment in creating more and better public green spaces, such as Love Park in Center City as well as green spaces along both the Delaware and Schuylkill Rivers. Finally, the City has been taking steps to further reduce automobile traffic, congestion and pollution by making Philadelphia's streets increasingly friendly to bicyclists. Philadelphia is on-track to introduce its new bicycle sharing system in 2015. Bicycle share programs have been successfully implemented in other cities worldwide. The new program will have over 600 new bicycles in its first phase and up to 2,000 bicycles once fully implemented.

APPENDIX VI

FORMS OF OPINIONS OF CO-BOND COUNSEL
FOR EACH OF THE 2015A BONDS AND THE 2015B BONDS

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APPENDIX VI

FORM OF OPINION OF CO-BOND COUNSEL FOR 2015A BONDS

April __, 2015

Re: $________ City of Philadelphia, Pennsylvania
Water and Wastewater Revenue Bonds, Series 2015A

Ladies and Gentlemen:

We have acted as Co-Bond Counsel to the City of Philadelphia (the "City") in connection with the issuance by the City of $_________ aggregate principal amount of its Water and Wastewater Revenue Bonds, Series 2015A (the "Bonds"). The Bonds are issued under and pursuant to (a) The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972 (the "Act"); (b) the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 approved June 24, 1993, as amended by an Ordinance approved on January 23, 2007 (as so amended, the "General Ordinance"), and as supplemented, including by the Fourteenth Supplemental Ordinance approved July 5, 2011 (the "Fourteenth Supplemental Ordinance") and the Seventeenth Supplemental Ordinance approved April 4, 2014 (the "Seventeenth Supplemental Ordinance") authorizing the issuance of the Bonds; and (c) the Bond Committee Determination dated _______, 2015 (the "Bond Committee Determination"). Capitalized terms used but not defined herein have the meanings assigned to such terms in the General Ordinance.

The Bonds are being issued for the purpose of providing funds that will be used to finance (a) capital improvements to the City's Water System and Wastewater System (the "System"), (b) a deposit to the Debt Reserve Account of the Sinking Fund, and (c) the costs of issuance relating to the Bonds.

The City previously has issued, pursuant to the General Ordinance, and there are outstanding Water and Wastewater Revenue Bonds, consisting of the Variable Rate Series 1997B, the Series 1998, the Series 1999A, the Series 2005A, the Variable Rate Series 2005B, the Series 2007A, the Series 2007B, the Series 2009A, the Series 2009B, the Series 2009C, the Series 2009D, the Series 2010A, the Series 2010B, the Series 2010C, the Series 2011A, the Series 2011B, the Series 2012, the Series 2013A, the Series 2014A and the Series 2015B (collectively, the "Outstanding Bonds"). The Outstanding Bonds, the Bonds and all other Water and Wastewater Revenue Bonds hereafter issued by the City under the General Ordinance are and will be equally and ratably secured to the extent provided in the General Ordinance and the Act by the pledge of, and the security interest created in, all Project Revenues derived from the System and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance.

The City has covenanted in the Fourteenth Supplemental Ordinance, the Seventeenth Supplemental Ordinance and the Bond Committee Determination that it will make or permit no investment or other use of the proceeds of the Bonds that would cause the Bonds to be "arbitrage bonds" under Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the rules promulgated thereunder, and that it will comply with the requirements of said Section throughout the term of the Bonds. The City has further covenanted that it will comply with the requirements of the Code that must be met after the issuance of the Bonds in order that interest on the Bonds be excluded from gross income for federal income tax purposes. An officer of the City has executed a certificate stating the reasonable expectations of the City on the date of issue of the Bonds as to future events that are material for purposes of Section 148 of the Code pertaining to arbitrage bonds. We have reviewed this certificate, and in our opinion the Bonds are not arbitrage bonds. The

City is filing with the Internal Revenue Service a report of the issuance of the Bonds as required by Section 149(e) of the Code as a condition of the exclusion from gross income of the interest on the Bonds for federal income tax purposes. We have not undertaken to monitor compliance with respect to the aforesaid covenants or to advise any party as to changes in the law that may affect the exclusion of interest on the Bonds from gross income for federal income tax purposes.

We have examined such proceedings, documents, statutes and decisions, as we consider necessary as the basis for this opinion, including, *inter alia*, the Act, the General Ordinance, the Fourteenth Supplemental Ordinance, the Seventeenth Supplemental Ordinance, the Bond Committee Determination, and the executed and authenticated Bonds. We assume that all other Bonds have been similarly executed and authenticated. We also assume that all documents, records, certifications and other instruments examined by us are genuine (including the signatures thereon), accurate and complete and we have not undertaken, by independent investigation, to verify the factual matters set forth in any such documents, records, certifications or other instruments.

Based on the foregoing, it is our opinion that:

1. The City has the power under the Constitution and the laws of the Commonwealth of Pennsylvania (the "Commonwealth") to perform its obligations under the General Ordinance, the Fourteenth Supplemental Ordinance, the Seventeenth Supplemental Ordinance, the Bond Committee Determination and the Bonds.

2. Under the Constitution and the laws of the Commonwealth, including the Act, the City is authorized to issue the Bonds, and the terms of the Bonds comply with the requirements of the Act, the General Ordinance, the Fourteenth Supplemental Ordinance, the Seventeenth Supplemental Ordinance and the Bond Committee Determination.

3. The purposes for which the Bonds have been issued are lawful purposes under the Act and the General Ordinance.

4. The General Ordinance, the Fourteenth Supplemental Ordinance and the Seventeenth Supplemental Ordinance have been duly enacted, and the Bond Committee Determination has been duly authorized, executed and delivered by the City; and each is a legal, valid and binding obligation of the City enforceable in accordance with its terms, except as the rights created thereunder and the enforcement thereof may be limited by bankruptcy, insolvency, moratorium or other laws or legal or equitable principles affecting the enforcement of creditors' rights.

5. The Bonds have been duly authorized, executed, authenticated, issued and delivered and are legal, valid and binding obligations of the City, enforceable in accordance with their terms, except as enforcement may be limited as described in paragraph 4 above.

6. Under the Act and the General Ordinance, the Bonds constitute special obligations of the City payable solely from Project Revenues and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings, if any, on amounts in such funds and accounts (other than the Rebate Fund). The Bonds do not pledge the credit or taxing power or create any debt or charge against the tax or general revenues of the City or create any lien against property of the City other than all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund).

7. Interest on the Bonds is excludable from gross income for purposes of federal income tax under existing laws as enacted and construed on the date of the initial delivery of the Bonds, assuming the accuracy of the certifications of the City and continuing compliance by the City with the

requirements of the Code. Interest on the Bonds is not an item of tax preference for purposes of either individual or corporate federal alternative minimum tax; however, interest on Bonds held by a corporation (other than an S corporation, regulated investment company, or real estate investment trust) may be indirectly subject to federal alternative minimum tax because of its inclusion in the adjusted current earnings of a corporate holder. We express no opinion regarding other federal tax consequences relating to ownership or disposition of, or the accrual or receipt of interest on, the Bonds.

In rendering this opinion, we have assumed compliance by the City with the covenants contained in the General Ordinance, the Fourteenth Supplemental Ordinance, the Seventeenth Supplemental Ordinance and the Bond Committee Determination that are intended to comply with the requirements in the Code relating to actions to be taken by the City in respect of the Bonds after the issuance thereof to the extent necessary to effect or maintain the federal exclusion from gross income of the interest on the Bonds. Failure to comply with such covenants could cause the interest on the Bonds to be includable in gross income retroactively to the date of issuance of the Bonds.

8. Under the laws of the Commonwealth, as enacted and construed on the date of the issuance of the Bonds, the Bonds are exempt from personal property taxes in Pennsylvania and interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax.

We render this opinion as of the date hereof on the basis of federal law and the laws of the Commonwealth as enacted and construed on the date hereof. We express no opinion as to any matter not set forth in the numbered paragraphs herein, including, without limitation, the accuracy or completeness of the preliminary or final official statement or other documents prepared or statements made in connection with the offering and sale of the Bonds, and make no representation that we have independently verified the contents thereof.

Very truly yours,

FORM OF OPINION OF CO-BOND COUNSEL
FOR 2015B BONDS

April __, 2015

Re: $________ City of Philadelphia, Pennsylvania
Water and Wastewater Revenue Refunding Bonds, Series 2015B

Ladies and Gentlemen:

We have acted as Co-Bond Counsel to the City of Philadelphia (the "City") in connection with the issuance by the City of $_________ aggregate principal amount of its Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "Bonds"). The Bonds are issued under and pursuant to (a) The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972 (the "Act"); (b) the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989 approved June 24, 1993, as amended by an Ordinance approved on January 23, 2007 (as so amended, the "General Ordinance"), and as supplemented, including by the Fifteenth Supplemental Ordinance approved July 5, 2011 (the "Fifteenth Supplemental Ordinance") and the Sixteenth Supplemental Ordinance approved April 24, 2013 (the "Sixteenth Supplemental Ordinance") authorizing the issuance of the Bonds; and (c) the Bond Committee Determination dated _______, 2015 (the "Bond Committee Determination"). Capitalized terms used but not defined herein have the meanings assigned to such terms in the General Ordinance.

The Bonds are being issued for the purpose of providing funds that will be used to finance (a) the refunding, on a current basis, of a portion of the City's outstanding Water and Wastewater Revenue Bonds, Series 2005A and (b) the costs of issuance relating to the Bonds.

The City previously has issued, pursuant to the General Ordinance, and there are outstanding Water and Wastewater Revenue Bonds, consisting of the Variable Rate Series 1997B, the Series 1998, the Series 1999A, the Series 2005A, the Variable Rate Series 2005B, the Series 2007A, the Series 2007B, the Series 2009A, the Series 2009B, the Series 2009C, the Series 2009D, the Series 2010A, the Series 2010B, the Series 2010C, the Series 2011A, the Series 2011B, the Series 2012, the Series 2013A, the Series 2014A and the Series 2015A (collectively, the "Outstanding Bonds"). The Outstanding Bonds, the Bonds and all other Water and Wastewater Revenue Bonds hereafter issued by the City under the General Ordinance are and will be equally and ratably secured to the extent provided in the General Ordinance and the Act by the pledge of, and the security interest created in, all Project Revenues derived from the System and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance.

The City has covenanted in the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Bond Committee Determination that it will make or permit no investment or other use of the proceeds of the Bonds that would cause the Bonds to be "arbitrage bonds" under Section 148 of the Internal Revenue Code of 1986, as amended (the "Code"), and the rules promulgated thereunder, and that it will comply with the requirements of said Section throughout the term of the Bonds. The City has further covenanted that it will comply with the requirements of the Code that must be met after the issuance of the Bonds in order that interest on the Bonds be excluded from gross income for federal income tax purposes. An officer of the City has executed a certificate stating the reasonable expectations of the City on the date of issue of the Bonds as to future events that are material for purposes of Section 148 of the Code pertaining to arbitrage bonds. We have reviewed this certificate, and in our opinion the

Bonds are not arbitrage bonds. The City is filing with the Internal Revenue Service a report of the issuance of the Bonds as required by Section 149(e) of the Code as a condition of the exclusion from gross income of the interest on the Bonds for federal income tax purposes. We have not undertaken to monitor compliance with respect to the aforesaid covenants or to advise any party as to changes in the law that may affect the exclusion of interest on the Bonds from gross income for federal income tax purposes.

We have examined such proceedings, documents, statutes and decisions, as we consider necessary as the basis for this opinion, including, *inter alia*, the Act, the General Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance, the Bond Committee Determination, and the executed and authenticated Bonds. We assume that all other Bonds have been similarly executed and authenticated. We also assume that all documents, records, certifications and other instruments examined by us are genuine (including the signatures thereon), accurate and complete and we have not undertaken, by independent investigation, to verify the factual matters set forth in any such documents, records, certifications or other instruments.

Based on the foregoing, it is our opinion that:

1. The City has the power under the Constitution and the laws of the Commonwealth of Pennsylvania (the "Commonwealth") to perform its obligations under the General Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance, the Bond Committee Determination and the Bonds.

2. Under the Constitution and the laws of the Commonwealth, including the Act, the City is authorized to issue the Bonds, and the terms of the Bonds comply with the requirements of the Act, the General Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Bond Committee Determination.

3. The purposes for which the Bonds have been issued are lawful purposes under the Act and the General Ordinance.

4. The General Ordinance, the Fifteenth Supplemental Ordinance and the Sixteenth Supplemental Ordinance have been duly enacted, and the Bond Committee Determination has been duly authorized, executed and delivered by the City; and each is a legal, valid and binding obligation of the City enforceable in accordance with its terms, except as the rights created thereunder and the enforcement thereof may be limited by bankruptcy, insolvency, moratorium or other laws or legal or equitable principles affecting the enforcement of creditors' rights.

5. The Bonds have been duly authorized, executed, authenticated, issued and delivered and are legal, valid and binding obligations of the City, enforceable in accordance with their terms, except as enforcement may be limited as described in paragraph 4 above.

6. Under the Act and the General Ordinance, the Bonds constitute special obligations of the City payable solely from Project Revenues and all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings, if any, on amounts in such funds and accounts (other than the Rebate Fund). The Bonds do not pledge the credit or taxing power or create any debt or charge against the tax or general revenues of the City or create any lien against property of the City other than all amounts on deposit in or standing to the credit of the funds and accounts (other than the Rebate Fund) established pursuant to the General Ordinance, together with interest earnings on amounts in such funds and accounts (other than the Rebate Fund).

7. Interest on the Bonds is excludable from gross income for purposes of federal income tax under existing laws as enacted and construed on the date of the initial delivery of the Bonds, assuming the accuracy of the certifications of the City and continuing compliance by the City with the requirements of the Code. Interest on the Bonds is not an item of tax preference for purposes of either individual or corporate federal alternative minimum tax; however, interest on Bonds held by a corporation (other than an S corporation, regulated investment company, or real estate investment trust) may be indirectly subject to federal alternative minimum tax because of its inclusion in the adjusted current earnings of a corporate holder. We express no opinion regarding other federal tax consequences relating to ownership or disposition of, or the accrual or receipt of interest on, the Bonds.

In rendering this opinion, we have assumed compliance by the City with the covenants contained in the General Ordinance, the Fifteenth Supplemental Ordinance, the Sixteenth Supplemental Ordinance and the Bond Committee Determination that are intended to comply with the requirements in the Code relating to actions to be taken by the City in respect of the Bonds after the issuance thereof to the extent necessary to effect or maintain the federal exclusion from gross income of the interest on the Bonds. Failure to comply with such covenants could cause the interest on the Bonds to be includable in gross income retroactively to the date of issuance of the Bonds.

8. Under the laws of the Commonwealth, as enacted and construed on the date of the issuance of the Bonds, the Bonds are exempt from personal property taxes in Pennsylvania and interest on the Bonds is exempt from Pennsylvania personal income tax and Pennsylvania corporate net income tax.

We render this opinion as of the date hereof on the basis of federal law and the laws of the Commonwealth as enacted and construed on the date hereof. We express no opinion as to any matter not set forth in the numbered paragraphs herein, including, without limitation, the accuracy or completeness of the preliminary or final official statement or other documents prepared or statements made in connection with the offering and sale of the Bonds, and make no representation that we have independently verified the contents thereof.

Very truly yours,

APPENDIX VII

FORM OF CONTINUING DISCLOSURE AGREEMENT

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APPENDIX VII

FORM OF CONTINUING DISCLOSURE AGREEMENT

This Continuing Disclosure Agreement (the "Agreement") dated April __, 2015, by and between The City of Philadelphia, Pennsylvania ("City") and Digital Assurance Certification, L.L.C., as dissemination agent ("Dissemination Agent") in connection with the issuance and sale by the City of Philadelphia, Pennsylvania (the "City") of $_______ aggregate principal amount of its Water and Wastewater Revenue Bonds, Series 2015A (the "2015A Bonds") and $_____ aggregate principal amount of its Water and Wastewater Revenue Refunding Bonds, Series 2015B (the "2015B Bonds" and, together with the 2015A Bonds, the "Bonds"). The Bonds are being issued pursuant to the Act and the General Ordinance. Capitalized terms used in this Agreement shall have the respective meanings specified above or in Article IV hereof.

In consideration of the mutual covenants, promises and agreements contained herein and intending to be legally bound hereby, the parties hereto agree as follows:

ARTICLE I

The Undertaking

Section 1.1. Purpose. This Agreement is authorized to be executed and delivered by the City pursuant to the General Ordinance and Section 7 of the Bond Committee Determination in order to assist the Underwriters in complying with subsection (b)(5) of the Rule.

Section 1.2. Annual Financial Information. (a) Commencing with the fiscal year ending June 30, 2015, the Disclosure Representative shall deliver to the Dissemination Agent no later than February 28, 2016, and no later than each succeeding February 28 thereafter, Annual Financial Information with respect to each fiscal year of the City. The Dissemination Agent shall promptly upon receipt thereof file the Annual Financial Information with EMMA (as defined herein).

(b) The Dissemination Agent shall provide, in a timely manner, notice of any failure of the City to provide the Annual Financial Information by the date specified in subsection (a) hereof.

Section 1.3. Audited Financial Statements. If not provided as part of Annual Financial Information by the date required by Section 1.2(a) hereof, the Disclosure Representative shall provide Audited Financial Statements, when and if available, to the Dissemination Agent. The Dissemination Agent shall promptly upon receipt thereof file such Audited Financial Statements with EMMA.

Section 1.4. Notice Events. (a) If a Notice Event occurs, the Disclosure Representative shall provide through the Dissemination Agent, in a timely manner not in excess of ten (10) business days after the occurrence of such Notice Event, notice of such Notice Event to EMMA.

(b) Any notice of a defeasance of the Bonds shall state whether the Bonds have been escrowed to maturity or to an earlier redemption date and the timing of such maturity or redemption.

(c) Each Notice Event notice relating to the Bonds shall include the CUSIP numbers of the Bonds to which such Notice Event notice relates or, if the Notice Event notice relates to all bond issues of the City including the Bonds, such Notice Event notice need only include the CUSIP number of the City.

(d) The Dissemination Agent shall promptly advise the City whenever, in the course of performing its duties as Dissemination Agent under this Agreement, the Dissemination Agent has actual notice of an occurrence which, if material, would require the City to provide notice of a Notice Event hereunder;

provided, however, that the failure of the Dissemination Agent so to advise the City shall not constitute a breach by the Dissemination Agent of any of its duties and responsibilities under this Agreement.

Section 1.5. Additional Information. Nothing in this Agreement shall be deemed to prevent the City from disseminating any other information, using the means of dissemination set forth in this Agreement or any other means of communication, or including any other information in any Annual Financial Information or notice of Notice Event hereunder, in addition to that which is required by this Agreement. If the City chooses to do so, the City shall have no obligation under this Agreement to update such additional information or include it in any future Annual Financial Information or notice of a Notice Event hereunder.

Section 1.6. Additional Disclosure Obligations. The City acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933 and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, may apply to the City and that, under some circumstances, compliance with this Agreement without additional disclosures or other action may not fully discharge all duties and obligations of the City under such laws.

ARTICLE II

Operating Rules

Section 2.1. Reference to Other Filed Documents. It shall be sufficient for purposes of Section 1.2 hereof if the City provides Annual Financial Information by specific reference to documents (i) available to the public on the MSRB Internet Web site (currently, www.emma.msrb.org) or (ii) filed with the SEC. The provisions of this Section shall not apply to notices of Notice Events pursuant to Section 1.4 hereof.

Section 2.2. Submission of Information. Annual Financial Information may be set forth or provided in one document or a set of documents, and at one time or in part from time to time.

Section 2.3. Dissemination Agent. The City has designated the Dissemination Agent as its agent to act on its behalf in providing or filing notices, documents and information as required of the City under this Agreement. The City may revoke or modify such designation. Upon any revocation of such designation, the City shall comply with its obligation to provide or file notices, documents and information as required under this Agreement or may designate another agent to act on its behalf.

Section 2.4. Transmission of Notices, Documents and Information. (a) Unless otherwise required by the MSRB, all notices, documents and information provided to the MSRB shall be provided to the MSRB's Electronic Municipal Markets Access ("EMMA") system, the current Internet Web address of which is www.emma.msrb.org.

(b) All notices, documents and information provided on EMMA shall be provided in an electronic format as prescribed by the MSRB and shall be accompanied by identifying information as prescribed by the MSRB.

Section 2.5. Fiscal Year. (a) The City's current fiscal year begins July 1, and the City shall promptly file a notification on EMMA, through the Dissemination Agent, of each change in its fiscal year.

(b) Annual Financial Information shall be provided at least annually notwithstanding any fiscal year longer than 12 calendar months.

ARTICLE III

Effective Date, Termination, Amendment and Enforcement

Section 3.1. Effective Date; Termination. (a) This Agreement shall be effective upon the issuance of the Bonds.

(b) The City's and the Dissemination Agent's obligations under this Agreement shall terminate upon a legal defeasance, prior redemption or payment in full of all of the Bonds.

Section 3.2. Amendment. (a) This Agreement may be amended, by written agreement of the parties, without the consent of the holders of the Bonds (except to the extent required under clause (4)(ii) below), if all of the following conditions are satisfied: (1) such amendment is made in connection with a change in circumstances that arises from a change in legal (including regulatory) requirements, a change in law (including rules or regulations) or in interpretations thereof, or a change in the identity, nature or status of the City or the type of business conducted thereby, (2) this Agreement as so amended would have complied with the requirements of the Rule as of the date of this Agreement, after taking into account any amendments or interpretations of the Rule, as well as any change in circumstances, (3) the City shall have delivered to the Dissemination Agent an opinion of Counsel, addressed to the City and the Dissemination Agent, to the same effect as set forth in clause (2) above, (4) either (i) the City shall have delivered to the Dissemination Agent an opinion of Counsel or a determination by an entity, in each case unaffiliated with the City (such as bond counsel or the Dissemination Agent), addressed to the City and the Dissemination Agent, to the effect that the amendment does not materially impair the interests of the holders of the Bonds or (ii) the holders of the Bonds consent to the amendment to this Agreement pursuant to the same procedures as are required for amendments to the General Ordinance with consent of holders of Bonds pursuant to the General Ordinance as in effect at the time of the amendment, and (5) the Disclosure Representative shall have delivered copies of such opinion(s) and amendment to the Dissemination Agent. The items provided in clause (5) shall be promptly filed by the Dissemination Agent on EMMA and sent to each Registered Owner.

(b) This Agreement may be amended, by written agreement of the parties, without the consent of the holders of the Bonds, if all of the following conditions are satisfied: (1) an amendment to the Rule is adopted, or a new or modified official interpretation of the Rule is issued, after the effective date of this Agreement which is applicable to this Agreement, (2) the City shall have delivered to the Dissemination Agent an opinion of Counsel, addressed to the City and the Dissemination Agent, to the effect that performance by the City and the Dissemination Agent under this Agreement as so amended will not result in a violation of the Rule and (3) the Disclosure Representative shall have delivered copies of such opinion and amendment to the Dissemination Agent. The items provided in clause (3) shall be promptly filed by the Dissemination Agent on EMMA and sent to each Registered Owner.

(c) This Agreement may be amended by written agreement of the parties, without the consent of the holders of the Bonds, if all of the following conditions are satisfied: (1) the City shall have delivered to the Dissemination Agent an opinion of Counsel, addressed to the City and the Dissemination Agent, to the effect that the amendment is permitted by rule, order or other official pronouncement, or is consistent with any interpretive advice or no-action positions of Staff, of the SEC, and (2) the Disclosure Representative shall have delivered copies of such opinion and amendment to the Dissemination Agent. The items provided in clause (2) shall be promptly filed by the Dissemination Agent on EMMA and sent to each Registered Owner.

(d) To the extent any amendment to this Agreement results in a change in the type of financial information or operating data provided pursuant to this Agreement, the first Annual Financial Information provided thereafter shall include a narrative explanation of the reasons for the amendment and the impact of the change in the type of operating data or financial information being provided.

(e) If an amendment is made pursuant to Section 3.2(a) hereof to the accounting principles to be followed by the City in preparing its financial statements, the Annual Financial Information for the fiscal year in which the change is made shall present a comparison between the financial statements or information prepared on the basis of the new accounting principles and those prepared on the basis of the former accounting principles. Such comparison shall include a qualitative and, to the extent reasonably feasible, quantitative discussion of the differences in the accounting principles and the impact of the change in the accounting principles on the presentation of the financial information.

Section 3.3. Benefit; Third-Party Beneficiaries; Enforcement. (a) The provisions of this Agreement shall constitute a contract with and inure solely to the benefit of the holders from time to time of the Bonds, except that beneficial owners of Bonds shall be third-party beneficiaries of this Agreement. The provisions of this Agreement shall create no rights in any person or entity except as provided in this subsection (a) and in subsection (b) of this Section.

(b) The obligations of the City to comply with the provisions of this Agreement shall be enforceable by any holder of Outstanding Bonds. The holders' rights to enforce the provisions of this Agreement shall be limited solely to a right, by action in mandamus or for specific performance, to compel performance of the City's obligations under this Agreement. In consideration of the third-party beneficiary status of beneficial owners of Bonds pursuant to subsection (a) of this Section, beneficial owners shall be deemed to be holders of Bonds for purposes of this subsection (b).

(c) Any failure by the City or the Dissemination Agent to perform in accordance with this Agreement shall not constitute a default or an Event of Default under the General Ordinance, and the rights and remedies provided by the General Ordinance upon the occurrence of a default or an Event of Default shall not apply to any such failure.

(d) This Agreement shall be construed and interpreted in accordance with the laws of the Commonwealth, and any suits and actions arising out of this Agreement shall be instituted in a court of competent jurisdiction in the Commonwealth; provided, however, that to the extent this Agreement addresses matters of federal securities laws, including the Rule, this Agreement shall be construed in accordance with such federal securities laws and official interpretations thereof.

ARTICLE IV

Definitions

Section 4.1. Definitions. The following terms used in this Agreement shall have the following respective meanings:

(1) "Act" means The First Class City Revenue Bond Act, P.L. 955, Act No. 234 of the General Assembly of the Commonwealth of Pennsylvania, approved October 18, 1972.

(2) "Annual Financial Information" means, collectively, (i) the Annual Financial Report-Philadelphia Water Department for the most recently ended Fiscal Year, (ii) financial information or operating data with respect to the City, substantially similar to the type set forth in the Official Statement, delivered at least annually pursuant to Section 1.2(a) hereof and in accordance with the Rule and (iii) the information regarding amendments to this Agreement required pursuant to Sections 3.2(d) and (e) of this Agreement. Annual Financial Information shall include Audited Financial Statements, if available, or Unaudited Financial Statements.

In connection with Section 4.1.(2)(ii), it is the City's intention to satisfy such obligations by submitting to EMMA (A) its "Annual Report of Bonded Indebtedness and Other Long Term Obligations" in substantially the same format as such report for the Fiscal Year ended June 30, 2014, and (B) the annual audited financial statements of its Municipal Pension Fund.

The descriptions contained in Section 4.1(2)(i) hereof of financial information and operating data constituting Annual Financial Information are of general categories of financial information and operating data. When such descriptions include information that no longer can be generated because the operations to which it related have been materially changed or discontinued, a statement to that effect shall be provided in lieu of such information. Any Annual Financial Information containing modified financial information or operating data shall explain, in narrative form, the reasons for the modification and the impact of the modification on the type of financial information or operating data being provided.

(3) "Audited Financial Statements" means the annual financial statements, if any, of the City, which includes the financial statements of the Water Fund, audited by such auditor as shall then be required or permitted by Commonwealth law. Audited Financial Statements shall be prepared in accordance with GAAP; provided, however, that pursuant to Sections 3.2(a) and (e) hereof, the City may from time to time, if required by federal or Commonwealth legal requirements, modify the accounting principles to be followed in preparing its financial statements. The notice of any such modification required by Section 3.2(a) hereof shall include a reference to the specific federal or Commonwealth law a regulation describing such accounting principles, or other description thereof.

(4) "Bond Committee Determination means the Bond Committee Determination for the Bonds adopted by the Bond Committee (consisting of the Mayor, the City Solicitor and the City Controller and acting by a majority thereof) on _________, 2015.

(5) "Commonwealth" means the Commonwealth of Pennsylvania.

(6) "Counsel" means any nationally recognized bond counsel or counsel expert in federal securities laws.

(7) "Disclosure Representative" means the Director of Finance of the City, the City Treasurer or such other official or employee of the City as the Director of Finance or the City Treasurer shall designate in writing to the Dissemination Agent.

(8) "GAAP" means generally accepted accounting principles as prescribed from time to time for governmental units by the Governmental Accounting Standards Board, the Financial Accounting Standards Board, or any successor to the duties and responsibilities of either of them.

(9) "Fiscal Agent" means U.S. Bank National Association, as fiscal agent and registrar for the Bonds.

(10) "General Ordinance" means the City's Restated General Water and Wastewater Revenue Bond Ordinance of 1989, approved June 24, 1993, as supplemented and amended by seventeen (17) supplemental ordinances, as further supplemented or amended from time to time

(11) "MSRB" means the Municipal Securities Rulemaking Board established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934, or any successor thereto or to the functions of the MSRB contemplated by this Agreement.

(12) "Notice Event" means any of the following events with respect to the Bonds, whether relating to the City or otherwise:

(i) principal and interest payment delinquencies;

(ii) non-payment related defaults, if material;

(iii) unscheduled draws on debt service reserves reflecting financial difficulties;

(iv) unscheduled draws on credit enhancements reflecting financial difficulties;

(v) substitution of credit or liquidity providers, or their failure to perform;

(vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices of determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;

(vii) modifications to rights of Bondholders, if material;

(viii) Bond calls, if material, and tender offers;

(ix) defeasances;

(x) release, substitution, or sale of property securing repayment of the Bonds, if material;

(xi) rating changes;

(xii) bankruptcy, insolvency, receivership or similar event of the City;

(xiii) the consummation of a merger, consolidation, or acquisition involving the City or the sale of all or substantially all of the assets of the City, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and

(xiv) appointment of a successor or additional paying agent, or the change of name of a paying agent, if material.

(13) "Official Statement" means the Official Statement dated ______ __, 2015 of the City relating to the Bonds.

(14) "Registered Owner" or "Registered Owners" means the person or persons in whose name a Bond is registered on the books of the Authority maintained by the Fiscal Agent in accordance with the General Ordinance. For so long as the Bonds shall be registered in the name of the Securities Depository or its nominee, the term "Registered Owner" or "Registered Owners" also means and includes, for the purposes of this Agreement, the owners of book-entry credits in the Bonds evidencing an interest in the Bonds; <u>provided, however</u>, that the Dissemination Agent shall have no obligation to provide notice hereunder to owners of book-entry credits in the Bonds except those who have filed their names and addresses with the Dissemination Agent for the purposes of receiving notices or giving direction under this Agreement.

(15) "Rule" means Rule 15c2-12 promulgated by the SEC under the Securities Exchange Act of 1934 (17 CFR Part 240, §240.15c2-12), as amended, as in effect on the date of this Agreement, including any official interpretations thereof issued either before or after the effective date of this Agreement which are applicable to this Agreement.

(16) "SEC" means the United States Securities and Exchange Commission.

(17) “Securities Depository” shall mean The Depository Trust Company, New York, New York, or its nominee, Cede & Co., or successor thereto appointed pursuant to the General Ordinance.

(18) “Unaudited Financial Statements” means the same as Audited Financial Statements, except that they shall not have been audited.

(19) “Underwriters” means the financial institutions named on the cover of the Official Statement.

ARTICLE V

Miscellaneous

Section 5.1. Duties, Immunities and Liabilities of the Dissemination Agent. The Dissemination Agent shall have only such duties under the Agreement as are specifically set forth in this Agreement, and the City agrees to indemnify and save the Dissemination Agent, its officers, directors, employees and agents, harmless against any loss, expense and liabilities which it may incur arising out of or in the exercise or performance of its powers and duties hereunder, including the costs and expenses (including attorneys fees) of defending against any claim of liability, but excluding liabilities due to the Dissemination Agent’s negligence or willful misconduct in the performance of its duties hereunder. The obligations of the City under this Section shall survive resignation or removal of the Dissemination Agent and payment of the Bonds.

Section 5.2. Counterparts. This Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

IN WITNESS WHEREOF, THE CITY OF PHILADELPHIA, PENNSYLVANIA, has caused this Disclosure Agreement to be executed by the Director of Finance and DIGITAL ASSURANCE CERTIFICATION, L.L.C., as Dissemination Agent, has caused this Disclosure Agreement to be executed by one of its authorized officers, all as of the day and year first above written.

CITY OF PHILADELPHIA, PENNSYLVANIA

By:______________________________
Name: Rob Dubow
Title: Director of Finance

DIGITAL ASSURANCE CERTIFICATION, L.L.C.,
as Dissemination Agent

By:______________________________
Name:
Title:

APPENDIX VIII

BOOK-ENTRY ONLY SYSTEM

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APPENDIX VIII

BOOK-ENTRY ONLY SYSTEM

DTC will act as securities depository for the Bonds. The Bonds will be initially issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for each maturity of the Bonds, each in the aggregate principal amount thereof, and will be deposited with DTC.

DTC, the world's largest securities depository, is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.6 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has a Standard & Poor's rating of "AA+". The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com and www.dtc.org.

Purchases of the Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC's records. The ownership interest of each actual purchaser of each Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. If less than all the Bonds of a series within a maturity are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such maturity to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the issuer as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the City or the Fiscal Agent, on payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Fiscal Agent, or the City, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the City or the Fiscal Agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to the Bonds at any time by giving reasonable notice to the City or the Fiscal Agent. Under such circumstances, in the event that a successor depository is not obtained, bond certificates are required to be printed and delivered.

The City may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, bond certificates will be printed and delivered.

THE CITY AND THE FISCAL AGENT WILL NOT HAVE ANY RESPONSIBILITY OR OBLIGATION TO DTC PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE ACCURACY OF THE RECORDS OF DTC, ITS NOMINEE OR ANY DTC PARTICIPANT WITH RESPECT TO ANY OWNERSHIP INTEREST IN THE BONDS, OR PAYMENTS TO, OR THE PROVIDING OF NOTICE FOR, DTC PARTICIPANTS OR THE INDIRECT PARTICIPANTS OR BENEFICIAL OWNERS.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the City believes to be reliable, but the City takes no responsibility for the completeness or accuracy thereof, or the absence of materially adverse changes in such information subsequent to the date hereof. For further information, Beneficial Owners should contact DTC in New York, New York.

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CITY OF PHILADELPHIA, PENNSYLVANIA • WATER AND WASTEWATER REVENUE BONDS, SERIES 2015A AND WATER AND WASTEWATER REVENUE REFUNDING BONDS, SERIES 2015B

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